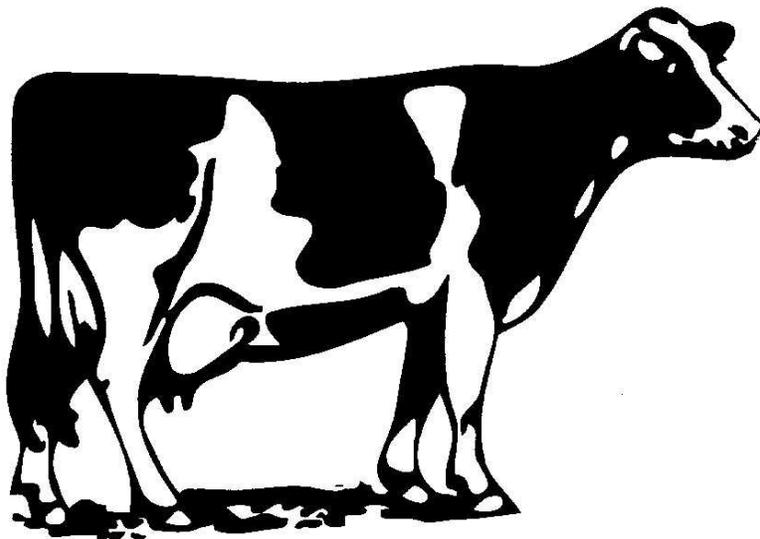


OKLAHOMA 4-H DAIRY QUIZ BOWL —Study Questions—



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INTRODUCTION

The questions in this database have been compiled and edited to provide a convenient resource for teaching youth about the dairy industry and for training teams for competition. Questions cover all areas of the dairy industry. Subject areas include but are not limited to: agronomy, feeds and feeding, milk quality, herd health, reproduction, genetics, marketing, manufacturing, dairy foods, judging and showing, calf raising and the history of the dairy industry. All areas of dairy production, manufacturing, and marketing are included. Many questions are not limited to the dairy industry in their application; however, they are related in some manner. Questions cover most areas of science. Most of the questions are generic in nature; however, a few are specific to Oklahoma.

Questions are placed into 14 categories. Many questions could be placed into more than one category. Classification was based primarily on which category would be the most likely to be used by most individuals. Similar questions may also be seen in more than one category. There are also several variations of the same question. This was intentional to encourage the learning of principles and to reduce the memorization of specific questions.

The primary sources of information for the questions in this database are 4-H manuals, extension literature and Hoard's Dairyman magazine, and reference guides, and publications of the American Dairy Association and Dairy Council. Coaches are encouraged to use these materials to supplement the questions found in this database thus keeping the information current. Textbooks on dairy management are also excellent study guides.

Efforts were made to insure the accuracy of the information provided; however, the dynamic nature of the industry will result in some inaccuracies. Oversights in the editing process may also result in some errors. If errors are noted, please contact Dan Waldner by mail at 201 Animal Science, Stillwater, OK 74078 or by email at: waldner@okstate.edu

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Agronomy and Forage Production

- T/F Corn that is severely stunted by drought still has a use and can be best salvaged by ensiling it. **True**
- T/F If silage gets really hot; it affects the quality of the protein and the feeding value of the silage. **True**
- T/F If silage gets really hot, the quality of the protein and the feeding value of the silage are improved. **False**
- T/F No-till cropping programs reduce soil erosion. **True**
- T/F One of the reasons for filling a silo as fast as possible is to reduce the amount of air that is mixed with the forage. **True**
- T/F The microwave oven cannot be used to determine forage moisture level because of the way in which it heats things. **False**
- T/F The protein content of hay is greatest for hay cut at the vegetative stage, and least for hay cut when mature. **True**
- T/F Silage in a silo has a value of 10 times the price of #2 corn. **True**
- T/F Alfalfa is a major source of fiber and protein. **True**
- T/F *Aspergillus flavus* is a mold that produces aflatoxin that can cause serious problems in dairy cattle. **True**
- T/F Animal health problems often occur if haylage particles are too long. **False**
- T/F Because they are organic, acids used to preserve hay are not dangerous. **False**
- T/F Mold growth in high moisture corn raises its nutrient value. **False**
- T/F Ensiling a crop improves its feeding value. **False**
- T/F Distribution within the silo is an important part of making good quality silage. **True**
- T/F Samples of hay taken in a windrow are just as accurate as samples taken after baling for determining forage quality. **False**
- T/F Forages lose part of their vitamin content when they are stored for several months. **True**
- T/F Potassium levels are more concentrated in the leaves than in the stems of plants. **False**
- T/F Legumes produce nitrogen in nodules on the roots. **True**
- T/F Nitrate levels in silage will increase during fermentation. **False**
- T/F Soil erosion in the United States averages over 4 tons per acre per year. **True**
- T/F Endophyte infected fescue grows and performs better than endophyte-free fescue. **True**
- T/F Anhydrous ammonia has been used experimentally to improve the digestibility of low quality forages. **True**
- T/F Anhydrous ammonia has been used to preserve hay that was baled too wet. **True**
- T/F Corn silage is generally high in protein compared to other roughage sources. **False**

What does the acronym RFV stand for when talking about forage? **Relative Feed Value**

In which frost-damaged forage crop does prussic acid develop? **Sorghum, Sudan grass**

What is the recommended length of cut for corn silage? **1/4" to 3/8" Theoretical cut**

You purchased 100 pounds of 8-12-10 fertilizer. What does the number 10 mean? **Fertilizer is 10 Percent potash or potassium**

What is the ideal dry matter content for corn silage? **33 - 35 Percent**

What is the indicator of physiological maturity in corn grain? **Black layer formation or milk line formation**

What is the pH of well-preserved corn silage? **3.7 - 4.2**

What type of silo will generally have the greatest seepage? **Bunker**

What happens when silage or haylage is put into the silo too dry? **Doesn't pack; May heat or burn; Less digestible**

What problem can arise when hay, which has been treated with some preservatives, is burned? **Toxic gases (hydrogen cyanide) can be formed**

Which type of lime contains the highest concentration of magnesium? **Dolomitic**

Which of the following does not describe silage that was cut too dry and not packed well: caramel odor, brown color, higher protein digestibility, lower energy digestibility? **Higher protein digestibility**

Which of the following is not True concerning silage which cut too dry and not packed well: caramelized odor, brown color, decreased protein digestibility, or increased energy digestibility **Increased energy digestibility**

The grass and weeds below your trench silo died after you recently filled your silo. What caused this to die? **Nitrogen dioxide**

You purchased 100 pounds of 8-12-10 fertilizer. What does the number 8 mean? **Fertilizer is 8% nitrogen**

In drought stunted corn, where will the largest amounts of nitrate be found? **In the stalks**

Why are field losses of forage using baleage smaller than conventional round and square bales? **Because of the higher moisture content**

You purchased 100 pounds of 8-12-10 fertilizer. How many pounds of nitrogen are in the fertilizer? **8 pounds**

You purchased 100 pounds of 8-12-10 fertilizer. How many pounds of phosphorus are in the fertilizer? **12 pounds**

You purchased 100 pounds of 8-12-10 fertilizer. How many pounds of potassium are in the fertilizer? **10 pounds**

Where is nitrogen dioxide most likely to be found on a dairy farm? **In the silo**

The Bt gene has been inserted into corn through a process called transgenics. From what does the gene protect the corn plant? **European corn borer**

Which acid would be found at the highest level in quality silage? **Lactic**

What percentage of the cropland in the United States is considered as highly erodible? **30 Percent**

What percentage of the soil must be covered by a crop residue following planting to be classified as conservation tillage? **30 Percent**

What is the toxic gas often found in silos? **Nitrogen dioxide**

What happens when silage or haylage is put into the silo too wet? **Lose nutrients; improper fermentation; lower palatability**

Which of the following is not a legume: alfalfa, fescue, lespedeza, or red clover? **Fescue**

Ryegrass is an annual. What is an annual? **Plant that must be reseeded every year**

Silage fermentation aids containing only heterofermentative bacteria are generally not recommended. What are heterofermentative bacteria? **Bacteria that produce more than 1 acid**

Silage fermentation aids, that contain bacteria, should be added at what minimum concentration? 100, 10,000, 100,000, or 1,000,000 organisms per gram of silage? **100,000 Organisms**

A sample of forage weighs 100 grams including the bag that weighs 10 grams. Dry weight of the bag and sample is 40 grams. What is the dry matter percent of the forage? **33 Percent**

A ton of corn silage is worth how many times a bushel of corn? **10**

A yellowish haze is seen on the ground just below your trench silo. What is causing this haze? **Nitrogen dioxide**

Alfalfa is classified as a perennial. Define a perennial? **Plant that persists for several years without reseeding**

At what temperature does silage become heat damaged: 32 degrees F, 72 degrees F, 120 degrees F, 200 degrees F or 212 degrees F? **120 Degrees Fahrenheit**

What percentage of silage dry matter is lost in seepage? **5-8 Percent**

When making baleage, what moisture level should the hay be? **60 to 70 percent**

What percentage of the dry matter of plants is made up of carbohydrates? **75 Percent**

Define the term perennial **Plant which persists for several years without reseeding**

Drought stressed or insect infected corn grain is susceptible to what problem? **Aflatoxin**

For typical silage other than corn silage, what is the dry matter content of direct cut forages? **25 Percent dry matter**

How can a farmer bale wet or tough hay? **Adding chemical preservatives**

How does the particle size of limestone affect the pH of the soil to which it is applied? **Smaller the particle size the more rapidly it will raise the pH**

Why is it important to know how much water or moisture is in forage? **Obtain maximum quality and storage; Adequately balance a ration**

Potassium carbonate or sodium carbonate can be sprayed on hay for what purpose? **Reduce the drying time**

You purchased 100 pounds of 8-12-10 fertilizer. What does the number 12 mean? **Fertilizer is 12% phosphorus**

On most farms which type of silage storage facility gives the least cost per ton of silage stored? **Bunker**

Which of the following does not apply to silage cut too dry and not packed well: caramelized odor, brown color, increased protein digestibility, decreased energy digestibility? **Increased protein digestibility**

Which of the following is not a recommended procedure for making silage in a trench or bunker silo: chop coarse, fill fast, pack hard, or cover? **Chop coarse**

The optimum soil pH for growing alfalfa is higher than for most other crops. How can soil pH be raised if it is too low? **By incorporating lime into the soil**

Your soil test report indicates that you need to include magnesium when you apply lime to your fields. Which type of lime should you use? **Dolomitic**

What is the danger to man when entering an upright silo too soon after filling? **Toxic silo gases may be present**

What toxic substance is most likely to be found in frost damaged sorghum? **Prussic acid**

Dark color and a burnt odor are general indicators of what problem in silage. **Heat damage**

Drought stressed forages often contain toxic levels of what substance? **Nitrates**

What legume has the ability to remove accumulated nitrate to a depth of 12 feet by its second year of growth? **Alfalfa**

Corn silage can be priced relative to the value of corn grain. What is the general rule? **Ton of corn silage is worth 7-10 times the price of a bushel of corn**

Forage quality is dependent upon several factors. Which factor is generally considered the most critical in determining forage quality? **Stage of maturity at harvest**

Define autotoxicity in alfalfa? **Alfalfa plants release a chemical that inhibits the germination of newly seeded alfalfa**

Chemicals can be used to decrease the drying time for hay. Name 1 of the chemicals commonly used. **Potassium carbonate; Sodium carbonate**

Forages ensiled with too much moisture result in the formation of an undesirable organic acid. What is the acid? **Butyric acid**

Acid detergent insoluble nitrogen (ADIN) is an index of what problem that can develop in stored forages? **Heat damage**

What is the name used to describe the general class of chemicals which are used for weed control? **Herbicides**

The quality of forage is generally most affected by: variety, method of harvesting, stage of maturity at harvest, or method of storage? **Stage of maturity at harvest**

Which of the following is not a recommended procedure for making silage in a trench or bunker silo: fill fast, pack hard, fill slowly or cover? **Fill slowly**

Potassium carbonate can be sprayed on hay for what purpose: reduce drying time, preserve wet hay until it dries, increase digestibility, or increase palatability? **Reduce drying time**

Which micronutrient is most likely to be deficient in alfalfa production: iron, boron, cobalt, or copper? **Boron**

Which of the following: pasture, alfalfa, soybeans or corn silage, produces the most energy per acre per year?
Corn silage

Which of the following is not a legume: alfalfa, ryegrass, red clover, or lespedeza? **Ryegrass**

Well-preserved corn silage will have a pH between .7 and 1.2, 3.7 and 4.2, 6.7 and 7.2 or 9.7 and 10.2.
3.7 to 4.2

Numerous chemicals are used on modern dairy farms. For what purpose is a herbicide used? **Weed control**

Frost damaged sorghum may contain toxic levels of what substance? **Prussic acid**

What is the minimum recommendation for the length of cut for hay and corn silage? **.25 Inch**

What vitamin is contained in green forage? **Vitamin A**

Why should legume seeds such as alfalfa be inoculated before planting? **Ensure that the proper bacteria is available for nitrogen fixation**

Mycotoxins are the result of what problem with forages? **Mold**

You dried a forage sample weighing 100 gm excluding the bag weight of 10 gm. The dry weight of the bag & sample is 40 grams. What is the dry matter percentage of the forage? **30 Percent**

You purchased a ton of 8-12-10 fertilizer. How many pounds of potassium are in the fertilizer? **200 Pounds**

Your silage or hay is dark brown and has an odor similar to tobacco or molasses? What problem should you suspect? **Heat damage**

Beta-carotene is a precursor for what vitamin? **Vitamin A**

What does the term corn stover refer to? **Corn stalk after the ear is removed**

Birdsfoot trefoil is classified as a perennial. Define a perennial? **Plant that persists for several years without reseeding**

Which important nutrient is found in the nodules on the roots of legumes? **Nitrogen**

What toxic substance is most likely to be found in drought stressed forages? **Nitrates**

Several organic acids are produced during the fermentation process of silage. What is the most prevalent acid found in well-preserved silage? **Lactic acid**

Mechanical conditioners are often used in the harvesting of hay. What is the purpose in using these? **Decrease the drying time**

What term refers to the corn stalk after the ear is removed? **Corn Stover**

What is the term for the toxic substance produced by a mold? **Mycotoxin**

Nitrogen is converted into what product by plants? **Protein**

How can you increase the starch availability of corn silage that was harvested too dry? **Chopping more finely; Processing**

NDF and ADF both contain cellulose & lignin, which other structural carbohydrate is included in NDF?
Hemicellulose

Define the term green manure. **Forage crop that is plowed under to provide nutrients for a subsequent crop**

Corn silage can be harvested with 5-10 percent more moisture when it is stored in a horizontal silo than when it is stored in a vertical silo. Why is this so? **Less vertical pressure to cause seepage**

Hay should be baled when the forage is above what percent dry matter? **80 Percent dry matter**

What is a management intensive rotational grazing system? **Pasture management system to utilize pasture forage efficiently by rotating cows among pastures as determined by forage growth**

What is a nurse crop? **Annual crop planted along with a perennial crop to assist in establishing the perennial**

How can the harvesting procedure be altered to reduce nitrate levels in drought stressed corn silage? **Raise the cutter bar**

Homofermentative bacteria are generally the most desirable for addition to silage as a fermentation aid. What are homofermentative bacteria? **Bacteria that produce only one acid**

Corn silage in a silo has a value of how many times the price of number 2 corn grain? **10 Times**

Which nutrient is associated with winter hardiness in plants? **Potassium (Potash)**

Name 3 perennial crops used for grazing. **Fescue; Perennial ryegrass; Bermuda grass; Orchard grass; Timothy Alfalfa; Clovers; Bahia grass; Bluegrass**

Name 3 methods of reducing soil erosion. **Wind breaks; Cover crop; Strip cropping; Contour cropping; Terracing; Grass waterways; Reduced tillage; Sod seeding**

Name 3 situations when silage fermentation aids may be of benefit? **Ensiling wet forages; Ensiling in trench or bunker silo; Longer bunk life of silage is important**

Name 4 additives that can be used to improve silage fermentation or preservation. **Dry grains; Molasses; Limestone; Acids; Salt; Urea; Anhydrous ammonia; Microbial inoculants**

Name 3 valuable nutrients that are found in the seepage from a silo. **Minerals; Organic acids; Protein; Soluble sugars**

Name 3 annual crops often used for grazing. **Rye; Ryegrass; Wheat; Oats; Barley; Sorghum; Annual clovers; Sudan grass**

Name 3 methods of speeding up the hay making process. **Conditioning; Desiccants; Preservatives; Barn dryer**

Name 3 advantages of using no-till seed alfalfa. **Reduced trips over fields; less soil compaction; less power required; reduced moisture evaporation**

Give 3 different types of forages. **Hay; Pasture; Silage**

Name 3 advantages of round bale silage also referred to as baleage. **Reduces risk of weather damage, Dual use of baler, Low fixed and operating costs, Less energy than chopping, Lower field losses, Easily expandable; Higher storage moisture; More natural color; Can be self-fed; Easier to feed; Absorbs less moisture; Cost efficient**

Name 3 disadvantages of round bale silage also referred to as baleage **Difficult to maintain airtight storage, Variable fermentation, Storage losses greater than conventional silo, Cost of plastic bags or wraps, Greater labor requirements, Plastic disposal**

Name 3 factors that influence silage quality. **Moisture; Particle size; Cutting date; Speed of Filling; Degree of packing; Sealing of silo; Forage variety**

Legumes are known as nitrogen fixing plants, because they add nitrogen to the soil. Name 3 different legumes that are used in dairy rations. **Alfalfa; Beans (dry; vines); Birdsfoot trefoil; Clover; Lespedeza; Peanuts; Peas (vines); Soybeans**

Name 3 potential benefits of adding anhydrous ammonia to corn silage. **Increase protein content; Reduce storage losses; Increase bunk life**

Name 3 additives that can be used to improve silage fermentation or preservation. **Dry grains; Molasses; Limestone; Acids; Salt; Urea; Anhydrous Ammonia; Microbial inoculants**

Name 3 situations in which the use of silage inoculants may be justified? **Short wilting time (only 1 day); Low forage yield (< 1 T dm/acre); Temperature < 60; Extended dry weather before harvest; Direct cut high moisture crops**

Name 3 non-legume forages that are grazed for dairy cattle. **Bermuda grass; Orchard grass; Fescue; Oats; Wheat; Rye; Ryegrass; Sorghum; Bahia grass; Bluegrass; Timothy; Barley**

Name 3 forages for which hay desiccants are effective. **Alfalfa; Clover; Lespedeza; Peanuts; Birdsfoot trefoil**

Name 3 forages for which hay desiccants are not effective. **Brome grass; Orchard grass; Timothy; Bermuda grass; Fescue; Ryegrass; Wheat; Oats; Rye**

Name 3 legumes used for grazing or hay. **Alfalfa; Clover; Lespedeza; Vetch; Soybeans; Peanuts**

Calf Rearing

- T/F It is never a good idea to give a calf all the hay it will eat. **False**
- T/F Calves consuming colostrum from dams treated with a dry cow mastitis preparation may have detectable levels of antibiotics in their body tissue. **True**
- T/F Calves should be identified with a tattoo and/or an ear tag soon after birth. **True**
- T/F Calves should generally receive milk or milk replacer at a rate of 8-10% of their body weight. **True**
- T/F Colostrum can be fed to calves that are more than 3 weeks of age. **True**
- T/F Colostrum is as effective in protecting a calf against disease if she first gets it when she is 36 hours old, as when she is just a few hours old. **False**
- T/F Excess colostrum that is allowed to ferment at room temperature can be safely fed to baby calves. **True**
- T/F Calves reared on slatted floors or gates tend to have more knee and hock problems. **True**
- T/F High humidity is very harmful to calf health. **True**
- T/F A calf hutch is usually 20 feet long and 10 feet wide. **False**
- T/F A normal calf will not nurse its mother for the first 12 hours. **False**
- T/F Colostrum is not as effective in protecting a calf against disease if she first gets it when she is 36 hours old, as when she is just a few hours old. **True**
- T/F Sanitary conditions help to promote scours. **False**
- T/F A good calf starter contains about 10% crude protein. **False**
- T/F Calves should not be fed hay until they are 6 months old. **False**
- T/F Colostrum tends to cause constipation in young calves. **False**
- T/F How a heifer is raised will have little effect on her lifetime milk production. **False**
- T/F It is not necessary to identify young calves with a tattoo or ear tag. **False**
- T/F A warm, humid barn is best for raising calves. **False**
- T/F Colostrum should not be fed to calves that are more than 3 weeks of age. **False**
- T/F Milk entering the abomasum of the baby calf coagulates forming a solid curd. **True**
- When feeding calves, what protein source is best: vegetable protein or milk protein? **Milk protein**
- Holstein heifers from birth to 24 months should gain how many pounds per day? **1.8 pounds**
- What is the most dangerous symptom of scours? **Dehydration**
- Newborn calves should receive colostrum how soon after being born? **30 - 60 Minutes**

What is wrong with starch in a milk replacer? **Cannot be digested by calves and may result in scours**

What is the most common digestive disorder in calves? **Scours**

What is another name for scours in calves? **Diarrhea**

What is the name of the special solution given to calves that have severe diarrhea and are dehydrated? **Electrolyte solution**

When a calf has severe scours and is dehydrated, a special fluid is substituted for milk. What is this special fluid called? **Electrolyte solution**

When should calves go into the hutch? **Sooner after birth the better**

Which compartment comprises about 25% of a young calf's stomach and constitutes 80% in the mature cow? **Rumen**

Which of the following ingredients would you expect to find in a milk replacer: urea, citrus pulp, dried whey, or soybean meal? **Dried whey**

Name the 2 major sources of energy for newborn calves. **Lactose; Fat**

What is the biggest expense in raising a heifer? **Feed costs**

In order to help prevent calf and heifer diseases, calves should be observed a minimum of how many times daily?
2

What percentage of the total cost of rearing heifers to 24 months of age occurs in the first 3 months: 10%, 15%, 20%, or 50%? **20 Percent**

A 2-month-old Holstein dairy calf requires how many pounds of protein per day? **1 Pound**

Absorption of antibodies from colostrum primarily takes place in which compartment of a calf's stomach?
Abomasum

The largest compartment of a newborn calf's stomach is the: rumen, reticulum, omasum, or abomasum.
Abomasum

For what purpose is caustic potash used with dairy calves? **Dehorn the calves**

How long after birth should a calf be fed colostrum? **3 days**

What disease is likely to develop if calves are raised in a drafty environment? **Pneumonia**

What is one management practice that can help to reduce early calf disease and mortality among baby calves?
Making sure the baby calf gets adequate colostrum

Pneumonia is a disease of which organ system? **Respiratory system**

What is being determined when you use a colostrometer? **Level of immunoglobulins in the colostrum**

What type of therapy should be given to scouring calves? **Electrolyte**

What is the best protein source for feeding baby calves? **Milk**

At what age should the diet of heifers be changed from a starter ration to a grower ration? **4 Months**

A good milk replacer should contain what percent crude protein? **20 - 22 Percent**

Death of calves from scours is caused by what primary factor? **Dehydration**

How many hours after birth does a calf totally lose its ability to absorb antibodies from colostrum? **36 - 48 hours**

What is the minimum number of days a calf should be fed colostrum after birth? **3 Days**

According to USDA studies, what percentage of calves died from birth to weaning in 1996? **11 Percent (10 -12 percent)**

What is closure of the intestine? **Time after which antibodies are not absorbed into the blood stream**

Holstein and Brown Swiss heifers from birth to 24 months of age should have average daily gains of 1.3 pounds, 1.7 pounds, 2.2 pounds, or 2.6 pounds. **1.7 Pounds**

Jersey and Guernsey heifers from birth to 24 months of age should have average daily gains of: ½ pound, 1.3 pounds, 1.7 pounds, or 2.2 pounds? **1.3 Pounds**

At what age can heifers be placed on pasture? **4 Months**

At what age should heifers be before being fed silage? **About 6 months**

Which is the major compartment of a newborn calf's stomach? **Abomasum**

How should calves be grouped after weaning? **By size**

Calves obtain what vitamin when exposed to sunlight? **Vitamin D**

What is the name of the small, individual calf buildings that have recently become popular? **Calf hutches**

Immediately after a calf is born, the navel should be dipped in what solution? **Tincture of iodine**

Scours or diarrhea is caused by: consuming too much water, nutrients and fluids are not absorbed from the intestinal tract, the animal is too excited, or none of the above. **Nutrients and fluids are not absorbed from the intestinal tract**

What is another name for diarrhea in calves? **Scours**

What percent of protein should be in a good quality milk replacer? **20 Percent**

Dehydration is a symptom of what digestive disorder? **Scours**

Name the 2 diseases that cause the greatest losses in young calves. **Pneumonia; Scours**

Caustic potash is used on calves to: kill horn flies, worm the animal, dehorn the animal, or freeze brand the animal? **Dehorn the animal**

For what purpose is the specific gravity of colostrum measured using a colostrometer? **Determine antibody (immunoglobulin) content**

Why is it important to feed colostrum to a newborn calf? **Contains antibodies; Helps to protect against disease**

In the nursing calf, what directs milk from the esophagus past the rumen and directly into the omasum?
Esophageal groove

A well-ventilated, clean area, free of drafts, helps prevent what calf hood disease? **Pneumonia**

An umbilical hernia is often seen in calves but seldom fatal. Where would you find such a hernia? **Under the belly where the umbilical cord is attached (navel area)**

Silage feeding to calves should be delayed until the calf reaches: 3 months of age, 6 months of age, 1 year of age, or 2 years of age. **3 Months of age**

Name 2 methods of dehorning calves. **Burning; Cut or gouge; Caustic paste**

Vitamin D helps prevent what nutritional disorder in calves? **Rickets**

Within how many weeks after birth should a calf receive grain and hay? **1 Week**

At what age should the diet of heifers be changed from a liquid diet to a starter diet? **1-1/2 Months**

How much calf starter should a well-grown calf be eating at the time of weaning? **1-1/2 Pounds**

What is 1 management practice that can help to reduce early calf disease and mortality among baby calves?
Making sure the baby calf gets adequate colostrum

Which of the stomach compartments in a newborn calf comprise the forestomach? **Rumen, Reticulum, Omasum**

What vitamin is necessary to prevent calves from developing rickets? **Vitamin D**

What establishes passive immunity in calves? **Colostrum**

How long after birth before calves begin to produce their own immunity? **6 - 8 Weeks**

Name 2 types of infectious organisms that can cause scours in calves. **Bacteria; Protozoa; Viruses**

Caustic potash is used for what purpose with dairy calves? **Dehorning**

Before a calf is weaned it should be consuming how many pounds of starter per day? **1.5 to 2 lbs.**

Which vitamin is synthesized by young calves and does not need to be supplemented in the diet? **Vitamin C**

For what purpose would you use a colostrometer? **Determine antibody (immunoglobulin) content**

What can be done to help prevent navel ill in newborn calves? **Dip the navel in iodine shortly after birth**

Colostrum is higher in most nutrients than is normal milk; however, it is lower in one. Which nutrient is lower in colostrum than in normal milk: fat, lactose, protein, or minerals? **Lactose**

A special type of immunity for calves comes from colostrum. What is it called? **Passive immunity**

Define wean. **Change the diet from milk to other feedstuffs**

How soon should calf starter be introduced to a calf? **2-3 days**

During which phase is the calf most susceptible to a fatal disease? **Birth to weaning**

Scours affects which organ system? **Digestive system**

In most successful calf-raising programs, how old is the calf when it is weaned? **6 - 8 Weeks**

How long should you feed starter? **Up to 12 weeks**

At what age does a calf begin to chew it's cud? **2 - 3 weeks**

What could be a possible result of over-feeding a calf during the birth to weaning phase? **Scours**

The average size Holstein calf needs to consume at least how much colostrum within the first 1 to 2 hours after birth? **At least 2 quarts**

How soon after birth should a calf be offered calf starter? **3 - 5 Days**

Colostrum is lower in which of the following nutrients than is normal milk: fat, lactose, protein, or minerals?
Lactose

The esophageal groove functions for how many weeks in milk fed calves? **12 Weeks (10 - 14 weeks)**

Name 2 advantages of calf hutches. **Easily moved, Prevent disease from spreading from 1 calf to another; Ventilation**

What is the physiological function of rennin in the calf? **Coagulate milk proteins in the stomach**

What is milk replacer? **Dry powder containing milk products used as a substitute for whole milk for calves**

Name the 3 most important minerals that are lost when a calf has scours. **Chloride; Potassium; Sodium**

Name the 3 basic requirements of good calf housing. **Dry floor; clean environment; Free from drafts**

Name 4 organisms that can cause scours in young calves. **Cryptosporidium, E. coli, Salmonella, Rotavirus, Corona virus, Coccidia**

Name 3 ways in which excess colostrum can be stored until needed. **Add preservative acid; Ferment; Freeze; Refrigerate;**

Give 3 indications that your calf may be suffering from internal parasites. **General unthriftiness; General weakness; Loss of weight; Persistent diarrhea; Poor appetite; Rough hair coat; Swelling under the jaws**

Give 3 reasons for raising calves in outdoor hutches. **Low investment; Reduced calf losses; Reduced disease problems**

Give 3 reasons for scours in calves. **Bacterial infection; Drinking too much milk/Overeating; Viral infection**

Give 3 signs of illness in calves. **Poor appetite; Cough; Watery manure; Nasal discharge; Drooping ears; Dull eyes; Lack of energy; Elevated temperature**

Give 3 of the major causes of calf scours. **Inadequate colostrum; Poor quality milk replacer; Unsanitary calving conditions; Overfeeding; Poor quality colostrum; Overcrowding; Inadequate ventilation**

Give 3 reasons why over conditioning is undesirable in young dairy heifers. **Expensive; Reduces subsequent milk production; More difficult to breed**

Name 3 methods of dehorning calves. **Electric dehorner; Caustic paste; Scoops (Barnes); Tube dehorner; Gouge; Saw**

Genetics

- T/F It is possible to selectively mate cows to increase or decrease the butterfat production of their daughters. **True**
- T/F The gene for polledness in dairy cattle is recessive. **False**
- T/F Because calves of the same sire vary greatly in calving ease, it is impossible to accurately rank sires for this trait. **False**
- T/F Cows with high transmitting ability are most often daughters of high-predicted transmitting ability bulls. **True**
- T/F Daughters of sires with higher predicted transmitting abilities for milk are more efficient in their conversion of ration nutrients to milk. **True**
- T/F Environmental differences have a greater effect on milk production than do genetics. **True**
- T/F All recessive genetic traits in dairy cattle are deleterious or harmful. **False**
- T/F All genes are found in pairs. **True**
- T/F If the daughter of a bull has not completed her 2-year-old record, she is not included in his proof. **False**
- T/F In dairy breeding, there are many traits we can select for. The ones we choose to select for should be those that are the most economically important. **True**
- T/F In most instances a cow's production is a relatively accurate indicator of her genetic ability. **False**
- T/F The USDA calculates predicted transmitting abilities for milk, fat, protein, dollars and type. **False**
- T/F The dam is the father of the animal. **True**
- T/F The gene for red hair coat in Holsteins is dominant. **False**
- T/F The gene for red hair coat in Holsteins is recessive. **True**
- T/F The pedigree is the vaccination record of a cow. **False**
- T/F The present method of calculating sire summary information does not take into account the genetic level of the herdmates. **False**
- T/F The present method of calculating sire summary information takes into account the genetic level of the herdmates. **True**
- T/F The sire is the father of the animal. **True**
- T/F When buying bull semen, you can afford to pay more for a bull with a high PTA than you can for a bull with a low PTA. **True**
- T/F In order to make genetic progress in a trait the trait must have variation. **True**
- T/F The herd with the highest herd average is always the best herd genetically. **False**
- T/F PTA\$ indicates how much a dairyman can justify paying for a bull's semen. **False**

T/F The best estimate of a mature bull's future predicted transmitting ability is his present predicted transmitting ability. **True**

T/F In a good breeding program, type traits should receive twice the importance predicted transmitting ability for milk receives. **False**

T/F An animal whose parents are from 2 entirely different breeds is a crossbred. **True**

T/F Reliability is a measure of the fertility of a bull. **False**

T/F A progeny tested (proven) bull is always superior to an untested bull. **False**

T/F Projected records are used in the calculation of predicted transmitting ability. **True**

T/F As we get more daughter information on a bull, we get a better estimate of his genetic merit. **True**

T/F PTA\$ gives a dairyman an indication of how much he can pay for a bull's semen. **False**

T/F Linebreeding is breeding for a straight top line. **False**

T/F Reliability measures conception rate. **False**

T/F PTA\$ is an economic index which indicates how much should be paid for a unit of semen. **False**

T/F The USDA Sire Summary is prepared in March and September. **False**

T/F The National Association of Artificial Breeders (NAAB) collects data on calving difficulty that is used to develop a sire summary for calving ease. **True**

T/F The best breeding program is one in which you select to improve as many traits as possible. **False**

T/F Each young sire should be sampled in a large number of herds. **True**

T/F The gene for polledness in dairy cattle is dominant. **True**

T/F A bull's semen is priced on his predicted transmitting ability for milk and predicted transmitting ability for type. **False**

T/F A bull's proof, once his reliability is greater than 50%, will always stay the same. **False**

When did the USDA begin evaluating the genetic merit of sires? **1935**

In what year was the NAAB calving ease sire summary first published? **1978**

Which was the first method of evaluating the genetic merit of sires? **Daughter-Dam comparison**

In what year did the U.S.D.A quit using the daughter-dam method of comparison for sire evaluations and begin using herdmates? **1961**

The National calving ease sire summary was first published in what year? **1980**

In which months is Interbull sire summaries released? **February and August**

In which months are USDA sire summaries released? **February May, August, November**

What is the lowest classification score a Jersey cow can receive and still receive a classification rating of desirable?
70 Points

What is the range of classification scores for a Holstein cow to be classified as poor? **Below 64 Points**

What is the lowest classification score a Jersey cow can receive and still receive a classification rating of acceptable? **60 Points**

What is the lowest classification score a Holstein cow can receive and still receive a classification rating of good?
75 Points

What is the lowest classification score a Holstein cow can receive and still receive a classification rating of good plus? **80 Points**

What does the acronym ERPA stand for? **Estimated Relative Producing Ability**

Zieland Zebo has NAAB code of 1H967. What does the H stand for? **Breed - Holstein**

The percent culled (% CULL) in a bull's proof is based on what animals? **Bull's first lactation daughters that would have been able to complete a 305-day record**

What is the term used to describe 2 calves born to the same cow and resulting from 1 egg? **Identical twins**

What is the term used to describe 2 calves sired by the same bull and born to the same cow? **Full-sibs**

What organization sponsors calving ease evaluations? **National Association of Animal Breeders (NAAB)**

What term in the Animal Model replaced the term cow index? **Predicted transmitting ability**

What trait or traits are included in the Net Merit Index in addition to MFP\$? **Productive life (PL) and Somatic cell score (SCS)**

If the PTA of the sire is +1000 and the PTA of the dam is +500, what is the predicted transmitting ability of the offspring. **+750**

Which of the following breeds was the last to begin using linear classification: Ayrshire, Brown Swiss, Guernsey, Holstein, or Jersey? **Holstein**

If the PTA of the sire is +1500 and the PTA of the dam is +100 what is the predicted transmitting ability of the offspring? **+800**

If you breed a red and white Holstein cow to a known red carrier sire, what is the chance you will get a red calf?
50 Percent

The Bt gene has been inserted into corn through a process called transgenics. What does the term transgenics mean?
Process of inserting 1 or more genes into a plant or an animal

The USDA calculates a national sire summary 4 times per year. In which months is this summary prepared?
February; May; August; November

Name a foot problem that is directly affected by genetics. **Mulefoot; More than 2 toes; Corkscrew claws; Laminitis**

The highest percentage of difficult births is expected to occur during which season? **Winter**

You breed a red and white Holstein cow to a known red carrier sire, what is the chance you will get a red calf? **50 Percent**

What is the term for the genetic make-up of the animal? **Genotype**

Why are young sires progeny tested? **Identify the best sires for breeding purposes**

What is the minimum number of services needed by a bull to be included on the ERCR list? **1000 services**

What are the 2 most important factors in determining the Reliability of a bull's proof? **Number of tested daughters; Number of herds in which his daughters produced milk**

What do the acronyms MF, LL, RVC, and PT have in common? **Letter codes for undesirable genetic recessive genes**

National Sire Summaries are calculated 4 times a year in February, May, August and November. Who calculates these sire summaries? **United States Department of Agriculture (USDA)**

Normal footed parents give birth to a mule-footed calf. What do we know about the parents? **Both were carriers for the mule foot trait**

Paul Bunyon's ox "Babe" had a rare genetic disorder that caused him to be blue. His sire was blue and his dam was normal. What percent of Babe's offspring would be blue? **50 Percent**

Which dairy breed uses TPI? **Holstein**

Rudolph's red nose could have been a genetic trait. We know that his parents both had normal noses. If it was a genetic trait, what do we also know about his parents? **Both were carriers of the genetic recessive trait for red nose**

What is the purpose of the number 33 in the sire code number 33H1984? **Identifies the bull stud where the semen was collected**

A 3-year-old Jersey cow received a classification score of 83. What is her classification rating? **Very Good**

A Holstein cow scoring 87 points would receive what classification rating? **Very Good**

A bull must be sampled in how many herds to receive a sampling code of "M"? **40**

What is the range of classification scores for a Jersey cow to be classified as poor? **50 - 59 Points**

Breed characteristics are included in which category of the PDCA Dairy Cow Unified Score Card? **Frame**

What is the range of classification scores for a Jersey cow to be classified as acceptable? **60 - 69 Points**

Cows with the genetically recessive trait known as mulefoot are often superovulated and the embryos transferred to recipients. What is the purpose of this procedure? **See if the bull(s) are mulefoot carriers**

What is the range of classification scores for a Holstein cow to be classified as fair? **65 - 74 Points**

What is the range of classification scores for a Jersey cow to be classified as desirable? **70 - 79 Points**

What is the range of classification scores for a Holstein cow to be classified as good? **75 - 79 Points**

What is the range of classification scores for a Holstein cow to be classified as good plus? **80 - 84 Points**

What is the range of classification scores for a Jersey cow to be classified as very good? **80 - 89 Points**

What is the range of classification scores for a Holstein cow to be classified as very good? **85 - 89 Points**

What is the highest classification score a Brown Swiss cow can receive? **90 Points**

What is the range of classification scores for a Jersey cow to be classified as excellent? **90 Points and above**

What is the range of classification scores for a Holstein cow to be classified as excellent? **90 Points and above**

In the following sire's code number 33H1984, what does the letter H stand for? **Breed (Holstein)**

How are predicted transmitting abilities (PTA's) used? **Identify the superior bulls or cows for a specific trait; indicate how well a group of sons and daughters should perform in relation to another group of sons and daughters**

How can a person determine if an animal is a carrier of a deleterious recessive trait? **Mate to a known carrier of the trait**

How many X chromosomes are found in the body cells of a dairy bull? **1**

How many X chromosomes are found in the body cells of a dairy cow? **2**

What animals were used to determine the current genetic base for the USDA Sire Summary? **Cows born in 1990**

What is the name of a cow's ancestry or family tree? **Pedigree**

Reliability is calculated using information from which sources? **Pedigree; Performance; Progeny**

What does the acronym PTA stand for when talking about a sire summary? **Predicted Transmitting Ability**

What does the acronym PTA Type stand for when talking about a sire summary? **Predicted transmitting ability for type**

What is the reason for having a genetic base? **Provide a reference point for genetic evaluations**

What is a teratologist? **Scientist who specializes in genetic defects**

What is meant by the term "proven sire"? **Sire whose daughters have been production tested and indicate the ability of the sire to transmit genes for high milk production**

What is the criterion upon which "Elite" cows are identified in the Holstein breed? **Net Merit**

What is a predicted transmitting ability (PTA) for milk? **Within breed comparison of a bull's offspring for milk**

What factors are used to calculate the PTA\$ on a sire? **Sire's transmitting abilities for milk and fat and previous year's pay price**

What is the lowest classification score a Holstein cow can receive and still receive a classification rating of very good? **85 Points**

The American Guernsey Cattle Club offers a program known as TPE. What do the letters TPE stand for? **Total performance evaluation**

What is the lowest classification score a Jersey cow can receive and still receive a classification rating of very good?
80 Points

When a Jersey cow is bred to a Holstein bull, what term describes the resulting offspring? **Crossbred**

Paul Bunyon's ox "Babe" had a rare genetic disorder that caused him to be blue. Both his parents were apparently normal. What are the odds his next full-sib will be blue? **25 percent**

What group of animals was used to establish the base for genetic evaluations in the Animal Model? **Cows born in 1990**

Who is considered to be the first person to apply the principles of genetic selection to cattle? **Robert Bakewell**

What is the term used to describe 2 calves with the same mother but born to 2 different cows? **Embryo Transfers**

Who pioneered the development of our livestock breeds through selection for utility, progeny testing of bulls, & through inbreeding in the 1700's? **Robert Bakewell**

ABS Global successfully cloned a Holstein bull named Gene. Since Gene is a male. What will his sex chromosomes be? **XY**

A horned cow is mated to a polled bull, what is the probability that the calf will be polled? **100 Percent**

In a percentage, what is the heritability for milk production? **25 Percent**

Paul Bunyon's ox "Babe" had a rare genetic disorder that caused him to be blue. Both his parents were apparently normal. What do we know about the disorder? **It's a genetic recessive**

What is genetics? **Study of heredity and biological variation**

A polled cow and a polled bull are mated. The resultant offspring is horned. What do we know about the parents?
They are both carriers of the recessive gene

When an animal that has the genetic trait mulefoot is mated to a mulefoot carrier animal, what percentage of the offspring will have the trait? **50 Percent**

Blood typing is required when conducting an embryo transfer. For what purpose is it used? **Verify parentage of the offspring**

Breeding value and transmitting ability are related to each other. What is the relationship of transmitting ability to breeding value? **Equal to one-half (1/2) of the breeding value**

Define the term transgenics. **The process of inserting 1 or more genes into a plant or an animal**

What is a cow's father called? **Her sire**

What is a cow's mother called? **Her dam**

A 3-year-old Holstein cow received a classification score of 87. What is her classification rating? **Very Good**

A 3-year-old Jersey cow received a classification score of 87. What is her classification rating? **Very Good**

The deleterious recessive gene for BLAD is associated with which breed? **Holstein**

The deleterious recessive gene for porphyria or pink tooth is most commonly associated with which dairy breed?
Holstein

Of the following traits: milk production, fat production, protein percentage and calving interval, which is generally considered to be the least heritable? **Calving interval**

Of the following traits: milk production, fat production, protein percentage and protein production, which is generally considered to be most highly heritable? **Protein percentage**

A 3-year-old Holstein cow received a classification score of 78. What is her classification rating? **Good**

A 3-year-old Jersey cow received a classification score of 78. What is her classification rating? **Desirable**

A cow has 30 pairs of chromosomes. How many chromosomes are found in the ovum? **30**

On a sire proof, what do the letters PTA stand for? **Predicted transmitting ability**

Classification compares an individual against a standard for the particular breed. What is this standard called? **Ideal type**

Which of the following is not an undesirable genetic recessive trait found in dairy cattle? DUMPS, mulefoot, weaver, recto-vaginal construction or red hair color? **Red hair color**

What is the procedure by which a cow is compared to the ideal for her breed? **Classification**

When a bull is mated to his daughter, the resulting offspring is said to be: Outbred, Inbred, Crossbred, or Thoroughbred. **Inbred**

A 3-year-old Holstein cow with a classification score of 83 has a rating of good plus. What would be the classification rating for a Jersey cow with the same classification score? **Very Good**

Which of the following is not an undesirable genetic recessive trait found in dairy cattle: Bulldog, Big foot, Mulefoot, Pink Tooth, or None of the above. **Big Foot**

What is the lowest classification score a Jersey cow can receive and still receive a classification rating of good? **There is no Good category in the Jersey classification system**

According to research, what is the best indicator of net income per day of life for Jersey cows? **First lactation milk yield**

What are a bull's progeny? **Sons and daughters**

Which genetic recessive defect is characterized by deterioration of the spinal cord, clinical signs after 6 months of age and found most often in the Brown Swiss breed? **Weaver**

What is the technical term used to describe brothers and sisters? **Siblings**

What is the more common name for the genetic recessive known as syndactylism? **Mulefoot**

Which foot is most commonly affected by the genetic defect known as syndactylism or mulefoot? **Right front foot**

Which genetic recessive defect is characterized as causing death in calves during the neonatal period? **Bovine leukocyte adhesion deficiency (BLAD)**

What is the science that deals with the laws of inheritance? **Genetics**

How many chromosomes are found in the gamete of the dairy cow? **30**

The deleterious recessive gene for rectovaginal constriction is most commonly associated with which dairy breed?
Jersey

When an animal that has the genetic trait mulefoot is mated to a mulefoot carrier animal, what percentage of the offspring will be carriers of the trait? **50 Percent**

A Holstein bull scoring 87 points would receive what classification rating? **Very Good**

What is the term used to describe the genetic make-up of an individual? **Genotype**

What is the term used to describe the physical characteristics and performance of an individual? **Phenotype**

What is the term used to describe two calves born to the same cow from different sires? **Maternal half-sibs**

What is the term used to describe two calves born to two different cows and sired by one bull? **Paternal half-sibs**

Define phenotype. **Observed performance of an individual**

Define heritability. **That fraction of the parent's superiority or inferiority that is transmitted to the offspring**

What does the acronym TPI stand for when talking about a sire summary? **Total performance index**

What does the acronym PTI stand for when talking about a sire summary? **Production-type index**

What does the acronym BAA stand for when talking about a herd's classification record? **Breed age average**

What does the acronym BLUP stand for when talking about genetic evaluations? **Best linear unbiased prediction**

The deleterious recessive gene for DUMPS is associated with which breed? **Holstein**

The deleterious recessive gene for limber leg is most commonly associated with which dairy breed? **Jersey**

How can you identify a calf with limber leg? **Calf is born with no control of the rear legs**

How do you recognize a calf with mulefoot? **Single toe on 1 or more feet**

What percentage of the offspring from 2 parents who are carriers of a genetic recessive abnormality will exhibit the abnormality? **25 Percent**

What percentage of the offspring from 2 parents who are carriers of a genetic recessive abnormality will be carriers of the trait? **50 Percent**

What does the acronym EPDBH stand for? **Estimated percent difficult births in heifers**

A Holstein cow can be placed in 1 of 6 classification categories based on her classification score. Name 3 of these categories: Excellent; **Very Good; Good Plus; Good; Fair; Poor**

A Jersey cow can be placed in 1 of 5 classification categories based on her classification score. Name 3 of these categories: Excellent; **Very Good; Desirable; Acceptable; Poor**

How many individual traits make up the udder category on the PDCA scorecard? **7**

A cow with a classification score of 90 or better is given what classification rating? **Excellent**

A normal footed cow is a carrier of the gene for mulefoot. She gives birth to a calf with mulefoot. What must have happened? **She was bred to a mulefoot carrier bull**

A mulefoot carrier cow is mated to a mulefoot carrier bull. How could you tell if the calf is mule footed? **Would have a single toe on 1 or more feet**

Calving ease summaries are calculated for which breed or breeds? **Holstein**

Who is considered to be the father of modern genetics? **Gregor Mendel**

When a cow is bred to her son, what term describes the resulting offspring? **Inbred**

Genes are located on what small thread-like structures? **Chromosomes**

What is the term for the estimate of the percent of phenotypic differences between animals which can be transmitted to progeny called? **Heritability**

What genetic measurement is the best estimate of a heifer's genetic ability for production? **Parent average**

What does the acronym PTA stand for in relation to genetic merit of individuals? **Predicted Transmitting Ability**

What is the term used to describe the process of inserting 1 or more genes into a plant or an animal? **Transgenics**

Give 1 reason for a low repeatability level on a bull. **Few daughters on test; Limited number of herds on test**

The percentile ranking which is included in the USDA-DHIA Sire Summary is based on which trait? **Predicted transmitting ability for dollars (PTA\$)**

How many pair of chromosomes is found in the body cell of a dairy cow? **30 Pair**

Where is the locus found? **On a chromosome**

When talking about the genetics of your cows, your county agent states that they are diploid. What does the term diploid mean? **The genes are found and operate in pairs**

Research indicates that cows with less dairy form, short teats, tight fore udders and higher udders were associated with lower SCC scores. What does SCC stand for? **Somatic cell count**

The "weaver" gene is a deleterious recessive gene most commonly associated with which dairy breed? **Brown Swiss**

How is the PA on a calf calculated? **½ of the sum of the PTA's of sire & dam**

A 3-year-old Holstein cow received a classification score of 83. What is her classification rating? **Good Plus**

Robert Bakewell is considered to be the first man to apply the principles of genetic selection in order to develop better breeds of livestock. Which breed of cattle did he use? **Shorthorn**

What is the most important point to consider when selecting a calf? **Calf's sire**

Predicted Transmitting Ability (PTA) includes information from 3 sources. What are they? **Pedigree, Own Performance, Progeny Performance**

Name the 3 types of genetic bases that can be used. **Fixed; Moving; Stepwise**

Name the 3 ways by which the genetic make up of a population can change. **Migration; Mutation; Selection**

Name 3 of the 4 parts that make up the Total Performance Index (TPI). **PTA Protein; PTA Fat; PTA Type; Udder composite**

What 3 things are identified in a bull's NAAB code number? **Bull stud; Breed; Individual bull**

Name 3 undesirable genetic recessive traits found in dairy cattle. **Bulldog; Dwarfism; Hairless; Imperfect skin; Mulefoot; Pink tooth; Prolonged gestation; Limber leg; Rectovaginal constriction; Weaver; DUMPS; BLAD**

Name 3 examples of indexes that can be used for genetic selection. **PTA MFP\$; TPI; PTI; PTA; CY\$; Udder composite**

Name 3 factors that determine the amount of genetic progress achieved per year. **Accuracy of selection; Selection intensity Generation interval**

Name 3 factors for which predicted transmitting abilities are calculated. **Milk; Fat; Protein; Final type score; Linear type traits; Calving ease**

Health

- T/F Leptospirosis is a disease that only affects dairy cattle. **False**
- T/F Cattle known to be infected with brucellosis must be sent to slaughter and can be purchased by any slaughter plant. **False**
- T/F Cows can get tetanus. **True**
- T/F Most commonly used farm drugs such as penicillin have no drug residue problems. **False**
- T/F Cows with milk fever have an elevated temperature. **False**
- T/F Since being identified in 1986, there have been several cases of BSE in the U. S. **False**
- T/F Leptospirosis is caused by an organism commonly found in rivers, lakes, ponds and sewage. **True**
- T/F Strain 19 is a vaccine used to prevent brucellosis in cattle. **True**
- T/F Milk fever is characterized by a cow lying down with a typical S-curve to her neck. **True**
- T/F The temperature of a cow is at its lowest point the day before she comes into heat or estrus. **True**
- T/F Vaccinating cows at the beginning of the dry period helps to increase the amount of globulin or antibodies in the colostrum. **True**
- T/F It is difficult to tell when a cow is infested with worms until she is very heavily infested. **True**
- T/F Ringworm is caused by a roundworm infestation. **False**
- T/F BVD can be detected in a herd by testing a bulk tank sample. **False**
- T/F Pinkeye is a seasonal eye infection of cattle that occurs early in the summer when sunlight is the most intense. **True**
- T/F Ringworm is caused by a fungus. **True**
- T/F A completely effective, one-time vaccine to prevent warts in cattle has been developed and is readily available. **False**
- T/F A drug, which is safe for use on beef, cows is also safe for use on dairy cows producing milk. **False**
- T/F Acutely infected animals with BVD shed the virus for a lifetime. **False**
- T/F Brucellosis in humans is known as undulant fever. **True**
- T/F Preventative medicine costs more than treating diseases. **False**
- T/F Blackleg is a bacterial disease for which there is no vaccine. **False**
- T/F Coccidiosis, a disease very common in poultry, is also a serious problem in calves. **True**
- T/F It is easy to tell when a cow is infested with worms because she is very sick. **False**
- T/F Fescue toxicity (summer syndrome) is thought to be caused by a fungus. **True**

T/F BSE is generally an inherited disease. **False**

T/F Vaccination will completely protect a cow from brucellosis. **False**

T/F Disease can be spread through the use of frozen semen that carries disease-causing viruses. **True**

T/F Strain 19 is a vaccine used to prevent tuberculosis in cattle. **False**

T/F Brucellosis in humans is known as scarlet fever. **False**

T/F A magnet always helps prevent or cure hardware disease. **False**

T/F If a cow cuts her teat it can be sewn up. **True**

T/F Humans can contract ringworm from infected cattle. **True**

T/F Lice can cause anemia in a heifer by sucking out blood. **True**

T/F Brucellosis has been completely eliminated from the United States. **False**

Abomasal displacement most often occurs to which side? **Left**

What type of microorganism is Staphylococcus aureus? **Bacteria**

In which state was Lyme disease first reported in cattle? **Wisconsin**

Intramuscular injections are given in the muscle while intravenous injections are given in the vein. Where are subcutaneous injections given? **Under the skin**

Name 2 non-domestic animals that can cause an infection of cattle with rabies? **Bats; Bobcat; Coyote; Fox; Raccoon; Skunk**

What is the leading infectious condition involving the feet of dairy cattle? Its more technical name is pododermatitis. **Foot rot**

The letters BRSV stand for what disease of dairy cattle? **Bovine respiratory syncytial virus**

Strain 19 is a vaccine for what disease? **Brucellosis (Bangs)**

What is the term used to describe excessive fluid accumulation in the mammary gland? **Udder Edema**

What percent of the dairy cows in the United States are located in brucellosis free states? **60 Percent**

What causes milk fever? **Low blood levels of calcium**

What disease does the organism Mycobacterium paratuberculosis cause? **Johne's disease**

What does the term udder edema mean? **Fluid accumulation in the udder and the surrounding tissues near the time of calving**

What is the purpose of placing magnets in the stomach of dairy cattle? **Help protect them from hardware disease caused by wire, nails or other iron objects**

What 2 respiratory diseases are most commonly vaccinated for in dairy calves? **IBR; PI-3**

Mange or scabies is a contagious skin disease caused by what type of organism? **Mites**

Milk fever is a condition that usually affects cows near calving time. In the cow, lowered levels of what in the blood cause milk fever? **Calcium**

When did the state-federal cooperative brucellosis eradication program begin? **1948**

What is the common name for the disease caused by Mycobacterium paratuberculosis? **Johne's disease**

What is the common name for paratuberculosis? **Johne's disease**

For what reason would you administer the drug poloxolene? **Prevent or correct bloat**

What is a cow's normal body temperature? **101.5 Degrees Fahrenheit**

What disease of dairy cattle is characterized by exposure and infection as a calf with severe diarrhea and weight loss that only develops after the animal is 2 years old? **Johne's disease (paratuberculosis)**

In which season of the year is pinkeye most prevalent? **Summer**

What is the major means of transmission for the disease Trichomoniasis? **Natural service**

The pH of the urine of the close-up, dry cow can indicate if the blood pH is too acid or too alkaline. What is the desired pH for Holstein cows? **6.0 to 6.5**

The pH of the urine of the close-up, dry cow can indicate if the blood pH is too acid or too alkaline. What is the desired pH for Jerseys? **5.8 to 6.2**

The letters BLV stand for what disease of dairy cattle? **Bovine leukosis virus**

What does the acronym BRSV stand for? **Bovine respiratory syncytial virus**

Rednose is the common name for what disease? **Infectious bovine rhinotracheitis (IBR)**

Name a practice that increases the frequency of bovine leukemia virus (BLV) infection. **Housing heifers in large groups; Use of common instruments for gouge dehorning, ear tagging and branding**

What is the most probable means of transmission of bovine leukemia virus (BLV)? **Instruments contaminated with blood from infected individuals**

What is the more scientific name for the disease known as the circling disease? **Listeriosis**

About what percent of the dairy cows are affected by milk fever in the U. S. each year? **6 Percent**

Dairy producers should never vaccinate what type of cattle with a modified live bovine virus diarrhea (BVD) vaccine? **Pregnant cows and heifers**

What is the normal blood calcium concentration? **9 to 10 mg per 100 ml**

Diuretic drugs are occasionally used after calving as a treatment for what condition? **Udder edema**

Excessive or inadequate intake of calcium or phosphorus can cause which disease (disorder) in dry cows? **Milk fever**

From where did Lyme disease derive its name? **Old Lyme, Connecticut**

Vaccination for IBR, BVD, parainfluenza-3 and syncytial virus will prevent some forms of which disease?
Pneumonia

What causes Lyme disease? **Spiral-shaped bacteria (spirochete)**

What does the acronym CJD stand for? **Creutz-Feld-Jakob disease**

What is the term for a disease-causing organism? **Pathogen**

What does the acronym PI-3 stand for? **Parainfluenza type 3**

What is the more common name for bovine keratoconjunctivitis? **Pinkeye**

What is a spirochete? **Spiral-shaped bacteria (spirochete)**

What is another name for the viral infection IBR (infectious bovine rhinotracheitis)? **Rednose**

What vitamin is important in helping to stop bleeding? **Vitamin K**

What does the phrase "5-Way" indicate when talking about a vaccine? **Vaccine for 5 different organisms (strains)**

What type of organism causes Infectious Bovine Rhinotracheitis (IBR)? **Virus**

What is the more common name for papillomas? **Warts**

What is the more common name for the infectious condition of the feet known as pododermatitis? **Foot rot**

Name the viral infection that is also called red nose and can cause abortion during the last 3 months of pregnancy.
IBR (infectious bovine rhinotracheitis)

Your veterinarian recommends that you treat your cows with an anthelmintic. What is he treating her for?
Internal parasites

What is the common name given to the respiratory disease that cattle often develop after being transported by truck or rail? **Shipping fever**

What is the more common name for papillomas? A virus causes them. **Warts**

Your veterinarian took a sample of milk and tested it using the Delvotest or the Penzyme test. For what was your veterinarian checking. **Antibiotics**

What are the 2 respiratory diseases most commonly vaccinated for in dairy calves? **IBR, PI-3**

Recently, outbreaks of BVD have been reported across the US. What does BVD stand for? **Bovine virus diarrhea**

What is the name of the organism that causes Johne's disease? **Mycobacterium paratuberculosis**

What is the source of almost all pasteurella problems in young animals? **Poorly ventilated environment**

What is the recommended method of treating hairy heel warts? **Topical antibiotic treatment**

Your veterinarian cultures Mycobacterium paratuberculosis from a cow in your herd. What disease does she have?
Johne's disease

What is the general term used to describe an injury from a sharp object that has been swallowed by a cow?
Hardware disease

The organism, which causes diphtheria in calves, can also cause another problem with dairy cattle. What is that problem? **Foot rot**

What toxin does wilted cherry tree leaves & frosted Sudan grass have in common? **Cyanide**

What is the cause of warts? **Virus**

There is a rumor that Rudolph the red nosed reindeer was actually sick. If such was the case, what disease did he probably have? **Infectious bovine rhinotracheitis (IBR)**

What is the more common name for the disease brucellosis? **Bangs**

Define udder edema? **Congestion in the udder or excessive fluid accumulation in the udder**

To what would a dairy producer be referring if they used the term anthelmintic? **Dewormer**

IBR primarily affects which organ system? **Respiratory system**

Hypocalcemia is another name for what? **Milk Fever**

Define dyspnea. **Heavy, fast breathing**

Define euthanasia. **Humane killing of hopelessly sick or injured animals for reasons of mercy**

How is a suspected case of rabies confirmed? **Fluorescent antibody test of brain; by injecting brain tissue into mice and observing**

Propylene glycol is used to treat what metabolic disease? **Ketosis**

Which group of cattle should not be vaccinated with a modified live bovine virus diarrhea vaccine: calves, pre-pubertal heifers, open cows and heifers, pregnant cows and heifers? **Pregnant cows and heifers**

Which organ system does bovine spongiform encephalopathy affect? **Nervous system**

Cows are most susceptible to ketosis during which week of lactation? **Third**

Which vitamin plays a vital role in the coagulation of blood? **Vitamin K**

One of the primary organisms responsible for foot rot can also cause which disease in calves? **Diphtheria**

What type of microorganisms causes ringworm? **Fungus**

What type of microorganism causes warts? **Virus**

Which portion of the cow's digestive tract is most commonly punctured when she has hardware disease?
Reticulum

The disease milk fever is associated with a low level of which nutrient? **Calcium**

What is the normal pulse rate of the dairy cow? **60 - 70 Heart beats per minute**

What is the normal respiratory rate of the dairy cow? **30 Breaths per minute**

Brucellosis affects which organ system? **Reproductive system**

Brucellosis can be transmitted from cattle to humans. What is this disease called in humans? **Undulant fever**

Where do you deposit the material when an injection is given IV? **Into the vein**

Where do you deposit the material when an injection is given IM? **Into the muscle**

Which age group on the dairy farm generally has the highest incidence of milk fever? **Aged cows**

Which of the following diseases cannot be transmitted to humans: leptospirosis, brucellosis, vibriosis, or bangs?
Campylobacteriosis (Vibriosis)

What causes ringworm? **Fungus**

Normal heartbeat for cows is 40 to 80 beats per minute. What is a normal temperature range? 85-87, 100.5-102.5, 104.5-105.5, or 110-112 degrees Fahrenheit? **100.5 - 102.5 Degrees Fahrenheit**

Scours is a disease of which organ system? **Digestive system**

White muscle disease can be caused by shortages of what vitamin & mineral? **Vitamin E and Selenium**

To what would a dairy producer be referring if they used the words Staphylococcus aureus and Streptococcus agalactae? **Mastitis**

Occasionally a portion of a cow's stomach becomes twisted or displaced. Which compartment is subject to this occurrence? **Abomasum**

While observing your heifers you notice small circular patches of skin without hair. What is wrong with them?
Ringworm

Pneumonia is a disease of which organ system: reproductive, respiratory, digestive, or endocrine? **Respiratory system**

What causes hardware disease? **Cows eating sharp objects that puncture the stomach wall**

Warts are caused by: bacteria, fungus, virus, or parasites? **Virus**

Cattle grubs or warbles are larval or immature stage of which fly: face fly, heel fly, deer fly, or horse fly? **Heel fly**

Of the 5 major dairy breeds, which breed has the highest incidence of milk fever? **Jersey**

Where do most pieces of hardware settle? **Reticulum**

The milk ring test is a test for what disease? **Brucellosis (Bangs)**

When do most cases of milk fever occur? **Within 24 hours of calving**

The letters BVD stand for what disease of dairy cattle? **Bovine virus diarrhea**

The milk ring test is a test for which disease: leptospirosis, tuberculosis, vibriosis or brucellosis? **Brucellosis (Bangs)**

Heel flies are responsible for what type of parasite? **Grubs or Warbles**

Calcium gluconate, calcium borogluconate or some other form of absorbable calcium is used to treat what metabolic disease? **Milk Fever or Parturient paralysis**

What is the primary symptom of an infection caused by *Cryptosporidium parvum*? **Diarrhea**

What kinds of infections commonly occur on flooded pastures after the water has receded? **Clostridial (blackleg)**

What is the technical name for swelling of the udder? **Edema**

A single vaccination during the first year of life is sufficient to provide protection against what disease of cattle? **Brucellosis (bangs)**

Brucellosis is a contagious disease caused by *Brucella abortus*. It causes abortion and infertility in cattle and undulant fever in humans. What type of organism is *Brucella abortus*? **Bacteria**

What is a common name for fibropapillomatosis? **Warts**

What vitamin keeps eye and body cell linings healthy & working properly? **Vitamin A**

Your cow is sick and the veterinarian treats her with calcium gluconate administered intravenously. What is her problem? **Milk Fever; Parturient paresis; Hypocalcemia**

Your cow is sick and the veterinarian treats her with propylene glycol. What is most likely her problem? **Ketosis**

Cystitis is an inflammation of which organ? **Bladder**

Enteritis is an inflammation of which organ? **Intestines**

What type of organism causes coccidiosis? **Protozoa**

What type of organism is *Cryptosporidium parvum*? **Protozoa**

Define the term mortality rate. **Number of dead animals**

Define the term morbidity rate. **Number of sick animals**

What type of organism is *cryptosporidium*? **Protozoa**

What type of organism are coccidia? **Protozoa**

Name 2 groups of cows that are at greater risk of having milk fever. **Older cows; Fat cows; Jerseys**

Name 2 calcium compounds often found in oral calcium gels. **Calcium chloride; Calcium propionate; Calcium carbonate**

What percentage of cows that are infected with bovine leukosis virus (BLV) are carriers throughout their life and do not develop detectable abnormalities? **70 Percent (65 - 75 percent)**

What percentage of dairy cattle in the United States is infected with bovine leukosis virus (BLV)? **Approximately one-third (30 - 35 percent)**

Leptospirosis primarily affects which organ system? **Reproductive system**

Poloxalene is used to prevent what condition in grazing cattle? **Bloat**

What mycotoxin causes most concern because it is carcinogenic and has the possibility of contaminating the human food supply? **Aflatoxin**

Traumatic gastritis is more often called what? **Hardware disease**

Which disease is the most widespread cattle venereal disease in the United States? **Campylobacteriosis (vibriosis)**

Corticosteroids are anti-inflammatory drugs that are used after calving as a treatment for what condition? **Udder edema**

What is the common name used to describe the disease Listeriosis? **Circling disease**

What is the most economically important parasite of cattle? **Brown stomach worm**

How does vaccinating a cow against IBR protect her newborn calf against the disease? **Antibodies secreted into the colostrum help the calf's system fight the disease**

When talking about diseases, what is a vector? **Anything that acts as a means of transfer from one animal to another**

A low blood level of which mineral causes Grass tetany? **Magnesium (Mg)**

What can happen if intravenous calcium is administered too quickly? **Cow's heart can stop**

What is an anthelmintic? **Dewormer**

In Dairy Cattle, 90 percent of all lameness involves what part of the body? **Foot**

This digestive condition occurs 80 to 90% on the left side shortly after calving. Annual incidence is from 1.4% to 5.8? What is this condition? **Displaced Abomasum**

The veterinarian diagnoses obturator paralysis. What caused it? **Dystocia (Difficult calving)**

What is the major means of transmission for the disease Campylobacteriosis (Vibriosis)? **Natural service**

Hairy warts is a disease confined to which part of the body? **Foot**

What is the most common cause of lameness in dairy cattle? **Laminitis (founder)**

You enter the calving area and notice that a cow who is due to calve is lying down with her neck twisted back on her left shoulder. What is probably the cause of her position? **Milk fever**

Which body system is most affected by the disease Leptospirosis? **Reproductive system**

Which mycotoxin causes most concern because it is carcinogenic and has the possibility of contaminating the human food supply? **Aflatoxin**

What disorder is characterized by low blood sugar, high concentrations of serum-free fatty acids and a depressed appetite? **Ketosis**

What is the more technical term for heavy bleeding? **Hemorrhaging**

What is generally the first symptom noted for a cow that is infected with blackleg? **Lameness**

What disease does the acronym CJD stand for? **Creutz-Feld-Jakob disease**

What is the genus of the infectious agent that causes black leg? **Clostridium (C. chauvoei)**

Which internal parasite is ingested in the larval stage? **Round worm**

Which 2 minerals are generally lost in the greatest quantity when a cow becomes dehydrated? **Potassium; Sodium**

Which internal parasite is ingested in an oocyte? **Coccidiosis**

Actinomyces necrophorus is an anaerobic bacteria, which infects the foot. What does it cause? **Foot rot**

What term describes the drop in blood calcium without causing milk fever? **Subclinical hypocalcemia**

The Kirby-Bauer method and the Minimum Inhibitory Concentration (MIC) are both procedures for measuring what? **Antibiotic sensitivity**

A cow is treated with antibiotics, how long must she be kept in the herd following the treatment? **According to label instructions**

What is the more common name for interdigital hyperplasia? **Corns**

What disease is characterized as "a fatal disease of the nervous system in which the brain tissue appears sponge-like"? **Bovine spongiform encephalopathy (BSE)**

The AGID blood test is a rapid test used to diagnose which disease in dairy cattle? **Johne's disease (paratuberculosis)**

What is the common name for the infections caused by the bacteria Actinomyces bovis and Actinobacillus lignieresii? **Lumpy jaw**

You enter the calving area and notice that a cow near calving is lying down with her head and neck bent in the shape of an "S". What is probably her problem? **Milk Fever; Parturient paresis; Calcium deficiency**

The NADC is located in Ames, Iowa. What organization does the acronym NADC stand for? **National Animal Disease Center**

A confirmed case of Mycobacterium bovis or TB was reported in Wisconsin. What does TB stand for? **Tuberculosis**

How is passive immunity established in calves? **Absorption of antibodies from colostrum**

Coccidia infection can occur when calves are 4 to 8 weeks old. What is the primary symptom of Coccidia? **Scours**

Name the 2 respiratory diseases most commonly vaccinated for in dairy calves? **IBR, PI-3**

A new vaccine for brucellosis was approved in 1996. What is this new vaccine called? **Strain RB51**

What is the result of blood calcium levels dropping below 5 mg/100ml? **Muscles and nerves are not permitted to function**

Trichomonas causes infertility, abortions and pyometra in dairy cows. How is Trichomonas spread? **Semen**

What type of microorganism causes ringworm? **Fungus**

While some extra label drugs can be used in food-producing animals, others cannot. Which of the following is an illegal drug? clenbuterol, penicillin, tetracycline, all of the above. **Clenbuterol**

What does the term pathogenic mean? **Disease causing**

Define a laceration? **Cut**

Neospora abortions cost the California dairy industry an estimated \$35 million annually. What type of organism causes Neospora? **Protozoa**

What is the general name for the class of chemicals used to kill internal parasites? **Anthelmintics**

Listeriosis affects which of the physiological systems in the adult dairy cow? **Nervous system**

Which internal parasite uses mites as an intermediary host? **Tape worm**

For what purpose would you use an anthelmintic? **Control internal parasites**

Listeriosis is the scientific name for what disease? **Circling disease**

What is usually the first sign of ketosis? **Cow goes off feed**

What does the term bradycardia mean? **Slow heart beat**

Which internal parasite uses snails as an intermediary host? **Fluke**

What are ketones? **Compounds produced in the liver from mobilized fat**

What is the scientific name for a "twisted stomach" in a dairy cow? **Displaced abomasum**

The veterinarian says your cow has obturator paralysis. What happened? **Dystocia (Difficult calving)**

What is the technical term for inflammation of the intestines? **Enteritis**

Name 3 organs affected by bovine leukemia virus (BLV). **Heart; Digestive organs; Uterus; Spinal cord**

Over 80% of all reported cases of Lyme disease in humans have been reported in 7 states. Name 3 of those states: **Connecticut; Massachusetts; Minnesota; New Jersey; New York; Rhode Island; Wisconsin**

Name 3 health problems that can develop when a cow becomes too fat (fat-cow syndrome)? **Fatty liver; Ketosis; Displaced abomasum; Dystocia; Retained placenta; Poor milk yield; Reduced reproductive performance**

Name 3 types of organisms that cause infections to occur. **Bacteria; Mycoplasma; Spirochetes; Fungi; Protozoa; Viruses**

Name 4 practices which increase the frequency of bovine leukemia virus (BLV) infection. **Housing heifers in large groups, use of common instruments for gouge dehorning, ear tagging & branding**

Name 4 factors that can cause pneumonia. **Bacteria; Viruses; Parasites; Molds; Yeast; Foreign objects**

Fescue toxicity (summer syndrome) causes several problems in grazing cattle. Name 3 of the problems: **Necrosis & sloughing off of hooves, tips of tails and ears; Hard fat masses in abdomen; Low daily gains; Low milk production; Reproductive failure; Increased susceptibility to heat stress**

Name 3 diseases that are caused by Mycoplasma organisms. **Arthritis; Eye infections; Genital infections; Mastitis; Pneumonia;**

A cow can be given antibiotics in numerous ways. Name 3 of the ways: **Intramuscular injection; Intravenous injection; Intraperitoneal; injection; Intramammary infusion; Intrauterine infusion; In the ration**

Name 3 diseases for which calfhood vaccination should be considered. **IBR; (or IPV); BVD; PI-3; Brucellosis (Bangs); Blackleg; Leptospirosis; Clostridia; Malignant Edema; Scours**

Name 3 diseases of dairy cattle that are caused by a virus. **BVD; IBR; PI3; BRSV; Warts; BLV; Bluetongue; IPV; Cowpox**

Name 3 diseases that are caused by a clostridial organism. **Blackleg; Malignant edema; Overeating disease; Tetanus**

Babe the blue ox had a rare disease that caused the blue color. Name 3 other diseases with a color in their name. **Red water; Red nose; Black leg; Blue tongue; White muscle disease; Pink eye; White heifer disease**

Give 3 reasons for a cow going lame? **Abscess; Foot rot; Infection; Injury; Soft sole syndrome; Trimming too close**

Name 3 types of organisms that can cause pneumonia. **Bacteria; Viruses; Parasites; Molds; Yeast**

Name 3 predisposing causes of pneumonia in calves. **Poor ventilation; high humidity; dirty pens; drastic temperature changes; Poor nutrition; Over crowding; wide range of a ages in 1 pen**

Name 3 diseases that can be transmitted by bloodsucking insects or contaminated needles. **Texas Fever; Anaplasmosis; Lyme disease; Anthrax**

Name 3 diseases that can affect humans and animals. **Botulism; Brucellosis, Gas gangrene; Leptospirosis; Malignant edema; Leptospirosis; Pulpy kidney; Tetanus**

Name 3 internal parasites that affect dairy cattle. **Round worms; Stomach worms; Lungworms; Coccidia; Liver flukes**

Name 3 health conditions which are most prevalent at calving and the first month after freshening. **Dystocia; Milk fever; Ketosis; Udder edema; Mastitis; Retained placenta; Metritis; Displaced abomasum; Fatty liver syndrome**

Name 3 factors that may predispose a cow to a displaced abomasum. **Stress of calving or high production; Lead feeding; Acidotic rations; Hypocalcemia; Selenium deficiency; Lack of exercise; Advanced pregnancy**

Name 3 respiratory diseases that are caused by a virus. **Bovine virus diarrhea (BVD); Warts; Infectious bovine rhinotracheitis (IBR); PI-3; Bovine respiratory syncytial virus**

Name 3 diseases of dairy cattle that can affect pregnant women. **Listeriosis; Camphylobacter; Brucellosis; Q fever**

Give 3 symptoms of mycotoxins in cows. **Feed Refusal; Infertility; Weight Loss; Silent estrus; No Milk; Abortions; Unthriftiness; Gastrointestinal Upsets**

Name 3 practices which increase the frequency of bovine leukemia virus (BLV) infection. **Housing heifers in large groups; Use of common instruments for gouge dehorning; Ear tagging & Branding**

Name 3 diseases that can cause abortions. **Brucellosis; Campylobacter (vibriosis); Chlamydia; IBR; Leptospirosis; Listeriosis; Neospora; Trichomoniasis**

Name 3 diseases that affect the respiratory system. **Tuberculosis; Infectious bovine rhinotracheitis (IBR); Bovine virus diarrhea (BVD); Hemophilus somnus; Pasteurella; Bovine respiratory syncytial virus (BRSV); PI-3**

Name 3 infectious diseases of mature cows? **Bovine virus diarrhea (BVD); Heel warts; Johne's; Leptospirosis; Mastitis; Pneumonia; Salmonella**

Name 3 metabolic diseases. **Milk fever; Ketosis; Displaced abomasum; Retained placenta; Laminitis**

Name 3 diseases that have a color associated with their name. **Blackleg; Blue tongue; Pinkeye; Rednose; Red water, White heifer disease**

A zoonosis is a disease that is communicable from animals to man under natural conditions. Give 3 examples of a zoonosis that involve cattle. **Anthrax; Brucellosis; Campylobacteriosis (vibriosis); Cowpox; Foot and Mouth; Leptospirosis; Listeriosis; Pasteurellosis; Ringworm, Salmonella; Staphylococcosis; Tuberculosis**

Name 3 diseases that a dairyman can vaccinate against to reduce or eliminate the disease from his herd. **Brucellosis; Leptospirosis; IBR; BVD; Blackleg; Enterotoxemia; Vibriosis; Malignant edema; Pasteurella pneumonia; Parainfluenza (PI3); E. coli scours**

Name 3 problems generally associated with hypocalcemia. **Calving difficulty; Retained placenta; Uterine prolapse; Metritis; Mastitis; Decreased appetite; Displaced abomasum; Ketosis; Delayed return to estrus**

Name 3 infectious diseases caused by clostridial bacteria. **Black leg; Malignant edema; Tetanus; Hepatitis; Kidney disease; Enterotoxemia**

Name 3 diseases that are caused by a virus. **Bovine virus diarrhea (BVD); Warts; Infectious bovine rhinotracheitis (IBR); PI-3; Bovine respiratory syncytial virus; (BRSV) Cow pox; Pseudo-cowpox; Herpes mammillitis; Vesicular stomatitis; Bluetongue; Leucopsis (BLV); Malignant catarrhal Fever**

Give 3 of 5 things that would classify a herd as not being closed? **Cows bought or boarded; Cows return after leaving farm; Cattle pasture shares fence with cattle from another farm; Bulls are bought; borrowed; or loaned; Cows transported by someone else or in someone else's vehicle**

Name 3 classifications of disease, categorized on the basis of their primary cause. **Environmental; Genetic; Infectious; Metabolic**

Name 3 symptoms of milk fever? **Goes down; Rapid heart rate; Dilated eyes; Below normal body temperature**

Name 3 factors that can cause pneumonia. **Bacteria; Viruses; Parasites; Molds and Yeast; Foreign objects**

Housing and Facilities

- T/F So long as the vacuum pump is operating and milking the cows, there is no need to check it. **False**
- T/F A properly installed milking system includes a vacuum regulator. **True**
- T/F Trigon milking parlors got their name because 3 people are required to milk. **False**
- T/F Even though the vacuum pump is operating and milking the cows, it should be periodically checked and serviced. **True**
- T/F An aerobic lagoon requires more land area than does an anaerobic lagoon to handle the wastes from the same number of cows. **True**
- T/F In a properly installed milking system the milk inlets should be located on the lower half of the milk line. **False**
- T/F In a properly installed milking system, the milk inlets should be located on the upper half of the milk line. **True**
- T/F Milk hoses should be as long as possible without causing the operator to stumble. **False**
- T/F Replacing a faulty milking machine can help raise milk production. **True**
- T/F The size of the vacuum line helps to determine the number of milking machines a milking system can handle. **True**
- T/F Warm housing refers to a type of barn in which the temperature is closely controlled and held constant. **True**
- T/F A vacuum reserve tank is seldom needed if a milking system is properly installed. **False**
- T/F A cold housing type of barn means that the temperature inside is kept cool both winter and summer. **False**
- T/F Stray electrical voltage is everywhere and there is nothing we can do about it. **False**
- T/F Pipe, which is used to make freestalls, should be no larger than 2 inches in diameter. **False**
- T/F Ten cows per milking machine per hour is a good average. **True**
- T/F One of the most important functions of the teat cup liner is to massage the teat end. **True**
- T/F Pulsators with a wide pulsation ratio such as 70/30 generally milk faster than those with a narrower pulsation ratio such as 50/50. **True**
- T/F Fresh clean air is very important in the milk house. **True**
- T/F Pipe, which is used to make freestalls, should be at least 2 inches in diameter. **True**
- T/F Pulsators with a wide pulsation ratio such as 70/30 generally milk slower than those with a narrower pulsation ratio such as 50/50. **False**
- In which country was the first robotic milking unit used? **Netherlands**
- What are the recommended inches of vacuum on a milk vacuum line? **12 - 15 Inches**
- What are the recommended dimensions of free stalls for cows weighing 1400 pounds? **4 Feet by 7 feet (4' X 7')**

Name a piece of equipment in which CFCs is used. **Bulk tank compressor; Heat exchanger; Precooler**

Which machine on the dairy farm operates on living tissue? **Milking machine**

Which of the following types of vacuum regulators or controllers is generally the most sensitive: servo diaphragm type, spring-loaded sleeve, weighted sleeve, or weighted arm? **Servo diaphragm type**

Which state is the first to conduct research on robotic milking machines in the United States? **Maryland**

In milking systems, what do the terms American Standard and New Zealand Standard refer to? **Vacuum in the line**

The recommended location for the milk line in a milking parlor is: high line, low line, main line, or by line? **Low line**

Define stray voltage or current? **Electrical current greater than one-half volt, resulting from improper grounding that shocks cows**

What is an equipotential plane & where would you expect to find one? **Area where wire mesh or other conductive network is embedded in concrete; bonded to all metal work & equipment; & connected to the electrical grounding system.**

How does a vacuum regulator function to maintain a constant milking system vacuum? **By admitting outside air**

The chemicals pentachlorophenol (penta), chromated copper arsenate (CCA) and creosote are used for what purpose? **Wood preservatives**

Two methods are generally used to measure vacuum pump capacity, American Standard and New Zealand Standard. To convert New Zealand Standard to American Standard you multiply it by: 1/2, 1, 2, 4? **One-half (1/2)**

Two methods are generally used to measure vacuum pump capacity, American Standard and New Zealand Standard. To convert American Standard to New Zealand Standard you multiply it by: one-half 1/2, 1, 2, or 4? **2**

What is the purpose of a vacuum regulator? **Maintain a constant vacuum level within the milking system**

How can problems with stray voltage usually be corrected when found in a barn? **Proper grounding of all electrical lines and equipment**

Cows are more sensitive to electricity than humans. How much electrical current is generally considered significant enough to affect the behavior and production of cows? **0.5 Volts**

What is the recommended airflow capacity when cooling cows using fans in the holding pen? **1,000 Cubic feet per minute (CFM)/cow**

How long should you build a free stall for a 1400-pound Holstein cow? **7 Feet**

How wide should you build a free stall for a 1400-pound Holstein cow? **4 Feet or 48 Inches**

A double-6 herringbone and a double-12 parallel are both examples of what? **Milking parlors**

If someone used the following terms: herringbone, rotary, side-opening, polygon and trigon, to what would they be referring? **Milking parlors**

Define cold housing. **Housing in which the inside temperature varies with the outside temperature**

Which of the following is not a type of milking parlor: herringbone, free stall, polygon, or trigon? **Free stall**

Name the only part of the milking system that touches the cow. Be specific. **Teat cup liner (Inflation)**

To what do the terms polygon, parallel, and herringbone refer? **Milking parlors**

Name 1 piece of equipment which is used to precool milk prior to its entering the bulk tank. **Cube cooler; Plate cooler; Refrigerated receiver; Tube cooler**

Define warm housing? **Housing in which the inside temperature is closely controlled and maintained relatively constant**

Where would you most likely find a heat exchanger on a dairy farm? **Milk room or milking parlor**

What is the piece of equipment called which is used in a milking system to keep vacuum at a constant level? **Vacuum regulator (controller)**

To what would a dairy producer be referring if they used the term herringbone? **Milking parlor**

When comparing vacuum pumps, the term CFM is frequently used. What does this acronym stand for? **Cubic feet per minute**

For what purpose are tube coolers and plate coolers used on a dairy farm? **Cool milk prior to entering the bulk tank**

If someone used the following terms: servo diaphragm type, spring-loaded sleeve, weighted sleeve and weighted arm, what would they be talking about? **Vacuum regulators**

In the dairy industry, what is a herringbone? **Type of milking parlor**

What is the most common milking parlor in use today? **Herringbone**

How much airflow capacity for the vacuum pump is currently recommended per milking unit in a pipeline-milking parlor? **10 CFM American standard or 20 CFM New Zealand standard**

How much bedded area should be provided for a calf up to six months of age? **25 - 30 Square feet**

What does the acronym CFC stand for? **Chloroflouorocarbons**

What color should hutches be painted and why? **White or a very light color; to reflect heat in the summer**

What is the function of a plate cooler or a tube cooler? **Cool milk prior to entering the bulk tank**

What does the acronym CFM mean when referring to airflow? **Cubic feet per minute**

In what year was the pulsator invented? **1895**

Name 3 configurations (types) of milking parlors. **Herringbone; Rotary or carrousel; Side-opening; Walk through; Polygon; Trigon; Stanchion; Parallel**

Name 3 types or brands of milking equipment. **Bodmin-Nupulse; Boumatic; DeLaval; Germania; Mueller; Westfalia Surge; Universal**

Name 3 advantages of using free stalls over loose housing. **Less bedding required; Less labor for cleaning; Cows stay cleaner; Fewer teat and udder injuries; Eliminates mud; Works well with mechanized feeding; Less space required per cow; Waste handling more easily mechanized**

Give 3 reasons why ventilation of a barn is important. **Remove moisture from the building; Fresh air for animals; Remove excess heat; Remove odors and gases from animal waste**

Give 3 symptoms that might indicate poor barn ventilation. **Poor animal health; Odors; Stained roof supports (girders, purlins); Wood swelling inside barn; Condensation**

Judging and Showing

T/F The hock is another name for the hipbone. **False**

T/F In dairy cattle shows, the GET OF SIRE is 4 animals, of either sex, any age and the progeny of 1 bull. **True**

T/F In dairy cattle shows, the PRODUCE OF DAM is 4 animals, either sex, any age, and progeny of 1 cow. **False**

T/F The hook is another name for the hipbone. **True**

T/F Cattle without horns are discriminated against in the show ring. **False**

T/F There is no Unified Scorecard for dairy bulls. **False**

T/F When judging dairy cattle, the reasons should be descriptive. **False**

T/F When leading your animal in the show ring, you should lead her counterclockwise. **False**

T/F Red and White Holsteins were first used in a Hoard's Dairyman judging contest in 1984. **True**

T/F When judging dairy cattle the reasons should be comparative. **True**

When clipping a cow, do you generally clip in the direction the hair lays or in the opposite direction? **Opposite direction**

Which side of the cow's head should you be leading from during a show? **Left side**

When grooming a cow do you generally groom in the direction the hair lays or in the opposite direction? **In the direction the hair lays**

When posing a cow in the show ring; how should the rear leg nearer the judge be placed in relation to the other rear leg? **It should be slightly in front of the other leg**

When posing a heifer in the show ring; how should the rear leg nearer the judge be placed in relation to the other rear leg? **It should be slightly behind the other leg**

When placing a halter on a dairy animal, the lead strap should be on which side of the animal's head? **Left side**

What direction do you lead your animal in the show ring? **Clockwise**

The Hoard's Dairyman judging contest was first begun in which year? **1931**

In what year were the pictures for the Hoard's Dairyman judging contest first printed in color? **1979**

In what year were the pictures for the Hoard's Dairyman judging contest first printed on the front cover? **1964**

In which 4 months is it best for a show animal to be born? **March; June; September; December**

What is the name of the ligament that supports the weight of the udder and divides it in half when viewed from the rear? **Median suspensory ligament**

Which breed has sharpness & strength, characteristics indicating their productive efficiency? **Jersey**

If the knee of a cow corresponds to the elbow on a human, what part of the cow corresponds to the wrist? **Pastern**

The backline, front end & stature fall under what heading on the new dairy score card? **Frame**

The cows that are pictured for the Hoard's Dairyman judging contest represent how many dairy farms? **5**

Breed characteristics are included in which category of the PDCA Dairy Cow Unified Score Card? **Frame**

What does a blanket do to the hair when you fit a cow or heifer for a dairy show? **Hair lays down and is shed for a shorter coat**

What is another name for the hipbone? **Hook**

What is the name of the major suspensory tissue for the udder? **Median suspensory ligament**

Stature is included in what category of the PDCA Dairy Cow Unified Score Card? **General appearance**

Good spring of rib is a reason for what part of the PDCA scorecard? **Body capacity**

How many farms do the 4 cows in a Hoard's Dairyman judging class represent? **1**

How many points are allocated to the udder on the new PDCA scorecard? **40 Points**

How many points are allotted to body capacity on the new PDCA Dairy Cow Unified Score Card? **10 Points**

How many points are allotted to dairy character on the new PDCA Dairy Cow Unified Score Card? **20 Points**

How many points on the PDCA scorecard are allotted to body capacity? **10 Points**

How many points on the PDCA scorecard are allotted to dairy character? **20 Points**

What are the breakdowns on the Dairy Cow Unified Score Card? Give names and percentages. **Mammary system; 40%; Dairy character; 20%; Feet & legs 15%; Frame; 15%; Body capacity 10%**

Which breed was developed through long-term selection for hardiness, superior udders, and efficient milk production? **Ayrshire**

When showing a heifer, how should her feet be placed? **Front feet square and hind leg closest to the judge back**

Red and white colors are acceptable in which of the 5 major breeds of dairy cattle? **Ayrshire and Holstein**

Fawn is an acceptable color in which of the 5 major breeds of dairy cattle? **Guernsey; Jersey**

A long, lean neck is included in which category of the PDCA scorecard? **Dairy Character**

A strong median suspensory ligament is included in which category of the PDCA scorecard? **Mammary system**

Which joint in the cow corresponds to the ankle in humans? **Hock**

Which joint in the cow corresponds to the knee joint in humans? **Stifle**

Which organization is responsible for developing and maintaining the Dairy Cow Unified Score Card? **Purebred Dairy Cattle Association (PDCA)**

How many points on the PDCA scorecard are allotted to the mammary system? **40 Points**

What is the term used to describe too much curvature or set in the rear legs? **Sickle hocked or Sickled**

Give a reason why it is desirable for the thurls to be wide apart. **Easier calving; Greater room for udder between the legs**

In a judging contest in which there are four animals, how many possible different ways can they be placed? **24**

How much consideration should a judge give to the presence of horns when judging a class of Jersey cows? **None**

What structure separates the udder into right and left halves? **Median suspensory ligament**

Which breed has a black muzzle, tongue, switch and hooves? **Brown Swiss**

What is the highest possible score that can be achieved when placing a class in a judging contest? **50 Points**

How many points are allocated to udder on the PDCA Dairy Cow Unified Score Card? **40 Points**

Why is a blanket used in fitting a cow for a dairy show? **Cleanliness; Shed hair coat; Flatten hair coat**

Which structure provides the primary support to the dairy cow's udder? **Median suspensory ligament**

What is the term used to describe a cow whose rear hocks are too close? **Cow hocked**

Which dairy show is held in Madison, Wisconsin during the first week of October? **World Dairy Expo**

In judging or classification what is used as the reference point to determine the height of the udder floor? **Hock**

In judging fitting and showmanship classes, how many points are allotted to the appearance of the exhibitor on the PDCA scorecard? **10 Points**

What is the term used to describe a cow whose rear hocks are too close? **Cow hocked**

What is the name of the portion of a cow's back closest to the withers? **Chine**

What was the breed of the first Supreme Champion at World Dairy Expo? **Holstein**

Which state won the first National 4-H Dairy Judging contest in 1919? **Minnesota**

What year did the first National 4-H Dairy Judging contest begin? **1919**

In judging fitting and showmanship classes, how many points on the PDCA scorecard are allotted to the exhibition of the animal in the ring? **60 Points**

What breed was the first Supreme Champion at World Dairy Expo? **Holstein**

How is the udder attached to the cow? **Udder is attached to the cow by elastic and non-elastic suspensory ligaments**

In judging fitting and showmanship classes, how many points are allotted to the appearance of the animal on the PDCA scorecard? **30 Points**

If the thurl of a cow corresponds to the hip on a human, what part of the cow corresponds to the ankle? **Hock**

How many dairy farms are represented each year in the Hoard's Dairyman judging contest? **5**

If the thurl of a cow corresponds to the hip on a human, what part of the cow corresponds to the ankle? **Hock**

What is used as the reference point to determine the height of the udder floor? **Hock**

What is used as the reference point to determine the height of the rear udder attachment? **Vulva**

Name the 5 major divisions of the Dairy Cow Unified Score Card: General **appearance; Dairy character; Body capacity; Udder**

In selecting a calf for a 4-H project, give 3 important things you should consider. **Well proven sire (high PTA); High producing dam (high PTA); Healthy; Well grown; Good type**

Name 3 of the show classes for individual animals in which a heifer can be shown according to the Purebred Dairy Cattle Association (PDCA). **Junior calf; Intermediate calf; Senior calf; Summer calf; Junior yearling; Intermediate yearling; Senior yearling; Summer yearling**

PDCA endorses a Show Ring Code of Ethics. Name 3 violations. **Misrepresenting the age and/or milking status of the animal; Treating an animal internally or externally with a substance to improve conformation; Surgery or insertion of foreign matter to improve conformation; Criticizing or interfering with the judge or show management**

Name 3 of individual traits which make-up the udder category on the PDCA scorecard. **Udder depth; Udder cleft; Front teat placement; Rear udder width; Rear udder height; Fore udder attachment; Teat length**

Name 3 reasons for which an animal can be disqualified from being shown in the show ring. **Blind quarter; Freemartin heifer; Permanent lameness; tampering to conceal faults; Total blindness**

Management and DHI

- T/F Stable flies are able to bite. **True**
- T/F Colostrum can be frozen and used at a later time? **True**
- T/F If a scale is not available; body weight can be estimated by measuring heart girth. **True**
- T/F Cows know and recognize the other cows in their own herd. **True**
- T/F Cows who have water available at all times produce more milk than cows who are watered only twice a day. **True**
- T/F The rest period between lactation periods is the dry period. **True**
- T/F Most cows need a dry period of between 50 and 70 days. **True**
- T/F The biggest reason leading to free stall usage refusal is bedding type. **False (size)**
- T/F If the feed supply is short; heavy culling should often be practiced. **True**
- T/F Moving cows from 1 group to another will cause a drop in production. **True**
- T/F The percent protein in a cow's milk changes less from month to month than does the butterfat percent. **True**
- T/F The percent protein in a cow's milk changes more from month to month than does the butterfat percent. **False**
- T/F Unlike chickens, who have a pecking order, there is no social order or social ladder in a dairy cow herd. **False**
- T/F Face flies are unable to bite. **True**
- T/F The secreting units of the mammary gland are the alveoli. **True**
- T/F Face flies are able to bite. **False**
- T/F The same branding irons can be used for freeze branding and hot branding. **False**
- T/F A cow's butterfat test can change from milking to milking. **True**
- T/F Cows can produce 4 to 6 gallons of moisture per day by respiration alone. **True**
- T/F A cow's butterfat test does not change from milking to milking. **False**
- T/F If a scale is not available; body weight can be estimated by measuring chest width. **False**
- T/F Unlike the fat test, a milk protein test doesn't change from month to month. **False**
- T/F Records are only important because they tell you what has already happened. **False**
- T/F The greatest cost in milk production is the labor cost. **False**
- T/F Feed costs generally account for about 30% of the cost of producing milk. **False**
- T/F When removing a milking machine it is not important how the machine is removed. **False**
- T/F When cows are put on 3 time a day milking, their production tends to go down. **False**

T/F The drug withholding periods for sale to slaughter and to market are identical. **False**

T/F A cow's butterfat test changes from milking to milking. **True**

T/F First lactation cows have a greater persistency during lactation than do older cows. **True**

T/F House flies are unable to bite. **True**

T/F Colostrum has 10 to 100 times more Vitamin A than normal milk. **True**

T/F The oldest cow in the herd is always the most dominant. **False**

T/F Colostrum is higher in lactose than normal milk. **False**

T/F The lactation period is the length of time a dairy cow produces milk between calving and being dried off.
True

T/F Stable flies are unable to bite. **False**

T/F Allowing drug residues to enter or be in milk or meat sold for human consumption is a felony punishable by a fine and possibly imprisonment. **True**

T/F Due to the structure of the cow's mammary gland, milk may be produced in 1 quarter and pass out of another quarter at milking. **False**

When milking a cow, which milk is lowest in butterfat? **First milk**

How is feed intake affected when the moisture level in the total ration increases from 45% to 60%? **Decreases**

When milking a cow, which milk is highest in butterfat? **Last milk**

When using a body condition scoring system of 1 to 5, what does a score of 5 mean? **Extremely fat**

Lactation records in progress can be used in the calculation of USDA-DHIA Sire summaries if they have at least 1 test and are a minimum of how many days in length? **40 Days**

What is the ideal body condition score, a cow should be dried off? **2.5**

In what year was the first cow testing organization in the world formed? **1895**

In what year was the first cow testing organization in the United States formed? **1906**

When a black animal is properly freeze branded, how should the brand appear? **As white hair**

On an average, how many weeks after freshening does a cow's dry matter intake peak? **12 - 14 Weeks**

Name 2 reasons why a clean environment is necessary for calving. **Avoid uterine infections in cow; Prevent illness in calves; especially navel infections**

What is the average mature weight of a Jersey cow? **1000 Pounds**

What does the acronym DHIR stand for? **Dairy Herd Improvement Registry**

What body condition score should a cow have at dry off? **3.0- 3.5**

Using a scoring system of 1 to 5, what body condition score should a cow have at calving? **3.5 TO 4.0**

What percent of lactation records are eliminated from use in sire evaluations due to lack of sire identification? **85 Percent**

What is the accepted standard length for a lactation record in dairy cattle? **305 Days**

What is the term for a dairy cow's reaction to other animals, to stress, and to people? **Behavior**

What does 305-2X-ME stand for on a cow's record? Give answers to each of the 3 parts. **305 Days; 2 Time a day milking; mature equivalent**

What are heart girth measurements used to measure? **Body weight**

What is the major difference observed when comparing the lactation curves of high and average producing dairy herds? **Peak milk production (summit milk production)**

What is the primary reason for lactation records from approved DHI testing plans being disqualified for use in the calculation of USDA-DHIA Sire Summaries? **Lack of sire identification**

If 2 cows of equal genetic ability calved one during the worst season and the other during the best season, how much difference in production would be expected due to the season? **20 Percent**

If there are large numbers of flies around the dairy farm, what should be the first thing that is examined? **Manure handling procedures**

In a cow, where would you find an alveolus? **Udder; Lung**

Testing for butterfat is the most common test done by DHI labs but there are several other tests that can be run on the same milk sample. Name 1 test. **Protein; Solids-not-fat (SNF); Somatic Cell Count (SCC); Milk urea nitrogen (MUN)**

What does the computer term "MHZ" stand for? **Megahertz (a unit used to describe the processing speed)**

The first production testing in the United States was organized in which state? **Michigan**

The following information is listed concerning a cow: 305 2X 18,685 3.8 710. What does each of these factors mean or represent? **305-day lactation; Milked twice per day; Produced 18,683 pounds of milk; Milk contained 3.8% milk fat; Produced 710 pounds of milk fat during lactation**

Which season is hardest on a cow's production and why? **Summer; Heat**

In computer terms what does online mean? **Computer is connected to the internet**

What does the acronym FARAD stand for? **Food Animal Residue Avoidance Database**

Why is residual milk in wash water a problem for the environment? **Will decompose in rivers; using up the oxygen; Transmit diseases to animals downstream**

What does the computer term Dairy-L stand for? **Free computer discussion group for dairy farmers; professional educators; and extension workers**

You are discussing lactation records and someone states that all of the records are reported on a fat corrected milk basis. What does the term fat corrected milk mean? **Lactation records have been adjusted to the same percentage of butterfat**

What could be a problem for a herd if it was composed of cloned cows? **Increased health risk because of a lack of genetic diversity**

What is the most frequently encountered problem that effects milk production? **Influence of high temperatures and heat stress**

Why is sulfate considered a nuisance in water? **Has a laxative effect**

Mature equivalent factors are used to adjust lactation records to a mature basis for comparison. What are the 2 items for which a record is adjusted? **Age at freshening; Month of calving**

What is an ATO and what is it used for? **Automatic Takeoff Units; Used for removing the milking machine**

In which season of the year are lice most prevalent? **Winter**

The recommended age at first calving is 24 months. According to Hoard's Dairyman, how much does it cost for each day past 24 months? **\$2 Per day (\$1.75 - \$2.25)**

Where was the first testing association organized in the United States? **Michigan**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym IMO stand for? **In my opinion**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym IMHO stand for? **In my humble opinion**

Oxytocin causes what to happen in the dairy cow? **Milk letdown; Uterine contractions**

Why are DHI records useful? **Help in making proper management decisions**

What are the 2 most important management practices for the reduction of foot problems? **Hoof trimming; Foot baths**

A 1400 pound cow will produce how many pounds of manure a day.? **115 pounds**

What is the pH of fermented (sour) colostrum? **4.5 or lower**

All DHI lactation records in progress become unofficial when the test interval goes beyond how many days? **Greater than 75 days**

What is the best temperature at which to store colostrum for fermentation? **60 to 80 Degrees Fahrenheit**

You should allow how many feet of clear space for cows to drink at waterers: 1, 3, 7 or 25? **7 feet**

Electronic grain feeders can typically dispense how many pounds of grain each day? **450 to 500 Pounds**

What is the World Wide Web? **Principal internet system**

The letters ASCS stand for what government organization? **Agricultural Stabilization and Conservation Service**

When freeze branding a white animal, how does a properly applied brand appear? **As a bald brand**

When a white animal is properly freeze branded, how should the brand appear? **As a bald brand**

How do you determine net farm income? **Income minus expenses minus depreciation plus changes in inventory**

How frequently should a cow freshen on the average? **Every 12 to 13 months**

How many adult flies and flies in the egg, larva and pupa stages 1 fly can produce from May 1 to June 30? **25,000 - 26,000**

How many dairy records processing centers (DRPCs) are there in the United States? **5**

How many flies can be produced in 1 pound of manure? **500**

What percent of DHI records are ineligible for use in USDA Sire Summaries? **Over 50 %**

What is an intensive rotational grazing system? **Pasture management system to utilize pasture forage efficiently by rotating from pasture to pasture over a specified period of time determined by forage growth**

What is the best thing to do with a cow that is no longer capable of making a profit for the dairyman. **Cull her**

When the environmental temperature falls below 30 degrees Fahrenheit, the normal diet of young calves should be supplemented. With which nutrient should it be supplemented? **Energy**

What is the minimum recommended times to trim a cow's hooves per year? **Once a year**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym FYA stand for? **For your action**

To produce 1 pound of milk, a cow must pump how many pounds of blood through the udder: 10, 40, 100, 400, or 800? **400 Pounds**

What does the term days open mean on a DHIA report? **Number of days from calving till conception**

Name 1 way in which 2 or more persons can share in ownership of a farm. **Partnership; Corporation**

A rolling herd average (RHA) is based on how many months? **12 Months**

What does the acronym RHA stand for when talking about Holstein pedigrees? **Registered Holstein Ancestry**

What does the term freshen mean in cattle production? **Act of giving birth or calving**

A cow should be given a dry period of how many days before calving? **40 to 60 Days**

How many cows per watering facility should be the maximum for cows in confinement? **40 (35 - 45 is acceptable)**

How soon after freshening will a dairy cow most likely reach her peak daily production? **40 - 60 days**

Name 1 of the 2 most important management practices for the reduction of foot problems? **Hoof trimming; Foot baths**

According to the National Animal Health Monitoring System, what is the primary reason cows are culled from the herd? **Reproduction**

Mature equivalent factors are used to compare records initiated at different ages and during different seasons. What is the largest percent difference between seasons for the same age? **20 Percent**

A cow producing 100 pounds of milk can be expected to drink how much water? **300 - 400 Pounds (35 - 45 gallons)**

The dairy records processing center at Raleigh, North Carolina produces a list called the ERCR list. What do the letters ERCR stand for? **Estimated Relative Conception Rate**

One point of body condition score equals to about how many pounds of weight? **125 pounds**

In which country was the first organized cow testing association formed? **Denmark**

In which state in the United States was production testing first organized? **Michigan**

What is the name used to describe an farm owned by a single individual? **Sole proprietorship**

Breed affects the level of antibodies in colostrum. Which breed typically has the lowest percentage of antibodies in colostrum? **Holstein**

Breed affects the level of antibodies in colostrum. Which breed typically has the highest percentage of antibodies in colostrum? **Jersey**

What is the most common bacteria found in fermented colostrum? **Lactobacillus**

How can a cow's weight be estimated if a scale is not available? **Weight tape**

What is the most common fly found around the dairy farm? **Housefly**

On a cow's production record what do the letters ME stand for? **Mature equivalent**

What is the single largest cash expense on most dairy farms **Purchased feed**

Farms owned and operated by 1 person are called sole proprietorships. Name 1 way more than 1 person can share own an operation. **Partnership; Corporation**

How long of a dry period should be given to a cow between lactations? **40 - 60 Days**

Which of the following is called the milk "let-down" hormone: adrenaline, progesterone, oxytocin, or oxytetracycline? **Oxytocin**

What is the primary key to effective fly control? **Sanitation**

A rolling herd average (RHA) is based on how many months? 1, 6, 12, 18, or 24 **12 months**

What is the primary purpose of tail docking? **Sanitation**

What is the average mature weight of a Holstein cow? **1500 Pounds**

Which of the following is not an approved visible method of identification for DHI: freeze branding, tattoo, neck chain, or anklet? **Tattoo**

In terms of input cost to produce milk what is the largest expense? **Feed**

Why, other than for a show, are cows clipped, especially in the winter? **Help keep them clean; Help keep the milk clean**

DHI herds average how many more pounds of milk per cow per year than do non-DHI herds: 1000 pounds, 2000 pounds, 5000 pounds, or 10,000 pounds? **5000 Pounds**

How much time should there be between washing a cow's udder and putting the milking units on the cow? **45 Sec - 1.5 Minutes**

Which of the following would be considered a voluntary reason for culling a dairy cow: low production, non-breeder, mastitis, or crippled? **Low production**

How long should the dry period be for a cow? **At least 40 days (40 - 70 days preferred)**

What does the term CD-Rom mean? **Compact disk read only memory**

Why are teeth problems rare in today's dairies? **Average age of herds is generally less than 4 years**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym TIA stand for? **Thanks in advance**

Face flies, horn flies, houseflies and stable flies are very common around dairy farms. Which of these is the most apt to bite the ankles of cows and feed on their blood? **Stable flies**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym FYI stand for? **For your information**

Which group of animals on the dairy farm would be most affected by heat stress? **Highest producing cows**

How many days are required in the summer for a fly to develop from an egg to an adult? **10 Days**

Which field of science deals with the study of insects? **Entomology**

What substance is most commonly used in foot baths **Copper sulfate**

What is the largest cost in milk production? **Feed**

What is the longest acceptable lactation length that can be published in advertisements? **365 Days**

How many hours of light are recommended to increase milk production? **16 - 18 Hours**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym BTW stand for? **By the way**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym FWIW stand for? **For what it's worth**

What does the acronym ME stand for when referring to a lactation record? **Mature equivalent**

According to university estimates how much does it cost on the average for each day a cow is dry in excess of 60 days? **\$3 Per day**

Approximately how much money is lost per day for heifers calving older than 24 months? **\$2 Per day (\$1.75 - \$2.25)**

What does the acronym HACCP stand for? **Hazard Analysis Critical Control Points**

What does the acronym TQM stand for? **Total Quality Management**

How much nitrogen per year is produced in the manure of a dairy cow? **60 Pounds**

How much silage should be removed from a top-unloading silo each day in order to maintain silage quality? **2 - 4 Inches**

How often should electronic grain feeders be recalibrated? **Weekly**

How should the body condition of a cow change during the dry period? **Should remain constant at about 3.5 to 4**

How would changing a cow's diet from a high energy-high protein diet to a low energy-low protein diet affect her production? **Lower it**

BST is an acronym for what compound? **Bovine Somatotropin**

At high environmental temperatures, what is the primary way by which a cow loses body heat? **Evaporation**

Define calving interval. **Length of time between the time a cow has a calf from one year to the next**

What does the acronym IPM stand for? **Integrated Pest Management**

Define the term symbiotic relationship? **A relationship that benefits both organisms**

Which type traits are most highly related to longevity or "stayability"? **Udder traits (depth)**

How can we compare the production of 2 cows that are of different ages? **Mature equivalent records**

What is the definition of an animal unit? **1,000 pounds of animal live-weight**

What does the acronym IOFC refer to in dairy management? **Income over feed cost**

What is the recommended minimum number of hours of darkness for a dairy cow? **6 Hours**

How do you calculate the rolling herd average? **Divide the total herd production for a year by the average number of cows in the herd during the year**

What is Dairy-L? **Electronic discussion group for dairy producers, researchers and veterinarians**

According to a recent NAHMS study, what is the primary reason cows are culled from the dairy herd? **Poor reproduction**

Which seasons require the most inlet adjustment in a buildings ventilation system? **Spring & fall**

What does the acronym CAFO stand for in environmental concerns? **Concentrated Animal Feeding Operation**

What term is used to measure expected future production of milking cows within the current herd? **Predicted transmitting ability**

How many gallons of moisture per day by respiration alone can a cow produce? **4 - 6 gallons**

What is the optimal length of the dry period? **50 - 70 days**

Body condition scores from 1 to 5 are used to track herd health and nutrition. What should be the body condition score of dry cows? **3.5 - 4.0**

The first organized cow testing association was formed in which country? **Denmark**

Hot weather stresses cows and can drop production by 30 percent, what feed ingredient can be helpful with heat stress? **Niacin**

How many gallons of water does a cow drink for every pound of milk produced? **0.25 - 0.35 gallons of water**

When the wash solution water is draining from the tank at the end of the wash cycle, the temperature should be no lower than what? **110 Degrees Fahrenheit**

What is the name of the first milk after a cow calves? **Colostrum**

Name 2 micronutrients that are important in maintaining hoof integrity. **Copper; Sulfur; Zinc**

What does the acronym DHIA stand for? **Dairy Herd Improvement Association**

What are the recommended free stall dimensions for a 1400-pound cow? **4'0" (width) X 7'0' length**

When is the proper time to condition a dairy cow for the next lactation? **During the later stage of lactation**

Please spell the name of the milk first produced by a cow after the birth of her calf. **C-O-L-O-S-T-R-U-M**

Name 3 methods by which horn flies and face flies can be controlled on dairy cattle. **Ear tags or strips with insecticide; Feed additives; Sprays; Dusts; Backrubbers**

Name 3 substances that can be used effectively in a footbath. **Copper sulfate; Zinc sulfate; Formalin**

Name 3 things that can have an effect on the amount of water a cow drinks? **Production; Ration; Size; Weather**

Name 3 ways to keep livestock cool during hot months of the year. **Easy access to clean; Cool water; Plenty of fresh air; Adequate Shade; High quality feed; Increase ventilation; Sprinkling**

Name 5 input costs on a dairy farm. **Feed & Labor; Depreciation; Seed; Fertilizer; Utilities; Rent; Etc.**

Give 3 reasons for culling a cow from the herd. **Disease; Injury; Low production; Mastitis; Not pregnant; Poor type**

Name 3 of the ways by which a cow can lose body heat. **Convection; Conduction; Radiation; Evaporation**

Give 3 reasons for spreading manure on cropland. **Fertilizer value; Waste disposal; Cover or protect soil**

Name 3 types of flies that are commonly found around the dairy farm. **Housefly; Stable fly; Face fly; Horn fly; Heel fly; Deer fly**

Name 3 conditions that can result in poor quality colostrum. **Cow dry less than 3-4 weeks; premilking; Young cow; Leaking teats; Dirty udder and teats**

Name 3 factors which influence the amount of water consumed by dairy cattle. **Body size; Environmental temperature; Water temperature; Relative humidity; Breed; Diet; Milk production; Water quality**

Name 3 laboratory tests available through DHI. **Butterfat percentage; Protein percentage; Solids-not-fat percentage (SNF); Milk urea nitrogen (MUN)**

Name 3 factors that determine the amount of milk a cow produces? **Genetics; Nutrition; Age; Size; Breed; Health; Reproductive status; Stage of lactation**

Give 3 reasons flies should be controlled around a dairy farm. **Help control bacteria in milk; Prevent disease spread; Reduce dirt**

Name 3 methods of temporary identification. **Ear tag; Neck chain; Tail tag; Brisket tag; Leg band; Paint Brand; Back tag**

Name 3 methods of permanent identification. **Freeze brand; Hot brand; Photograph; Sketch; Tattoo**

Name 3 ways to decrease heat stress on the dairy farm during hot weather? **Managing Rations; Shades; Misters and Fans**

Give 3 purposes of a foot bath. **Remove irritants from the foot and between the toes; Disinfect and cleanse the foot; Dry and toughen the foot**

The size of an animal's flight zone changes depending upon 5 factors: Name 3. **Handlers angle & speed of approach; Cow's familiarity with the handler; Sound and visual contact with handler; Wildness or tameness of the animal; Recent experience of animal**

Name 3 methods that heat stress on cows can be reduced: **Fans; Increase feeding frequency; Misting/Sprinkling; Ration changes (decrease fiber); Shades**

A drop in butterfat test may be caused by several factors. Name 3 of them: **Hot weather; incomplete milking; Low fiber ration; Lush Spring grass;**

Name 3 factors which can affect a herd's rolling herd average. **Genetic ability; Nutrition; Average age; Percent days in milk; Mastitis; Milking frequency; Culling; Heifers in herd**

Name 4 advantages of composting manure. **Reduces volume; Doesn't attract flies & insects; Reduces potential for nutrient runoff; Weeds & pathogens destroyed; More uniform than manure; Reduces fertilizer needs; Excellent soil conditioner**

Give 3 advantages of grazing. **Exercise; Less waste handling; No harvesting costs; No storage costs; Utilize low cost feedstuffs**

Give 3 disadvantages of grazing. **Distance from parlor; Inconsistent quality; Inconsistent quantity; Unable to balance ration precisely; Lower forage production per acre**

Name 3 advantages of a 2 group dry cow system. **Less metabolic disease; Improved feed intake postpartum; Increased milk production**

Name 3 factors that should be considered when grouping lactating cows. **Fat-corrected milk yield; body condition; Age or lactation number**

Manufacturing and Dairy Foods

- T/F The higher protein content of milk, the lower the amount of cheese produced. **False**
- T/F Bacterial cultures are often used in the manufacture of cheese. **True**
- T/F Iron is the major mineral nutrient in milk. **False**
- T/F The plastic milk jug was introduced commercially in 1964. **True**
- T/F The top 3 selling flavors of ice cream are vanilla, chocolate and Neapolitan. **True**
- T/F UHT milk does not need to be refrigerated prior to opening. **True**
- T/F Milk contaminated with antibiotics cannot be sold fresh, so it is usually made into cheese. **False**
- T/F Skim milk is an rich source of Vitamin A. **False**
- T/F UHT milk does not need to be refrigerated at any time. **False**
- T/F Cheddar cheese was first made in the United States. **False**
- T/F Ice cream has a minimum of 40 percent milk fat. **False**
- T/F Homogenization kills harmful bacteria in milk. **False**
- T/F The minimum percent milk fat which is allowed in ice cream is ten (10) percent. **True**
- T/F The homogenization process destroys pathogens found in milk that may cause human disease. **False**
- T/F The plastic milk jug was introduced commercially in 1954. **False**
- T/F Homogenized milk cannot be fed to baby calves. **False**
- T/F More milk was processed into cheese in 1982 than was processed into fluid whole milk. **True**
- T/F Milk is an excellent source of iron. **False**
- T/F One hundred pounds of milk yields about 10 pounds of American cheese. **True**
- T/F The caloric content of butter and margarine are identical. **True**
- T/F Raw, unpasteurized milk can carry disease-causing germs. **True**
- T/F The top 3 selling flavors of ice cream are vanilla, chocolate and strawberry. **False**
- T/F One gallon of ice cream mix results in 1 gallon of ice cream when frozen and packaged for sale. **False**
- T/F Cultured buttermilk is made by adding bacteria to skim milk. **True**
- T/F Brucellosis causing bacteria are killed by pasteurization. **True**
- T/F Milk is a good source of protein in the human diet. **True**
- T/F Milk is an excellent source of Vitamin C. **False**

Lactose is a: protein, sugar, fat, or mineral? **Sugar**

In testing for butterfat, what test is generally considered the reference standard by which other tests are measured?
Babcock test or Mojonnier test

In what part of whole milk are most of the off-flavors found? **Butterfat**

One hundred pounds of whole milk should yield about how many pounds of cheese? **10 Pounds**

The plastic milk jug was introduced commercially in what year? **1964**

What is the name of the process which breaks down the fat globules in milk so they will stay in suspension and not rise to the top? **Homogenization**

Whey is a by-product of what dairy food manufacturing process? **Cheese making**

The federal government requires low-fat and non-fat milk products to be fortified with which vitamins? **A and D**

Name 2 cheeses typically not made from the milk of a cow? **Feta (goat) & Roquefort (sheep)**

In making cheese, milk is divided into solids and liquids. What are these 2 components called? **Curds and Whey**

Little Miss Muffet sat on her tuffet, eating her curds and whey. How many pounds of cheese are produced from 10 pounds of milk? **1 Pound**

Little Miss Muffet sat on her tuffet, eating her curds and whey. How many pounds of milk are needed to make 10 pound of curds? **100 Pounds**

Little Miss Muffet sat on her tuffet, eating her curds and whey. Name a cheese that was developed in the United States. **Brick, American, Colby**

What is the primary reason for pasteurization of milk? **Kill pathogens**

What is the major carbohydrate in milk? **Lactose**

The first cheese factory in the US was built in which state? **New York**

What is the largest solid component of whey? **Lactose**

What is the largest component of dried whey? **Lactose**

What percentage of milk are solids? **12-13 Percent**

What is the major use of casein in the United States? **Manufacture of imitation cheese**

It takes how many pounds of milk to make 1 pound of cheese? 1, 5, 10, 12, or 15. **10 Pounds**

Who developed condensed milk and in what year? **Borden in 1856**

On the average how many pounds of cheese can be manufactured from 100 pounds of milk? **10 Pounds**

Roquefort cheese is made from the milk of what animal? **Sheep (ewe)**

Several dairy processors are bottling milk in opaque plastic containers. These are often colored yellow or white. What is the purpose of using containers of this type? **Reduce the development of oxidized flavors**

Milk is approximately what percent water. **87 Percent**

Exposure of milk to light causes what off-flavor to develop? **Oxidized**

Whole milk is nearly what percent fat free: 50%, 80%, 87%, or 96.5%. **96.5 Percent**

Feta cheese is made from the milk of what animal? **Goat (doe)**

Fluorescent lights in dairy cases are a primary cause of what off-flavor in milk? **Oxidized**

How hot is milk heated to and for how long in the HTST pasteurization process? **161 degrees for 15 seconds**

How long must milk be pasteurized to kill the Johne's organism? **9 minutes**

What dairy product experienced a steady decrease in per capita consumption from the 1930's until it reached an all-time low of 3.5 pounds in 1989? **Butter**

What does the acronym UHT stand for when referring to processed milk? **Ultrahigh temperature**

Which is the most popular material for packaging fluid milk? **Plastic**

What happens to milk when the pasteurization temperatures exceed 175°F and holding times exceed 20 seconds?
Develops a cooked flavor

What milk component is the major determinant of the amount of cheese yield from milk? **Protein**

What is the butterfat content of 2% homogenized milk according to the Pasteurized Milk Ordinance (PMO)? **2.0 Percent**

What test is used to determine if raw milk has been added to pasteurized milk? **Phosphatase test**

Nearly 43% of all milk produced in the U.S. is made into Class I products while 36% is made into class III products.
What products make up Class III? **Cheese; Butter; Milk powder**

What is the primary component of dried whey? **Lactose**

What is the primary factor in milk that is removed by a clarifier? **Somatic cells**

Name 2 cheeses that are manufactured from the milk of any animal other than the dairy cow. **Feta; Roquefort**

The fat globule membrane protects milk triglycerides from what enzyme that is a potential cause of hydrolytic rancidity? **Lipase**

When referring to pasteurization, what does the acronym HTST stand for? **High temperature; short time**

Cheese accounts for what percentage of the milk supply? **33 Percent (30 - 35 Percent)**

How much butter is normally produced from a pound of butterfat? **1.2 Pounds**

What is the name of the manufacturing process that is used to disperse the fat evenly throughout milk?
Homogenization

What is the name of the manufacturing process that is used to kill harmful bacteria in milk? **Pasteurization**

What is casein? **Primary milk protein**

What is lactose? **Milk sugar**

Milk is packaged in various sizes. What is the most popular size? **1 Gallon**

Various types of materials (i.e. glass, plastic, metal, paper) can be used to package fluid milk. Which is the most popular? **Plastic**

Who invented the continuous centrifugal cream separator in 1878? **Dr. Gustav DeLaval**

Who is credited with obtaining the first patent for condensing milk? **Gail Borden**

Butter has: more, fewer, or the same calories as regular margarine. **The same**

One tablespoon of half and half has: more, fewer, or the same calories as 1 tablespoon of a non-dairy coffee creamer? **Fewer**

Who is credited with perfecting the test for fat content in milk in 1890? **Dr. S.M. Babcock**

What is the minimum milk fat percentage allowed in ice cream? **10 Percent**

What is the minimum percent milk fat allowed in butter? **80 Percent**

What is the minimum standard for butterfat content of homogenized whole milk according to the Pasteurized Milk Ordinance (PMO)? **3.25 Percent**

What is the minimum standard for solids-not-fat of homogenized, whole milk according to the Pasteurized Milk Ordinance (PMO): 3.25%, 8.25%, 12.5%, or 15%? **8.25 Percent**

Name a milk protein. **Casein; Albumin; Globulins**

Whey is a by-product of the manufacturing process that results in which of the following products: cheese, butter, condensed milk, or dry milk powder? **Cheese**

What is the most popular variety of cheese in the United States: Mozzarella, Parmesan, Cheddar, or Swiss? **Cheddar cheese**

What is the name of the by-product from the manufacture of cheese that is a good feed source. **Whey**

What is the process called which kills harmful bacteria in milk? **Pasteurization**

What is the enzyme obtained from the lining of a calf's stomach that is used to coagulate casein protein when making cheese? **Rennin**

What is the chemical name of the primary milk protein? **Casein**

Little Miss Muffet sat on her tuffet, eating her curds and whey. How many pounds of whey are produced from 10 pounds of milk? **9 Pounds**

Name the largest butter producer in the United States. **Land-O-Lakes**

How many pounds of milk does it take to produce a pound of butter? **20.65 Pounds**

What is the most common size in which aged cheeses are aged? **40 Pound blocks**

Name a type of container that helps to prevent off-flavor development and vitamin loss in milk. **Paper cartons; Pigmented plastic jugs**

What is the largest component of butter? **Milk fat**

About what percent of the US milk supply is processed into cheese? **30 - 35 Percent**

About what percent of the US milk supply is processed into fluid milk? **40 - 45 Percent**

How much milk does it take to make 1 pound of cheddar cheese? **10 pounds**

Define UHT milk? **Milk which is processed at high temperature and packaged in stout packages**

What process turns cream into butter? **Churning**

Name the major protein found in milk. **Casein**

Titanium dioxide has been added to nonfat milk. What is its purpose? **Whiten the milk**

What is the most popular method of pasteurizing milk in the United States? **High temperature-short time (HTST)**

What does the acronym NFDM stand for? **Non-fat dry milk**

What percent of milk processors in the United States use the high temperature-short time (HTST) method of milk pasteurization? **90 Percent**

The characteristic creamy color seen in high butterfat milk is due to the presence of what substance in the milk? **Carotene (carotenoid)**

What breed of cow is considered to have the most desirable milk for making cheese? **Brown Swiss**

How many pounds, to the nearest tenth, of non-fat dry milk powder can be made from 100 pounds of milk? **8.6 Pounds**

Which of the following is not a part of the solids-not-fat portion of milk: protein, lactose, minerals, or butterfat? **Butterfat**

How much whey is produced on the average when 100 pounds of milk is manufactured into cheese? **90 Pounds**

What is the name of the process that prevents cream from rising in whole milk? **Homogenization**

Little Miss Muffet sat on her tuffet, eating her curds and whey. How many pounds of whey are produced from 100 pounds of milk? **90 Pounds**

Little Miss Muffet sat on her tuffet, eating her curds and whey. How many pounds of milk are needed to make 1 pound of curds? **10 Pounds**

How many pounds, to the nearest tenth, of butter can be made from 100 pounds of milk? **4.2 Pounds**

What is the process at the dairy plant that assures that the milk and dairy products will be uniform in protein and fat? **Standardization**

Pasteurization is used to destroy: antibiotics, bacteria, somatic cells, all of the above. **Bacteria**

Name 3 cheeses that originated in the United States. **Brick; Colby; American**

Name 3 types of cheese. **Cheddar; Swiss; Mozzarella; Gouda; Edam; Muenster; Parmesan; Provolone; Monterey Jack; etc.**

Marketing

- T/F Children and teenagers account for over 50% of all milk consumed in this country. **True**
- T/F Class I milk is used for fluid products. **True**
- T/F Currently there is a national dairy promotion program. **True**
- T/F Raising the price of milk in the store lowers the amount sold. **True**
- T/F Advertising and promotion can help raise milk sales. **True**
- T/F The Federal Order guarantees a market for a producer's milk. **False**
- T/F Market administrators are agents of the U.S. Secretary of Agriculture. **True**
- T/F The federal Agricultural Marketing Act of 1937 that is the basis for federal milk orders also regulates fruits, nuts and vegetables. **True**
- T/F There are nearly 30,000 dairy cooperatives in India. **True**
- T/F Casein is classified as a chemical and is therefore not subject to dairy import quotas. **True**
- T/F Payment is based on percentage of components in milk with multiple component pricing. **False**
- T/F With multiple component pricing, payment is based on percentage of components in milk. **False**
- T/F All of the casein used in this country is imported. **True**
- T/F As people get older; they tend to drink more milk. **False**
- T/F As people get older; they tend to drink less milk. **True**
- T/F All milk produced commercially in Oklahoma is marketed as Class I. **False**
- T/F The Dairy and Food Nutrition Council, better known as the, Dairy Council, is responsible for the advertising of milk. **False**
- T/F The United States has more dairy cooperatives than any other country. **False**
- T/F The United States is the largest exporter of nonfat dry milk in the world. **True**
- The first generic advertising campaign was conducted in what year? **1916**
- In the late 1800's in order to protect butter and restrict the competition from margarine, several states required that margarine be which color: pink, blue, green, or orange? **Pink**
- Where was UHT milk first introduced to the United States public? **1982 World's Fair in Knoxville; Tennessee**
- What is the name of the joint venture between the National Dairy Board (NDB) and the United Dairy Industry Association (UDIA)? **Dairy Management Inc.(DMI)**
- The acronym CCC refers to what government organization. **Commodity Credit Corporation**
- Name America's oldest continually operated dairy co-op and year it was formed. **Danish Creamery Association; 1895**

The European Economic Community (Common Market) is the world's leading exporter of dairy products. Where does the United States rank? **Third**

What was the name of the first major regional dairy cooperative? **Milk Producers, Inc.**

The first generic advertising campaign was conducted in 1916. How much money was raised to finance the campaign? **\$50,000**

The expiration date on a milk carton is a consumer's assurance of what? **Fresh dairy product**

Relative to all consumer prices has the cost of milk: gone up, come down, or remained the same, since 1967? **Come down**

A recent Dairy Management Inc. study revealed children under the age of 18 make-up 26% of the population but drink what percentage of the milk volume? **16 Percent**

What percent of the milk consumed in India is produced by water buffalo? **60 Percent**

Define milk base. **Method which encourages production which better conforms to the consumption patterns of fluid milk**

What does the acronym PMO stand for in milk marketing? **Pasteurized Milk Ordinance**

The National Milk Producers Federation (NMPF) was founded in what year: 1900,1916, 1945, or 1965? **1916**

The first generic advertising campaign was conducted in 1916 in 2 national magazines. What are the names of those magazines? **Saturday Evening Post and Ladies Home Journal**

What is the purpose of federal milk marketing orders? **Promote the orderly marketing of milk**

What are the 2 most common grades of milk in the United States? **Grades A and B**

Approximately what percentage of the world's dairy production is made into dairy products that enter international trade? **5 - 7 Percent**

Dairy farmers can buy and sell dairy futures on what exchange? **Chicago Mercantile Exchange (CME) and Coffee, Sugar and Cocoa Exchange (CSCE)**

According to a Dairy Management Inc. (DMI) study, ten percent of the population consumes 47 percent of what dairy product? **Butter**

A regulation issued by the Secretary of Agriculture that puts certain requirements on the handling of milk in a particular marketing area is called what? **Federal Milk Marketing Order**

Define the term make allowance. **Cost of manufacturing cheese or butter and non-fat dry milk**

Expiration dates, which are stamped on dairy products, are placed there for what purpose? **Indicate the last date on which the product can be sold**

The "Real Seal" assures the consumer of what, concerning the product they are purchasing? **It is a genuine dairy product**

Which country is the largest importer of cheese? **United States**

Which country is the largest importer of nonfat dry milk? **Mexico**

Under federal milk marketing orders, Class I milk, the highest priced milk, refers to all milk sold in what form?
Fluid milk products

Which of the following is not a Class I dairy product: fluid whole milk, fluid skim milk, fluid cream, chocolate milk, or none of the above? **Fluid Cream**

Which class of milk is used as fluid or drinking milk? **Class I**

The United States produces approximately 15% of the world's milk supply. Where does this rank the country?
Third

Which of the following is considered to be the primary reason for declining per person consumption of milk?
Off-flavors, price, fat content, color. **Off-flavors**

Which of the following is a Class III dairy product: cottage cheese, cheddar cheese, yogurt, or ice cream?
Cheddar cheese

Grade A milk can be used for what purpose? **Fluid and manufacturing milk (all purposes)**

What milk-marketing co-op has the most members and most milk volume? **Dairy Farmers of America (DFA)**

Class I milk is used for what purpose? **Fluid or drinking milk**

What is the slogan of the national promotion program for cheese? **Behold the power of cheese**

What is natural cheese? **Cheese made from milk**

How many price classes are proposed by the USDA in the federal order reform? **4**

What organization does the acronym ADA stand for? **American Dairy Association**

What organization does the acronym UDIA stand for? **United Dairy Industry Association**

What organization does the acronym NMPF stand for? **National Milk Producers Federation**

What does the acronym BFP stand for? **Basic formula price**

Dairy Farmers of America is the largest dairy cooperative, which is the second largest? **Land O' Lakes**

Some Jersey breeders market milk through a line of cheese made exclusively with the milk from Jersey cows. What is the name used for this cheese? **Jersey Pride**

During which season of the year is milk in the greatest demand? **Fall**

Approximately what percentage of the world's dairy production is consumed within the country of production? **95 Percent**

Cheddar is the most popular cheese; what is the second most popular cheese? **Mozzarella**

All milk containers and packages have an ID code. What does the code represent? **State and plant where the product was processed**

Who funds the Milk PEP dairy promotion program? **Fluid milk processors**

What organization is the largest private exporter of dairy products in the world? **New Zealand Dairy Board**

What is the name of Dairy Management, Inc.'s largest cheese campaign? **Behold the power of cheese**

UDIA & NDB merged to form what organization? **Dairy Management Inc. (DMI)**

What does the acronym DEIP stand for? **Dairy Export Incentive Program**

Your neighbor says he is contracting his milk on the CSCE. What do the letters CSCE stand for? **Coffee, Sugar and Cocoa Exchange**

Which country was the leading importer of cheese from the United States in 1997? **Japan**

In June 1993, the Coffee, Sugar & Cocoa Exchange introduced 2 new future market options. These 2 options are nonfat dry milk and what other dairy product? **Cheese**

Since 1984, dairy farmers have been assessed how many cents on every 100 pounds of milk sold, for the purpose of promoting milk sales? **15 cents**

One 8-oz serving of milk contains how many milligrams of calcium? 100, 200, 300, 400 **300 Milligrams**

In what year was the Minnesota-Wisconsin (M-W) price series replaced by the Basic Formula Price (BFP)? **1995**

Where does the United States rank in the world in the per capita consumption of fluid milk? **Eleventh**

In what year was the Minnesota-Wisconsin (M-W) price series first established? **1961**

Federal Milk Marketing orders are based on legislation that was enacted in 1927, 1937, 1947 or 1957? **1937**

Butter trading at the Chicago Mercantile Exchange occurs on which days of the week? **Monday, Wednesday & Friday**

Cheese trading at the Chicago Mercantile Exchange occurs on which days of the week? **Every day of the week**

As of January 1, 2000, Oklahoma is located in what federal milk marketing order? **Central Order (#32)**

What type of cheese is used for the purpose of calculating Cheese Yield Dollars? **Cheddar**

What is the "Real Seal"? **Emblem used to identify genuine dairy products**

Name 3 class III dairy products. **Butter; Dried milk powder; Hard cheese**

During which 3 months is milk generally in the greatest supply? **April; May; June**

Name 3 class I dairy products. **Chocolate milk; Whole milk; Reduced fat milk; Low fat milk; Fat-free milk**

Name 3 class II dairy products. **Cottage cheese; Half and Half; Ice cream; Novelties; Sour cream; Yogurt**

Mastitis and Milk Quality

T/F Research has shown that the use of dry cow mastitis treatments can return up to \$40 in additional income. **True**

T/F Sanitation is not as important in controlling mastitis as it once was because we now have better antibiotics. **False**

T/F Acid degree value (ADV) and acidity do not refer to the same things. **True**

T/F Cows should not be fed silage for 2 hours prior to milking. **True**

T/F Day to day variation in somatic cell counts is greater in infected cows than uninfected cows. **True**

T/F Due to the diversity of mastitis causing organisms, it is best to use a treatment composed of several antibiotics. **False**

T/F During milking the vacuum is not shut off from the end of the teat. **True**

T/F Subclinical mastitis reduces milk production. **True**

T/F Studies show that antibiotic therapy of heifers prior to calving can be an effective procedure for eliminating udder infections in heifers and reducing mastitis during lactation. **True**

T/F An infection in the udder is called metritis. **False**

T/F All mastitis causing organisms are susceptible to antibiotics. **False**

T/F Day to day variation in somatic cell counts is greater in uninfected cows than in infected cows. **False**

T/F Improper mastitis treatment procedures can result in infections that have greater consequence than the original infection. **True**

T/F It is possible for dry cows to get mastitis? **True**

T/F Milk can be flavored by feed, especially by silage. **True**

T/F Teat dipping is used to cure mastitis. **False**

T/F More frequent milking is a good practice when treating a cow with mastitis. **True**

T/F The California Mastitis Test (CMT) identifies the type of organism that is causing the mastitis. **False**

T/F One of the advantages of dry cow treatment for mastitis is that the cure rate is higher. **True**

T/F The milk produced by a cow who has been treated with antibiotics in the uterus does not need to be discarded since the antibiotic was not used in the udder. **False**

T/F The primary cause of high acidity is bacterial growth. **True**

T/F The quality of milk produced on the farm directly affects the quality of milk sold in the store. **True**

T/F Using the same towel or cloth to wash and dry several cows is recommended because it conserves valuable resources. **False**

T/F Using the same towel or cloth to wash and dry several cows will spread mastitis causing bacteria. **True**

- T/F Somatic cell counts in herds with low mastitis infection rates vary more than herds with high infection rates. **False**
- T/F There is no need to be careful during mastitis treatment, because the antibiotic will kill anything that gets into the udder. **False**
- T/F When treating a cow for mastitis the milk from all 4 quarters must be discarded. **True**
- T/F When treating a cow in the udder for mastitis, only the milk from the quarter that was treated must be discarded. **False**
- T/F A 1% iodine solution is commonly used as teat dip. **True**
- T/F The letters CMT stand for cowside mastitis test. **False**
- T/F It is possible for dry cows to get mastitis? **True**
- T/F Plasmin, a proteolytic enzyme that is increased in the milk of cows with mastitis, is not inactivated by pasteurization. **True**
- T/F Acid degree value (ADV) and acidity refer to the same things. **False**
- T/F A 1% iodine solution is commonly used as teat dip. **True**
- T/F There is a normal 10 to 15 percent variation in somatic cell counts. **True**
- T/F Research indicates that high-producing cows have more mastitis. **True**
- T/F Maximum oxytocin concentration in blood about occurs 1 minute after the beginning of stimulation. **True**
- T/F The antibiotics used to treat mastitis are rarely excreted into the milk. **False**
- T/F A high somatic cell count in mid-lactation generally indicates that a cow is unhealthy. **True**
- T/F Adding water to milk causes it to have a lower percent solids content. **True**
- T/F Overmilking can be a major cause of mastitis. **True**
- T/F Total incidence of clinical mastitis is less in cows receiving no dry cow treatment. **False**
- T/F Subclinical mastitis does not affect the nutritional value of milk. **False**
- T/F Machine stripping should be a part of the normal milking routine. **False**
- T/F All antibiotics have equal effectiveness against mastitis causing organisms **False**
- T/F In herds that are not allowed on pasture, feed flavor in milk is not a problem. **False**
- T/F A high CMT or WMT reading on a bulk tank sample indicates that there is a problem with cooling or equipment sanitation. **False**
- T/F New dry period infections are the major cause of clinical mastitis during the early weeks of lactation. **True**
- T/F Mycoplasma mastitis does not respond to treatment with antibiotics. **True**

- T/F Aloe Vera extract is an effective and cost-efficient way to treat cases of subclinical mastitis. **False**
- T/F The dry period is the best time to treat mastitis with antibiotics. **True**
- T/F Clinical mastitis is the most important form of mastitis. **False**
- T/F House flies are capable of carrying mastitis causing germs. **True**
- T/F Generally the major difference between a mastitis treatment for lactating cows and dry cows is the concentration of the antibiotic. **False**
- T/F According to the Grade A Pasteurized Milk Order (PMO), the teats and udders of cows must be cleaned and sanitized prior to milking. **True**
- T/F Antibiotics in milk are important because some people are resistant to them. **False**
- T/F Teat dipping is effective in controlling all mastitis organisms. **False**
- T/F Teat dips should be oil-based to prevent chapping of the teats. **False**
- T/F All mastitis causing organisms are present in the environment and cannot be eliminated. **False**
- T/F Teat dipping is a recommended practice because it helps prevent new infections from occurring. **True**
- T/F Teat dipping is used to prevent mastitis. **True**
- T/F Teat dipping should be a part of the normal milking routine. **True**
- T/F Subclinical, mastitis can be detected by either the Wisconsin Mastitis Test (WMT) or **True**
- T/F Vacuum fluctuation should be minimized since it may lead to increased mastitis infection. **True**
- T/F When a cow who is normal in all of her quarters at drying off, she can get mastitis while she is dry. **True**
- T/F When a teat cup liner collapses during milking, it does not squeeze the teat. **True**
- T/F Certain types of mastitis can be spread through the use of dirty needles or syringes. **True**
- T/F Yeast can be a cause of mastitis. **True**
- T/F Milk as it comes from the udder of a normal, healthy cow is bacteriologically sterile. **False**
- T/F There is no vaccine for mastitis. **False**
- T/F Some cases of mastitis spontaneously recover without treatment. **True**
- T/F Mastitis reduces the quality of milk. **True**
- T/F Milk can be rapidly checked to determine if water has been added by checking its freezing point. **True**
- One of the recommended practices for the control of mastitis is the use of milking order groups. When should cows in their first lactation be milked? **First**
- What is the primary source of coliform bacteria? **Environment**

Lactoferrin is produced in the mammary gland of the dairy cow during the dry period. What is the function of this protein substance? **Protect the udder from mastitis infection**

Using individual paper towels to wash udders helps to prevent the spread of what disease? **Mastitis**

Milk should be refrigerated at what temperature to prevent spoilage? **Below 40 degrees Fahrenheit**

What is the purpose of keeping cows away from silage for at least 2 hours prior to milking? **Eliminate feed flavors in the milk**

Which type of mastitis do flakes or clots in the milk generally characterize? **Clinical**

If a cow has mastitis, the veterinarian will run culture and sensitivity tests on what type of sample? **Milk**

Which of the following is not a cause of mastitis: udder sponges, multi-use syringes for udder infusion, faulty milking equipment, high protein ration, or none of the above? **High protein feed ration**

What must be done with milk that is contaminated with antibiotics? **It must be dumped or processed for animal feed**

Which of the following is not characteristic of mycoplasma mastitis: more than 1 quarter involved, drastic decline in production, antibiotic therapy effective, lameness due to arthritis? **Responds well to antibiotic therapy**

Which of the following is the most economically important form of mastitis: acute, chronic, clinical, subclinical or none of the above? **Subclinical**

Which of the following organisms can be completely eliminated as a source of mastitis in closed dairy herds: Staph. aureus, Strep. agalactiae, Strep. dysagalactiae, or E. coli? **Streptococcus agalactiae**

Which of the following temperatures is the most desired temperature for milk in the farm bulk tank: 18 degrees F, 28 degrees F, 38 degrees F, or 48 degrees F? **38 Degrees Fahrenheit**

The CMT is used to detect what type of infection? **Mastitis**

Which enzyme reacts with the fat in milk releasing fatty acids and resulting in rancidity? **Lipase**

What is the broad name used to describe udder infection or disease? **Mastitis**

Why do you use an effective dry cow treatment when drying off a cow? **Treat subclinical mastitis; Prevent new infections**

Why is dry cow therapy recommended? **Reduces mastitis infections while a cow is dry; Helps to prevent new infections**

You infuse an antibiotic into a cow's udder, how should her milk be handled: discard milk from treated quarter according to label, discard milk from treated quarter for 96 hours, discard all milk according to label, or discard all milk for 96 hours? **Discard all milk according to the label**

Your milk handler holds a sample of your milk for 18 hours at 55o Fahrenheit and then plates it out for a bacteria count. What type of bacteria count is being conducted? **Preliminary incubation**

What is the purpose of using individual, disposable paper towels to wash a cow's udder? **Help control mastitis**

When should teat dip be applied? **As soon as possible after a cow is milked**

What is mastitis? **Infection of the udder**

When is the most effective time to treat mastitis infections? **At drying off**

Name 1 of the 2 major mastitis-causing organisms: **Staphylococcus aureus; Streptococcus agalactiae**

Name 1 of the 2 primary times when a cow is most susceptible to becoming infected with mastitis. **Freshening (calving); Drying off**

What test is considered the reference standard by which all other tests are calibrated? **Babcock test or Mojonnier test**

The mastitis causing organisms E. coli, Klebsiella pneumonia, Enterobacter, Serratia, Citrobacter and Pseudomonas are often referred to by a common term. What is the term? **Coliforms**

What major disease of dairy cattle causes the most loss of milk production? **Mastitis**

Name the 2 procedures, which are most effective in controlling contagious mastitis, and tell the mode of action in controlling mastitis. **Dipping all teats - prevents new mastitis infection; Treating all quarters at dry-off - elimination of existing infections**

Name 1 of the 2 times when a cow is most susceptible to new mammary infections: **First week of the dry period; Last week prior to calving**

Prototheca is a colorless algae which can cause disease in dairy cattle. What disease can it cause? **Mastitis**

SCC is useful for cow mastitis management. What does the acronym SCC stand for? **Somatic Cell Count**

A new milking machine system has been installed and the number of mastitis cases goes up. What should you do? **Check system to see that it is working properly; Check to see if the equipment is being operated properly**

The Charm test and Delvo test are tests for what contaminant of milk? **Antibiotics**

The Charm test is a test for what contaminant of milk? **Antibiotics**

There are 2 primary times when a cow is most susceptible to becoming infected with mastitis. Name 1 of them: **Freshening (calving) and Drying off**

Where do the majority of pronounced flavor defects in milk originate? **On the farm**

Udder infection is measured through what laboratory test that is available through DHI? **Somatic Cell Count (SCC)**

What DHI test is useful as a management tool to control mastitis? **Somatic Cell Count (SCC)**

What off-flavor in milk is characterized as chalky, cardboard-flavored or bland? **Oxidized**

What do the following compounds have in common: chlorhexadine, quaternary ammonia, bronopol and iodine? **Used in teat dips**

What do the Charm Test and the Delvo Test have in common? **Tests for antibiotics**

What is the most probable cause of a high titratable acidity in raw milk? **Poor cooling**

What is the primary organism that causes contagious mastitis? **Staphylococcus aureus**

What does the acronym PI stand for when talking about milk tests? **Preliminary incubation**

Which of the following is not a primary organism associated with mastitis: Staph aureus, Strep. agalactia, Strep. uberis, Brucella abortus, or none of the above? **Brucella abortus**

What is the most economically important (costly) form of mastitis? **Subclinical**

What does the acronym SPC refer to? **Standard plate count**

What should you do when you suspect that some sort of adulteration has occurred to the milk in a bulk tank? **Have it tested**

When inserting a treatment tube into a cow's teat, how far into the teat end should it be inserted? **1/8 - 1/4 inch**

Which of the following is not a primary organism associated with mastitis: Staph. aureus, Strep. agalactiae, Strep. uberis, Bovis mastos, or none of the above? **Bovis mastos**

On the average, how much less milk per lactation will a cow with a somatic cell count score of 5 produce than a similar cow with a somatic cell count score of 4 in a lactation? **400 Pounds**

How long after treatment with an antibiotic must milk be withheld from the market: 24 hours, 36 hours, 84 hours, 96 hours, or according to label instructions? **According to label instructions**

One linear point change in somatic cell count score results in a daily loss or gain of how many pounds of milk? **1.5 pounds**

Name 1 of the 2 causes of pronounced flavor defects that originate on the farm: **Chemical changes; Absorbed flavors**

What component in milk is measured to obtain an indication of whether a cow has mastitis? **Somatic cells; Leucocytes**

The cryoscope measures what in milk to determine if water has been added? **Freezing point**

Somatic cells are made up of what 2 types of cells? **Leucocytes and Epithelial cells**

Some extra label drugs can be used for food-producing animals, other cannot. Which of the following is an illegal drug: clenbuterol, penicillin, tetracycline, all of the above? **Clenbuterol**

Churning occurs in a bulk tank when the temperature of the milk rises above what temperature? **45 Degrees Fahrenheit**

Milk samples are incubated for 18 hours at what temperature when running the preliminary incubation test before they are tested? **55 Degrees Fahrenheit**

What does the acronym SCC stand for? **Somatic Cell Count**

What does the acronym CMT stand for? **California Mastitis Test**

How often should you wash and sanitize a bulk tank? **Every time it is emptied**

When should a milking system be sanitized? **Just prior to each milking**

What is the most common pathogen found in raw milk? **Escherichia coli**

If you think a cow has mastitis, a CMT can be used to detect an infected quarter. What does CMT stand for?
California Mastitis Test

A rancid flavor in milk is associated with which component: fat, protein, vitamins or lactose? **Fat**

Proper cleaning of milk equipment helps to insure the milk is: low in bacteria, high in bacteria, free of antibiotics, or low in white blood cells. **Low in bacteria**

Which of the following is not a primary organism associated with mastitis: Staph. aureus, Strep. agalactiae, Strep. uberis, Strep. dysgalactiae, or none of the above? **None of the above**

Off-flavored or bad tasting milk is often a problem in schools. What usually causes the problem? **Improper handling (high storage temperature, stock not rotated, etc)**

Why do you wash or clean a cow's udder before milking? **Keep dirt out of milk; Help control mastitis**

Which of the following is not a reason for suspension of a permit to ship Grade A milk: antibiotics in milk, high bacteria count, low butterfat percent, or high somatic cell count? **Low butterfat percentage**

What does the acronym WMT stand for? **Wisconsin Mastitis Test**

How many days after a cow calves until her milk is considered acceptable for human consumption? **3 Days**

Pigmented milk containers are used to prevent what off-flavor? **Oxidized**

Which of the following is not an organism generally associated with mastitis: Staph. aureus, Strep. agalactiae, Strep. uberis, Hemophilus somnus, E. coli or none of the above? **Hemophilus somnus**

According to Hoard's Dairyman which of the following is the most used teat dip: quaternary ammonia compounds, chlorhexidines, iodophors, or sodium hypochlorites? **Iodophors (iodine)**

A cow with mastitis will produce milk with increased levels of: protein, calcium, mold, or leucocytes.
Leucocytes

What does the acronym CIP stand for when referring to a milking system? **Clean-in-place**

Why aren't sponges or rags a good choice for washing a cow's udder? **It is not possible to sterilize them between cows therefore they are a good source of mastitis causing bacteria**

The standard recommendation is to keep cows away from silage for at least 2 hours prior to milking. What is the purpose of this recommendation? **Prevent off-flavors in milk**

Acid degree value (ADV) is a laboratory test that is used to detect: added water, antibiotics, rancidity, or none of the above. **Rancidity**

An iodine solution is routinely used at milking time on many dairy farms. Name 1 of it's uses. **Teat dip; Udderwash; Equipment sanitizing**

Which of the following procedures is not part of an effective mastitis control program: teat dipping, dry cow treatment, culling, all of the above, or none of the above? **None of the above**

Which of the following is the most economically important form of mastitis: acute, chronic, clinical, or none of the above? **None of the above (subclinical)**

Which off flavor in milk is characterized as soapy, bitter, and cow-like; that results from breakdown of the membrane surrounding the fat globules? **Rancid**

Latex based teat dips, which seal the teat end, were originally developed for the prevention of mastitis caused by which types of organism? **Coliforms**

After the first milking, the temperature of milk in a bulk tank should not reach higher than: 40 degrees F, 50 degrees F, 60 degrees F, or none of the above, at any time. **50 Degrees Fahrenheit**

Which of the following is the most effective method of eliminating or curing existing mastitis infections: teat dipping, lactating cow therapy, dry cow therapy, or back flushing? **Dry cow therapy**

What is the maximum legal bacterium count at which raw milk can be sold from the farm according to the Pasteurized Milk Ordinance (PMO)? **100,000 Bacteria per milliliter**

A veterinarian takes a sample for bacteria and finds streptococcus agalactiae and staphylococcus aureus. What did he test and what is he looking for? **Milk; Mastitis**

The freezing point of milk as determined by a cryoscope is used to determine the presence of what contaminant in milk? **Added water**

Research indicates that the teat canal is dilated for how long after milking? **2 Hours**

How long should a 1500 gallon bulk tank be agitated before being sampled? **At least 10 minutes**

What is an infection of the mammary gland called? **Mastitis**

A rancid flavor in milk is associated with which component? **Fat**

One of the recommended practices for the control of mastitis is the use of milking order groups. When should cows with mastitis be milked? **Last**

What is the maximum legal somatic cell count at which raw milk can be sold from the farm according to the Pasteurized Milk Ordinance (PMO)? **750,000 cells per milliliter**

What is the cow's first natural line of defense against mastitis infection? **Streak canal or Teat canal**

The streak canal is a cow's first natural line of defense against mastitis. What is a cow's second natural line of defense against mastitis? **Leucocytes**

What are mesophilic bacteria? **Bacteria that grow well between 50 and 110 degrees Fahrenheit**

What are psychrotrophic bacteria? **Bacteria that grow at relatively low temperatures (below 50 degrees Fahrenheit)**

Name 2 of the most common mastitis causing organisms: **Streptococcus agalactia; Streptococcus dysgalactia; Streptococcus uberis; Staphylococcus aureus; E. Coli; Klebsiela sp.**

What is the recommended goal for the percent of clinical cases of mastitis per month in a herd? **1 Percent**

What organization does the acronym NMC stand for? **National Mastitis Council**

How much money is spent annually to test and dump antibiotic contaminated milk? **\$50 Million**

Milk should be kept at what temperature to maintain the best quality? **Under 40 degrees Fahrenheit**

Proteases break down which milk component? **Proteins**

The PMO regulations govern the production, hauling, processing, packaging and storage of which grades of milk?
Only Grade A

What is the name used to describe the waxy substance found in the teat duct that limits bacterial growth and provides a physical barrier against bacteria? **Keratin**

White blood cells and epithelial cells are present in milk. What are these cells called? **Somatic cells**

Phospholipases break down which milk component? **Phospholipids**

What is the primary cause of high bacteria counts in milk? **Inadequate cleaning and sanitization of milk handling equipment**

What wax-like material is found in the teat canal? It helps keep infectious organisms out of the mammary gland?
Keratin

How far should the cannula be inserted into the teat canal when administering antibiotics? **1/8 inch or 3 millimeters**

Preliminary Incubation is used to measure which type of bacteria? **Psychotropic**

How would you identify the type of organism causing mastitis in your herd? **Take a milk sample and have it examined for bacteria**

How do the bacteria that cause mastitis enter the udder? **Through the teat canal**

What laboratory test is used to determine normal and rancid milk? **Acid degree value (ADV)**

Normally, what percent of total milk is residual? **10 - 12 Percent**

Lipases break down which milk component? **Fats**

How long should a 750 gallon bulk tank be agitated before being sampled? **At least 5 minutes**

Hydrolysis of fat in milk causes what off flavor to develop? **Rancidity**

Which bacteria counting method measure Psychotropic bacteria? **Preliminary incubation**

Dipping all teats is important to prevent mastitis. Name the 2 common halogens used in many effective teat dip formulations. **Chlorine & iodine**

Name 2 symptoms of clinical mastitis? **Flakes; Clots; Pus; Swollen; Hot quarter; Watery**

When speaking of mastitis, what does the acronym CNS stand for? **Coagulase negative staphylococcus**

When using teat dip as a predip, how long should the dip be left on before it is wiped off? **At least 30 seconds**

What does the acronym NCIMS stand for? **National Conference on Interstate Milk Shipments**

Bacteria in milk are often counted using the DMC procedure. What does the acronym DMC stand for? **Direct Microscopic Count**

The increased levels of deleterious enzymes in the milk from cows with mastitis come from 2 primary sources. Name 1 of the sources: **Neutrophils and Blood plasma (serum)**

A cow is considered to have a mastitis infection when her SCC score reaches what number? **5**

Maximum oxytocin concentration in blood occurs how soon after beginning of stimulation. **1 Minute**

Name 1 problem long premilking stimulation can contribute to. **Lower production, slower milking time, and higher SCC (mastitis problems)**

Staphylococcus aureus is a bacterial organism that infects which organ? **Udder**

Define stripping. **Removal of all milk possible at each milking**

How much do experts estimate as the cost of a clinical mastitis case? **\$100 - \$140**

When does the greatest mammary tissue growth occur during a cow's life? **During first pregnancy**

How often should teat cup liners generally be replaced? **Every 1000 - 1200 cow milkings**

What is the milk called which remains in the udder at the end of milking? **Residual milk**

The National Conference on Interstate Milk Shipments (NCIMS) meets biannually to consider proposals that will alter what document that is important to the dairy industry? **Pasteurized Milk Ordinance (PMO)**

What percentage of dried whey is protein? **70 - 75 Percent**

Which vitamin helps prevent the oxidized flavor in milk? **Vitamin E**

When cleaning a milking system, what is the minimum temperature generally recommended for the chlorinated cleaner cycle? **140 Degrees Fahrenheit**

When the wash solution water is draining from the tank at the end of the wash cycle, its temperature should be no lower than: 40, 50, 110, or 212 degrees Fahrenheit? **110 Degrees Fahrenheit**

In what year was the first meeting of the National Conference on Interstate Milk Shipments (NCIMS)? **1940**

Name 3 tests for mastitis. **California Mastitis Test (CMT); Wisconsin Mastitis Test (WMT); Somatic Cell count (SCC); Culture; Strip cup or Plate; Catalase Test; Whiteside Test; NaGase**

Name 3 groups of microorganisms that cause mastitis. **Streptococcus; Staphylococcus; Coliforms; Mycoplasma; Yeast; Molds; Nocardia; Pseudomonas**

Name 3 milk quality tests which can be conducted on raw milk. **Standard plate count; Preliminary incubation; Acid degree value; Titratable acidity; Freezing point; Sediment test; leucocyte count; Lab pasteurized count; Flavor; Antibiotic**

Name 3 contagious organisms that cause mastitis. **Staphylococcus aureus; Streptococcus agalactiae; Mycoplasma**

Milk plants may run many different tests on milk to determine its quality. **Name 3 of these tests. Flavor; Standard plate count; Preliminary incubation; Leucocyte count; Freezing point; Acid degree value (ADV); Sediment test; Antibiotic test; Laboratory pasteurized count; Titratable acidity**

Name 3 solutions commonly used as a teat dip on many farms? **Iodine; Chlorhexidine; Bronopol; Quaternary ammonia; DDBSA**

Name 3 methods used to detect subclinical mastitis. **California Mastitis Test (CMT); Wisconsin Mastitis Test (WMT); Somatic Cell Count (SCC)**

Give 3 reasons why antibiotics are not allowed in milk for human consumption. **Some people are allergic to antibiotics; Milk not suitable for cheese making; Bacteria may become resistant to antibiotic; Not a natural part of milk**

Name 3 components that increase in concentration in mastitic milk. **Lipase; sodium; Chloride; Immunoglobulins; Leukocytes; Trace minerals**

Name 3 nutrients that have been implicated in mastitis resistance. **Copper; Selenium; Zinc; Vitamin A; Vitamin E; Beta-Carotene**

Name 3 causes of milk rancidity? **Low herd nutrition; Mechanical agitation; Milk temperature changes (50-70° F); Freezing of milk; Enzymatic action of lipase; Mastitis; Cows late in lactation**

Mastitis causes an increase in several enzymes that reduce milk quality. Name 3 of the different types of enzymes that are increased: **Lipases; Phospholipids; Proteases**

Name 3 components that decrease in concentration in mastitic milk. **Lactose; Total proteins; Casein; Solids not fat; Total solids; Fat; Calcium; Phosphorus; Potassium**

Give 3 reasons why dry cow treatment is recommended for every cow at drying off. **Higher concentration of antibiotic(s); Antibiotic(s) remain longer; No discarding of saleable milk; Prevents new infections**

The PMO regulations are important to the dairy industry. Name 3 factors which they govern concerning Grade A milk. **Hauling; Packaging; Processing; Production; Storage**

Milk is tested routinely for a number of adulterants. Name 3 of these contaminants: **Aflatoxin; Antibiotics; Pesticides; Sanitizer; Water**

Name 3 of the 5 steps in a good mastitis control program. Use functionally adequate milking machines in the correct manner; Dip teats after milking with an effective product; Treat clinical cases immediately with recommended dosages; **Treat every quarter of every cow at drying off with an effective dry cow product; Cull chronic cows**

Name 3 factors you should consider when deciding whether or not to treat a cow with Staph. aureus mastitis. **Age; Stage of lactation; Production; Breeding value; Severity of infection**

Name the 3 requirements to achieve adequate, effective cleaning of milking systems. **Time; Temperature; Concentration**

Name 3 types of enzymes produced by Staph. aureus which add to its virulence. **Lipases, Proteases, Nucleases, Coagulases, Kinase**

Name 3 minerals that decrease in concentration as colostrum changes to milk. **Iron; Magnesium; Phosphorus; Sodium**

Miscellaneous

- T/F The Grade A milk inspector who periodically comes to your farm is an employee of your state. **True**
- T/F Most DHI samples are tested for butterfat using electronic equipment. **True**
- T/F Photographs are an approved method of identification for all dairy breeds. **False**
- T/F The mammary system refers to the cow's heart and blood circulation. **False**
- T/F Cattle are efficient resources, less than half of it is eaten as beef, but 96% of each animal is used. **True**
- T/F Colostrum is the first milk produced by a cow after calving. **True**
- T/F Jerseys have the highest percent butterfat of the 5 major dairy breeds in the United States. **True**
- T/F Lack of calcium in the human diet can cause osteoporosis. **True**
- T/F Many of the symptoms of overexposure to pesticides are similar to those of an upset stomach, colds or too much alcohol. **True**
- T/F Storing milk in plastic containers under fluorescent lights does not affect the taste of milk. **False**
- T/F Off-flavor is a major reason for declining milk consumption. **True**
- T/F The Holstein Association began using linear classification in 1983. **True**
- T/F Per person consumption of fat from dairy products has decreased during the past 20 years while total fat consumption has increased. **True**
- T/F The first semen to be exported to the United Kingdom was exported in 1985. **True**
- T/F All of the dairy breed organizations have a genetic recovery program whereby offspring from identified non-registered cows can eventually be registered. **False**
- T/F The acronym FCS stands for Feed Center Services. **False** (Farm Credit Services)
- T/F In addition to the magazine Hoard's Dairyman, there is also a Hoard's Dairyman dairy farm. **True**
- T/F The acute effects of pesticide exposure will show up within 12 hours. **True**
- T/F Some pesticides can be very rapidly absorbed through the skin. **True**
- T/F The Ayrshire breed was imported from France. **False**
- T/F After age 35, over 75% of all women in the United States consume less than the recommended amount of calcium daily. **True**
- T/F Approximately 95% of the world's production of milk is consumed in the country of production. **True**
- T/F Most of the milk produced in Wisconsin is used within the state. **False**
- T/F Holstein-Friesian is a major dairy breed that originated in the United States. **False**
- T/F All of the major breed organizations use a linear method of classification. **False**

T/F Holsteins have the lowest percent butterfat of the 5 major dairy breeds in the United States. **True**

T/F Milk is a low fat drink. **True**

T/F Dairy farmers supply 25% of the US beef. **True**

T/F Brown Swiss was imported from Switzerland. **True**

T/F Most people have never touched a live cow. **True**

T/F Colostrum is lower in protein percent than is normal milk. **False**

T/F Colostrum has higher levels of antibiotics than does normal milk. **False**

T/F Guernsey cattle were imported from the Island of Guernsey. **True**

T/F A heifer is a cow who has not reached her mature size or production. **False**

T/F Jerseys were first bred in New Jersey. **False**

T/F Most DHI samples are tested for butterfat using the Babcock test. **False**

T/F Casein is a chemical that is essential to digestion in the ruminant animal. **False**

T/F A heifer is a cow in her 1st lactation. **False**

T/F Milk is a high fat drink. **False**

T/F Consumers don't worry about how milk tastes. **False**

T/F On a per person basis cheese consumption in the United States is decreasing. **False**

T/F The Dairy Shrine is a stone monument honoring the dairy industry. **False**

T/F The average Jersey milk production in 1995 averaged over 16,000 pounds for the first time. **True**

T/F Photographs are an approved method of identification for Holsteins. **True**

T/F The richer developed countries such as the United States produce about 75% of the total world supply of milk.
True

T/F Membership in Dairy Shrine is for a lifetime. **True**

T/F The Dairy Shrine is an honorary organization. **False**

T/F The United States is second behind the European Economic Community (EEC or Common Market) in the donation of dairy products to developing countries. **True**

T/F The Holstein Association was the first to begin using linear classification in 1980. **False**

The Jersey breed was first brought to the United States in what year? **1815**

When were the first Guernsey cattle brought to the United States? **1831**

The American Jersey Cattle Club was founded in what year? **1868**

The American Dairy Association was formed in St. Paul, Minnesota in what year? **1940**

What year did the number of cows in the United States reach its peak? **1945**

In what year was the Brown Swiss Breeders Association established in the United States? **1880**

In what year was the first herdbook established for cattle? **1822**

What does the acronym CFU mean to a bacteriologist? **Colony forming units**

In what year were Brown Swiss cattle recognized as an official dairy breed in the United States? **1906**

In what year were the first records of semen exporting from the United States? **1972**

In what year did the Holstein Friesian Association begin registering Red & White individuals? **1969**

The Brown Swiss breed originated in Switzerland; which breed originated in Scotland? **Ayrshire**

When Alpha-S casein is removed from milk, what can the milk then be used in? **Baby formulas**

What produces lactic acid from lactose? **Bacteria**

To the nearest quart, what is the average per person consumption of beverages per day? **2 Quarts or ½ Gallon**

What are thermophilic bacteria? **Bacteria that grow well at temperatures between 110 and 140 degrees Fahrenheit**

Laboratory analysis of milk is conducted using tests that are certified by the AOAC. What does the acronym AOAC stand for? **American Organization of Analytical Chemists**

To which milk protein are babies most likely allergic? **Beta-lactoglobulin**

Teenagers need how many cups of milk each day: 2 cups, 4 cups, 6 cups, or 8 cups. **4 Cups**

What is the largest cell in the body of a mature cow? **Oocyte (egg)**

Where is the American Ayrshire Association located (city and state)? **Brattleboro, Vermont**

What is the name of the milk let-down hormone and which gland secretes this hormone? **Oxytocin; Posterior pituitary gland**

The Jersey breed originated on the Isle of Jersey; which breed originated in Switzerland? **Brown Swiss**

Where did the Guernsey breed originate? **Isle of Guernsey**

Which minerals are essential for proper bone development? **Calcium and Phosphorus**

What organization does the acronym USDA stand for? **United States Department of Agriculture**

What does the acronym DNA stand for? **Deoxyribonucleic acid**

When did the 5 major dairy breed associations form the Purebred Dairy Cattle Association (PDCA)? **1940**

When ranking, based on consumption, the major drinking groups (milk, beer, coffee and soft drinks), where does milk rank: first, second, third, or fourth? **Fourth**

Where does the United States rank in the consumption of ice cream and related products? **First**

Which 2 breeds of dairy cattle originated on islands in the English Channel. **Guernsey and Jersey**

Which 2 dairy trade organizations met together for their annual meetings for the first time in 1997? **NDHIA and NAAB**

Which breed has established a breed goal of 21,000 pounds of milk on a mature equivalent basis by the year 2100? **Brown Swiss**

Which bull stud has the stud code number 9? **Sire Power**

Which consumer group represents 26 percent of the population and consumes 46 percent of the fluid milk? **Children under 18**

Which of the following dairy products increased the most in per person consumption from 1971 to 1981: low fat milk, yogurt, sour cream and dips, or cheese? **Low fat milk**

What is the smallest breed of dairy cattle? **Jersey**

The Brown Swiss breed originated in Switzerland; which breed(s) originated on islands? **Jersey and Guernsey**

The Brown Swiss breed originated in Switzerland; which breed originated in Germany or Holland? **Holstein**

Which of the following is the most expensive source of calcium: nonfat dry milk, reduced fat milk, whole milk, or ice cream? **Ice cream**

The Brown Swiss breed originated in Switzerland; which other breed originated on the main European continent? **Holstein**

What enzyme is necessary for the digestion of milk sugar? **Lactase**

The Guernsey breed originated on the Isle of Guernsey; which 2 breeds originated on the main European continent? **Brown Swiss and Holstein**

The Guernsey breed originated on the Isle of Guernsey; which breed originated in Holland or Germany? **Holstein**

The Jersey breed originated on the Isle of Jersey; which breed originated in Holland or Germany? **Holstein**

The Jersey breed originated on the Isle of Jersey; which other breed originated on an island? **Guernsey**

What is the name of the biological process that results in the formation of body cells? **Mitosis**

What is the name given to the natural protective agent found in the intestines? **Mucin**

The letters NAAB stand for what organization? **National Association of Animal Breeders**

What organization does the acronym FCS stand for? **Farm Credit Services**

Which of the major breeds of dairy goats breed produces milk with the highest average butterfat? **Nubian**

Who is considered to be the founding father of the Dairy Shrine? **Joe Eves**

What is the name of the first bull to produce 1 million units of semen? **Fisher-Place Mandingo**

Spell Guernsey. **G-U-E-R-N-S-E-Y**

What does the acronym GATT stand for? **General agreement on tariffs and trade**

What 2 simple sugars make up lactose? **Glucose and Galactose**

What is the name of the official breed publication of the Holstein-Friesian Association? **Holstein World**

Which country is the largest recipient of dairy food aid? **India**

Which breed typically has the highest percentage of antibodies in colostrum? **Jersey**

When did the Dairy Shrine move to its current, permanent location? **1961**

Which 2 breeds produce milk with the highest milk fat percentage? **Jersey and Guernsey**

Which breed of dairy cattle originated in Scotland? **Ayrshire**

What organization does the acronym ABA stand for? **Ayrshire Breeders' Association**

Name 2 locations on the farm where toxic gases are most likely to be found. **Manure pit; Silo**

Name the 2 flies, which are common pests of dairy cattle and only deposit their eggs in fresh manure. **Face fly; Horn fly**

What is the cause of lactose intolerance? **Lack of the enzyme lactase in the small intestine**

The letters NDC stand for what organization? **National Dairy Council**

What does the term polled mean? **Naturally without horns**

Which major dairy breed originated in the United States? **None, they were all imported**

Where are the chromosomes located? **Nucleus**

Pesticides can enter the body through 4 major pathways. Name 3 of the paths: **Absorption through skin; and eyes; Breathing; Orally (Drinking or eating)**

The acute effects of pesticide exposure will show up within how many hours? **12 Hours**

It is a well-known fact that our bodies produce large quantities of cholesterol. Which organ produces cholesterol? **Liver**

It is estimated that you would need to eat over 6 pounds of cabbage or 27 pounds of potatoes to consume the same amount of what mineral that is found in milk? **Calcium**

What cell structure produces most of the energy in most types of cells? **Mitochondria**

Osteoporosis is a condition of older people, especially women, in which the bones become porous, weak and fragile. Which mineral in milk can help to prevent this condition? **Calcium**

What is cytoplasmic inheritance? **Genetic material is transmitted through the cytoplasm instead of the nucleus**

People need at least how many milligrams of calcium per day, according to the Food and Nutrition Board of the National Academy of Science. **1 Milligram**

Phosphate detergents create what problem in the environment? **They cause excessive growth of algae; Depleting the oxygen in lakes.**

Where did the Holstein breed originate? **Germany or Holland**

Where would you most likely find a melanocyte? **Hair Follicles**

What is the technical name for antibodies? **Immunoglobulins**

What is cystitis? **Infection of the bladder**

Where did the Jersey breed originate? **Isle of Jersey**

What does the term anaerobic mean? **Oxygen free (without oxygen)**

Approximately what percent of the food dollar that a consumer pays for milk goes back to the producer? **65 Percent**

What is the desired angle of the foot as viewed from the side? **45 Degrees Fahrenheit**

Define the term herbivore. **Animal whose diet consists primarily of plant material**

Spell Ayrshire. **A-Y-R-S-H-I-R-E**

What is the more common name for immunoglobulins? **Antibodies**

Generally the protein percentage in milk is: higher than, lower than, or equal to, the butterfat percentage. **Lower than**

Which breeds place heavy emphasis on PTA CY\$? **All colored breeds**

Milk producing cells secrete milk into what tiny structure in the udder? **Alveolus (alveoli)**

The organization does the acronym ADSA stand for? **American Dairy Science Association**

Under ideal conditions how long does it take bacteria to reproduce? **Approximately 20 minutes**

How many pounds of milk did it take to feed the average U. S. Consumer in 1996? **582 Pounds**

How many teeth does the cow have in the front of her mouth on the upper jaw? **None, she has a dental pad**

What 2 minerals, which are important to the formation of teeth and bones, are found in high concentrations in milk? **Calcium and Phosphorus**

What hormone causes milk let-down? **Oxytocin**

Which gland is responsible for mobilizing calcium from the bone? **Parathyroid gland**

What does the term aerobic mean? **With oxygen**

Under the new Farm Bill, what type of loan will replace the support program? **Recourse**

What are mammals? **Warm blooded animals that give birth to live young and produce milk**

Which method of applying manure to the land results in the greatest loss of nitrogen? **Irrigation**

Which of the following states has the highest percentage of cows on DHI? California, Minnesota, New York, or Wisconsin. **California**

The pH of the urine of the close-up, dry cow can indicate if the blood pH is too acid or too alkaline. What is an alkaline pH? **pH above 7.0**

The first Guernsey cattle were brought to the United States in 1831. When was the American Guernsey Cattle Club formed? **1877**

What is the name of the cow with the all-time fat records for 305 and 365 days for all breeds? **Breezewood Patsy Bar Pontiac**

What is the Environmental Protection Agencies (EPA) limit on nitrates for safe drinking water? **10 Parts per million (ppm)**

When was the National Dairy Promotion Board founded? **May; 1984**

Which of the following is not a breed of dairy goats: Nubian, French Alpine, Angora, Toggenburg, or Saanen? **Angora**

The Guernsey breed originated on the Isle of Guernsey; which other breed originated on an island? **Jersey**

What is the name of the natural protective substance that lines the inside of the streak canal? **Keratin**

A cow has had 5 bull calves in the last 5 years. She is now about to deliver her 6th calf. What is the probability that it will also be a bull calf? **50 Percent**

Pyrethrins and dichlorvos are examples of what type of chemical? **Insecticides**

The Guernsey breed originated on the Isle of Guernsey; which breed originated in Switzerland? **Brown Swiss**

The Jersey breed originated on the Isle of Jersey; which breed originated in Scotland? **Ayrshire**

A toxic substance produced by a mold is called? **Mycotoxin**

The pH of the urine of the close-up, dry cow can indicate if the blood pH is too acid or too alkaline. What is an acid pH? **pH below 7.0**

Name 1 factor that lowers the nutrient concentration of manure and reduces its value. **Bedding; Water**

A similar organism that causes what cattle disease causes Crohn's disease in humans? **Johne's disease (mycobacterium paratuberculosis)**

Coagulase, kinase and proteases are produced by Staph. aureus mastitis and are partially responsible for its virulence. What type of substance are they? **Enzymes**

Name the new Farm Bill of 1996? **Federal Agriculture Improvement and Reform Act**

Four out of 10 units of semen frozen in America goes to which 2 foreign countries? **Germany and Brazil**

According to the National Institute of Health (NIH) which group of individuals has the highest recommended daily calcium intake? **Teenagers, Adults over 65 (1500 milligrams)**

Two types of cell division occur in the bovine, mitosis and meiosis. What is the primary difference in the cells that result from these 2 types of cell division? **Cells that result from meiosis have half of the chromosomes as those from mitosis**

Where is the office of the American Jersey Cattle Club located? (city and state) **Reynoldsburg, Ohio**

Where is the office of the Holstein-Friesian Association located (city and state)? **Brattleboro, Vermont**

What organization does the acronym EPA stand for? **Environmental Protection Agency**

What organization does the acronym FDA stand for? **Food and Drug Administration**

What organization does the acronym AJCA stand for? **American Jersey Cattle Association**

What organization does the acronym HFA stand for? **Holstein-Friesian Association**

What is the name used to describe the general class of chemicals which are used for the control of insects?
Insecticides

Which method of manure storage results in the least loss of nitrogen? **Anaerobic pit**

Which method of manure storage results in the greatest loss of nitrogen? **Lagoon**

Which state leads in the production of butter? **Wisconsin**

Which state leads the country in the production of ice cream and related products? **California**

What is the name of the official breed publication of the American Guernsey Association? **Guernsey Breeder's Journal**

What is the name of the official breed publication of the American Jersey Cattle Club? **Jersey Journal**

Who is considered to be the first person to discover that bacteria cause food spoilage and disease? **Louis Pasteur**

Which state leads the nation in the total number of dairy cows? **Wisconsin**

Which state leads the nation in total milk production? **California**

The Pot O'Gold Heifer Sale is sponsored by which breed organization? **Jersey**

Which breed sponsors a program known as the Junior Bell Ringer Contest? **Brown Swiss**

How many times must pesticide containers be rinsed before they can be safely discarded? **3 Times**

Properly rinsing pesticide containers 3 times removes what percentage of the pesticide? **Over 95 percent**

What state has the most dairy farms? **Wisconsin**

Which dairy breed has the largest number of animals registered in the United States? **Holstein**

The Guernsey breed originated on the Isle of Guernsey; which breed originated in Scotland? **Ayrshire**

Dairy cattle belong to a class of animals called what? **Ruminants**

What month of the year is National Dairy Month? **June**

A cow has had 5 bull calves in the last 5 years. She is now about to deliver her 6th calf. What is the probability that it will also be a heifer calf? **50 Percent**

Of the many minerals in milk, which is the hardest to replace if milk and dairy foods are not a part of the diet?
Calcium

The Jersey breed originated on the Isle of Jersey; what is the mature weight of a Jersey cow? **1000 Pounds**

What is the name of the Jersey breed organization in the United States? **American Jersey Cattle Association**

Who was the founder of Hoard's Dairyman magazine? **W. D. Hoard**

Milk is sold by the hundredweight from the farm and by the gallon from the store. What is the weight to the nearest tenth of a pound of a gallon of milk? **8.6 Pounds**

Which mineral is mainly provided by milk in the U.S. diet? **Calcium**

Which is the oldest of the dairy breeds? **Brown Swiss**

The letters PDCA stand for what organization. **Purebred Dairy Cattle Association**

What is the more common name for erythrocytes? **Red blood cells**

What is the name given to the first milk produced by a cow after she calves? **Colostrum**

Which breed (breeds) object to solid colors? **Holstein and Guernsey**

To what would a dairy producer be referring if they used the term colostrum? **First milk produced by a cow after calving**

What is the largest component of milk? **Water**

Which breed produces milk with the lowest average percent butterfat? **Holstein**

Which vitamin is essential for the efficient use of calcium and phosphorus in bone growth? **Vitamin D**

Of the various agricultural enterprises in the U.S., where does dairying rank? first, second, third, or fourth? **Third**

What do we call a paper that accompanies a purebred animal and certifies his or her parentage? **Registration paper**

What colors are the dairy cows that originated in Germany or Holland? **Black and white; Red and white (both needed)**

How many teeth does a mature dairy cow have? **32 Teeth**

The Klussendorf Trophy is presented to the dairy cattle showman who excels in endeavor, ability and sportsmanship. It is presented during which show? **World Dairy Expo**

The Jersey breed originated on the Isle of Jersey; which 2 breeds originated on the main European continent?
Brown Swiss and Holstein

What is colostrum? **First milk produced by a cow (3-5 days) after calving**

What can the dairy cow and plants both make from some forms of nitrogen? **Protein**

Which is the only cell that has no nucleus? **Red blood cell or Erythrocyte**

If one mentioned alveoli, streak canal, and cistern, what would they be talking about? **Udder**

What does the acronym BST stand for? **Bovine somatotropin**

Which of the following breeds do not have identification programs for non-registered dairy cows: Ayrshire, Brown Swiss, Holstein, Jersey, or none of the above? **None of the above**

Henry M. Clark of Belmont, Massachusetts is credited with bringing the first cattle of which breed to the United States? **Brown Swiss**

What does typing a message in all capital letters indicate when communicating by way of email? **That you are shouting**

Which country is the major competitor of the United States for semen exports? **Canada**

Numerous abbreviations are used in communicating by way of email to save time. What does the acronym FAQ stand for? **Frequently asked questions**

All farm equipment should have the slow-moving vehicle (SMV) emblem. What color should it be? **Orange center and red border**

The eating of which dairy product has been shown to help prevent tooth decay? **Cheese**

What is milk sugar called? **Lactose**

What is the name of the protein substance produced by the body in response to an antigen? **Antibody**

How many pecks of dry measure equals a bushel in the United States? **4 Pecks**

During which month is National Agriculture Day celebrated? **March**

What is the term that is used to describe animals that give birth to live young and suckle their offspring after birth? **Mammals**

What by-product comes from the stomachs of cattle is used to help babies digest milk and is important in making cheese? **Rennet (Rennin)**

When talking about diets, what do the letters RDA stand for? **Recommended daily (dietary) allowance**

What is the term that literally means "in glass"? **In vitro**

What is the term that literally means "in the body"? **In vivo**

Which breed organization was the first to sign a cooperative agreement with the USDA to provide sire indexes? **Holstein-Friesian Association**

Which breed organization was the first to register and transfer animals by computer data processing? **American Guernsey Association**

The letters DMI stand for what organization? **Dairy Management Inc.**

The letters NDB stand for what organization? **National Dairy Board**

What does the term per capita mean? **Per person**

What structure connects one bone to another bone? **Ligament**

What structure connects a muscle to a bone? **Tendon**

The cow is considered to be homeothermic. What does the term homeothermic mean? **Body temperature is maintained nearly constant at all times**

The dairy cow is didactyl. What does this term mean? **2 Toes on each foot**

What structure connects the oral cavity with the lungs? **Trachea**

What structure connects the oral cavity with the stomach? **Esophagus**

In computer terms what does CPU stand for? **Central Processing Unit**

In computer terms what does "hardware" mean? **Computer itself and related equipment**

What organization does the acronym IDF stand for? **International Dairy Federation**

In which stage of development do face flies hibernate during the winter? **Adult**

In which stage of development do hornflies hibernate during the winter? **Pupa**

What organization has the following slogan "Know your semen supplier"? **National Association of Animal Breeders (NAAB)**

How much nitrogen is available in the manure produced by a 1500-pound cow in one year? **Approximately 225 pounds**

What 2 minerals are used to build bones in the body? **Calcium and Phosphorus**

Milk and milk products are the main food source of which important mineral? **Calcium**

What is the most expensive item on a typical pizza? **Cheese (42 Percent of the cost)**

Which state produced the most total milk in 1997? **California**

Your cow is in lateral recumbency, what is she doing? **Lying flat on her side**

Name the breed that produces milk with highest average solids-not-fat content. **Jersey**

Animals that derive their nutrition from meat are called carnivores. What is the term that describes the dairy cow? **Herbivore**

An entomologist would be most interested in studying what around a dairy farm? **Flies**

How many teeth does the cow have in the front of her mouth on the lower jaw? **8 Teeth**

A pH of 7 is neutral. What is the term for a pH greater than 7? **Basic**

Many older people (especially women) have a condition of the bones in which calcium diffuses out of the bones. What is this condition called? **Osteoporosis**

What is the name of the computer hardware that allows computers to communicate with each other over regular phone lines? **Modem**

Which state produced the most milk per cow in 1997? **Arizona**

What is the primary acid produced by the bacteria in silage inoculants? **Lactic acid**

A pH of 7 is neutral. What is the term for a pH less than 7? **Acidic**

What organization does the acronym AFBF stand for? **American Farm Bureau Federation**

Which immunoglobulin is found in the highest concentration in colostrum? **IgG**

Define the term carcinogenic. **Causes cancer**

What does the acronym CFU stand for when measuring yeasts and molds? **Colony forming units**

How long do bacteria need in order to adapt to a new environment before they begin rapid growth? **About 4 hours**

How many megabytes make up a gigabyte? **1000**

Lactose intolerance occurs when humans do not produce enough of which enzyme? **Lactase**

What structure separates the thoracic cavity from the abdominal cavity? **Diaphragm**

How many pair of ribs do dairy cows have? **13 Pair**

What structure connects 1 bone to another bone? **Ligament**

What process has been recently approved by the Food and Drug Administration (FDA) for the treatment of beef and other red meat for the purpose of killing bacteria? **Irradiation**

What structure surrounds a joint and provides lubrication to the joint? **Joint capsule**

What is the technical term for the bone that connects to the ribs on the ventral side of a cow? **Sternum**

What does the acronym LAN stand for when talking about computer systems? **Local area network**

What is the name of the structure that conveys nerve impulses from the brain to the individual nerves? **Spinal cord**

What anti-carcinogen found in milk is represented by the acronym CLA? **Conjugated Linoleic Acid**

What is the Hoard's Dairyman web site address? **www.hoards.com**

Dairy farmers supply what percent of the U.S. beef supply? **25 Percent**

What is the major milk carbohydrate? **Lactose**

According to the Food and Nutrition Board of the National Academy of Science, people need at least how many milligrams of calcium per day? **1 Milligram**

What is the name of the bill signed in California that prohibits slaughterhouses, stockyards or auctions from buying, selling or receiving animals unable to walk without assistance? **Downer cow bill**

What is the primary milk protein? **Casein**

Which bull stud has the stud code number 7? **Select Sires**

Which breed averages producing milk with the highest percent butterfat? **Jersey**

What does the acronym SMV stand for? **Slow moving vehicle**

Lactose is a disaccharide. What is a disaccharide? **Sugar composed of 2 simple sugars**

According to the National Dairy Council, what percentage of the cholesterol in your body comes from milk: 1-2%, 5-6%, 19-22%, 65-71% or 85-90%? **5 - 6 Percent**

The National Council on Interstate Milk Shipments (NCIMS) makes recommendations to the FDA concerning dairy products. How often do they meet? **Every other year**

How many gallons of blood flow through a cow's udder to produce 1 gallon of milk? **350 gallons (300-500)**

What is the 'foster mother' of the human race? **Cow**

Certified Semen Sales (CSS) is a subsidiary of what organization? **National Association of Animal Breeders (NAAB)**

Give 2 reasons to incorporate manure immediately after land application. **Reduce nutrient loss; Reduce odor**

Pizza Hut uses what percent of the milk produced in the US for cheese? **2 Percent**

Lactose is a disaccharide. What 2 simple sugars combine to form lactose? **Glucose and Galactose**

According to the National Dairy Council, what percentage of the cholesterol in your body does the body itself produce: 1-2%, 5-6%, 19-22%, 65-71% or 85-90%? **65 - 71 Percent**

If a person used the following terms: saturated, unsaturated, and polyunsaturated, to what would they be referring? **Fats**

Where is the headquarters for the Ayrshire Breeders' Association located (city and state)? **Brattleboro, Vermont**

Where is the office of the American Guernsey Association located (city and state)? **Reynoldsburg, Ohio**

What is the name given to the area of transition between the skin and the hoof? **Coronary band**

Name the major ligaments of the cow's foot. **Cruciate and Collateral ligaments**

What does the acronym ELISA stand for? **Enzyme linked immunoassay**

What are Nubians, Alpines, La Manchas and Toggenburgs? **Dairy goats**

What cell is characterized as having no nucleus and does not divide? **Erythrocyte (red blood cell)**

3 different types of mites can cause mange or scabies. Name the 3 types. **Chorioptic; Psoroptic; Sarcoptic**

Name 3 research priorities that have been established by the National Dairy Council (NDC). **Bone health; Hypertension; Cardiovascular disease; Nutrient bioavailability and interactions; Cancer; Oral Health; Dairy food sensitivity; Various health issues**

Name the 4 classes of immunoglobulins. **IgA; IgE; IgG; IgM**

Name the 5 major breeds of dairy cattle in the United States. **Ayrshire; Brown Swiss; Guernsey; Holstein; and Jersey**

Name the 4 phases in the growth curve of bacteria. **Lag phase; Growth phase; Stationary phase; Death phase**

Name 3 bull studs. **ABS Global; Accelerated Genetics; Alta Genetics; Genex/CRI; Select Sires; Semex; Sire Power**

Name the 4 stages of a fly's life cycle. **Egg; Larva; Pupa; Adult**

Name 3 components that decrease in concentration as colostrum changes to milk. **Antibodies; Ash; Chlorine; Calcium; Fat; Iron; Magnesium; Phosphorus; Protein; Sodium; Vitamins A & D; Total solids**

Name 3 of the top 5 states for total milk production in 1995. **California; Pennsylvania; Minnesota; New York; Wisconsin**

Name 3 breeds of dairy goats. **Nubian; Alpine; Saanen; LaMancha; Toggenburg; Norska and Murciana**

Name the 3 main parts of a cell. **Nucleus; Cytoplasm; Cell wall (membrane)**

Name 3 methods of fly control. **Biological; Chemical; Cultural (management techniques)**

Name 3 of the 4 stages in the life cycle of the house fly. **Egg; Larvae (maggot); Pupa; Adult**

Name 3 types of silos. **Concrete stave; Poured concrete; Bunker; Trench; Bag; Oxygen-limiting**

Name 3 minor dairy cattle breeds that are NOT members of the Purebred Dairy Cattle Association. **Red poll; Red Danish; Kerry; Dexter; Dutch Belted; Devon**

Name 3 hormones produced by the pituitary. **Follicle stimulating hormone (FSH); Luteinizing hormone (LH); Thyroid stimulating hormone (TSH); ACTH; Growth hormone (GH)**

Name 3 animals other than the cow that are used to produce milk for human consumption throughout the world. **Human; Goat; Sheep; Camel; Water buffalo; Horse; Yak; Reindeer**

Name 3 types of microorganisms. **Bacteria; Yeast; Molds; Viruses; Protozoa**

Give the common names for the 3 stages of a female dairy animal's life from birth through the productive years. **Calf; Heifer; Cow**

Name 3 factors to consider when purchasing cropland. **Location; Fertility and pH; Soil type**

Name 3 of the organ systems found in the body. **Circulatory; Respiratory; Integumentary; Nervous; Digestive; Endocrine; Reproductive; Skeletal; Muscular**

Name 3 factors which affect the nutritive value of manure after it is applied to the land. **Type of ration fed; Method of collection; Method of storage; Amount of added feed; Bedding and water; Time of application; Method of application; Soil characteristics; Crop; Climate**

Name 3 locations within the body you would expect to find the cells that produce immunoglobulins. **Bone marrow; Thymus; Lymph nodes; Spleen; Liver; Gut**

Name the 3 factors that all organisms require in order to grow. **Nutrients; Moisture; Suitable temperature**

Name 3 factors which can cause the normal body temperature of a cow to vary. **Age; Season; Time of day; Exercise; Ingestion of water**

Name 3 medications (drugs) made from by-products of cows. **Insulin; Epinephrin; Estrogen; Thrombin; Heparin**

Name 3 factors that influence milk composition. **Breed; Genetics; Feeding or nutrition; Mastitis; Age; Stage of lactation; Season; Health**

Nutrition

- T/F A milking cow should receive more calcium than phosphorus in her diet. **True**
- T/F A pound of fat contains about 2.25 times more energy than does a pound of carbohydrate. **True**
- T/F A pound of high moisture corn contains the same nutrients as a pound of dry corn. **False**
- T/F Too low of a level of manganese in the diet leads to grass tetany or grass staggers. **False**
- T/F The protein requirements of dry cows are higher than those of milking cows. **False**
- T/F Brewers' grain is a by-product feed that results from the making of beer. **True**
- T/F Cows can pick and choose the correct vitamins and minerals to balance their ration when the vitamins and minerals are offered free choice. **False**
- T/F Crude protein is determined by multiplying a factor times the nitrogen composition of a feed. **True**
- T/F Dry cows should always be fed separately if the milking herd is group fed. **True**
- T/F Crude protein is determined by multiplying a factor times the nitrate composition of a feed. **False**
- T/F Dried beet pulp is a poor feed because cows don't like to eat it. **False**
- T/F Dry cows should be fed a ration which is different from that fed to the lactating cows. **True**
- T/F Soybean meal is a poor source of protein. **False**
- T/F Milking dairy cows that are fed salt free-choice in block form may not have enough time to consume the needed amounts. **True**
- T/F The mineral selenium is required by dairy cattle. **True**
- T/F The quality of the forage has little to do with how much a cow eats or how much nutritional value it has. **False**
- T/F The ration a cow eats can affect the butterfat content of her milk. **True**
- T/F The rumen & reticulum are not developed in a newborn calf. **True**
- T/F Free-choice feeding of salt in block form to milking dairy cows is considered a good management practice. **False**
- T/F High moisture corn is high in fiber. **False**
- T/F High moisture corn is low in fiber. **True**
- T/F TDN stands for Total Dietary Nutrition. **False**
- T/F Bakery products should not be fed to cow because of their high pesticide content. **False**
- T/F Cows may require more potassium in their rations during hot weather. **True**
- T/F A dairyman should test his forage before calculating his cow rations. **True**

- T/F Forages are low in fiber. **False**
- T/F A greater percentage of a dairy cow's diet, on the average, consists of forages. **True**
- T/F Adding 1-1.5 pounds of fat to a dairy ration is a sound management practice. **True**
- T/F Anhydrous ammonia can be used to increase the non-protein nitrogen content of silage and hence the protein value. **True**
- T/F A Pearson square is a type of calf stall. **False**
- T/F As milk yield increases, feed efficiency also improves. **True**
- T/F There is a requirement for fat in a cow's diet? **False**
- T/F The normal pH of the rumen in high producing cows is 5.0 - 5. **False** (6.0 - 6.3)
- T/F Feed is digested in the rumen by bacteria and protozoa. **True**
- T/F Minerals, especially trace minerals such as selenium, are toxic at high levels of intake. **True**
- T/F Corn is an excellent source of energy in a ration. **True**
- T/F It is necessary to run a forage test on silage to adequately balance a ration. **True**
- T/F Heated soybeans contain a substance that inhibits protein digestion in the small intestine. **False**
- T/F Too low of a level of magnesium in the diet leads to grass tetany or grass staggers. **True**
- T/F Bakery wastes are good feed by-products to use in dairy rations. **True**
- T/F Dairy cows can produce protein from a non-protein nitrogen source in the ration. **True**
- T/F Corn silage is a high-energy forage. **True**
- T/F It is not necessary to run a forage test on silage. **False**
- T/F Cows can adequately balance their rations with their needs if given a choice. **False**
- T/F If cows eat newspaper; they will get lead poisoning from the ink on the paper. **False**
- T/F As milk yield increases, feed efficiency becomes worse. **False**
- T/F Problems may occur in mixing & handling haylage if particles are too long. **True**
- T/F Pasture, hay and silage make up the concentrate portion of the cows ration. **False**
- T/F Proper heating of soybeans can more than double available by-pass protein. **True**
- T/F Protein that is not degraded in the rumen is called by-pass protein. **True**
- T/F Free-choice mineral feeding is a good way to insure that cows get the minerals they need. **False**
- T/F High quality forage is a low cost source of protein and digestible energy for dairy cows. **True**
- T/F Dry cows should be fed a ration that is identical to that fed to the lactating cow. **False**

T/F Cows fed a complete or blended ration produce less than cows fed individually. **False**

T/F The corncob is a poor feedstuff for dairy cows and should not be included in the ration. **False**

T/F The small projections in the small intestine are called villages. **False**

Which is better: feeding minerals free choice (loose) or adding minerals to the ration? **Adding minerals to the ration**

When balancing rations, is silage considered roughage or concentrate? **Roughage**

Which of the fiber analysis procedures has the lowest values? **Crude fiber**

What does the term positive energy balance mean? **Cow is consuming more calories than she needs for maintenance and production**

What percentage, on a dry matter basis, of the forage should be at least 1-1/2 inches? **15 to 20 percent**

What is the recommended percent crude fiber in a total ration? **17 Percent**

What is the ratio of milk to grain often used as a guide for feeding dairy cows? **2 1/2 - 3 pounds of milk per 1 pound of grain**

What percent of a dairy cow's ration is usually protein? **12-18 Percent**

The stomach of the ruminant has how many compartments? **4**

Rations for high producing cows should contain what percent non-fiber carbohydrates? **34-40 Percent**

What is the primary function of the omasum? **Dehydration of partially digested food**

What is the second or "honeycomb" portion of a dairy cow's stomach? **Reticulum**

Name the 2 major minerals for which a ration is most often balanced. **Calcium and Phosphorus**

When balancing a ration for a dairy cow, several nutrients must be considered. Name 3 of these nutrientsP: **Energy; Protein; Minerals; Vitamins; Fiber; Dry Matter**

When comparing protein to carbohydrate, how much energy is contained in a pound of protein relative to the amount in a pound of carbohydrate? **The same amount**

When discussing nutrition, the term "NRC recommendations" is often used. What do the letters NRC stand for? **National Research Council**

Which of the following compounds are fed as buffers: Sodium bicarbonate, magnesium oxide, sodium sesquicarbonate, none of them or all of them? **All of them**

Why is it important to feed dry cows separately from the milking herd? **Keep dry cows from becoming too fat; They have different mineral requirements**

What do NE-m, NE-g, NE-l, stand for in dairy cattle nutrition? **NE-m = net energy for maintenance; NE-g = net energy for growth; NE-l = net energy for lactation**

The liver uses fatty acids to manufacture what product? **Triglycerides**

The major compartment of a mature cow's stomach is the: rumen, reticulum, omasum, or abomasum? **Rumen**

In a mature dairy cow, which compartment of the stomach has the largest volume? **Rumen**

You purchase an 18% concentrate from your local feed supplier. How many pounds of protein are contained in 100 pounds of the concentrate? **18 Pounds**

What procedure is used to determine the energy value of a feedstuff? **Heat produced when the feed is burned in a bomb calorimeter**

Why would one consider adding fat to a dairy cows ration? **Increase the energy content**

Name 2 of the major trace minerals: **Iron; Zinc; Copper; Manganese; Sulfur; Sodium**

Milk fever is a metabolic disease that results from insufficient levels of what mineral in the blood? **Calcium**

Name 2 gases (other than ammonia) produced in the stomach of a ruminant. **Methane; Carbon dioxide**

The most acute type of bloat probably occurs when cattle consume which 2 pasture forages? **Alfalfa and Clovers**

Which of the fiber analysis procedures has the largest values? **Neutral detergent fiber**

What kinds of organisms are present in the rumen to help digest fiber? **Bacteria and Protozoa**

Ionophores alter rumen fermentation by boosting the production of which volatile fatty acid? **Propionic acid**

Is iodine a vitamin or a mineral? **Mineral**

What is dry matter? **Material that remains after all of the water is removed**

What are the 2 primary gases produced during the condition known as bloat? **Methane; Carbon dioxide**

Rumen-protected amino acids are able to enhance which milk component? **Milk protein %.**

What is the definition for "cation"? **Mineral that has a positive electrical charge**

Triglycerides are manufactured in the liver from what precursor? **Fatty acid**

What 2 factors determine the nutrient intake of a cow? **Feed intake or consumption; Feed digestibility**

Pelleting of poor quality forage will generally: increase consumption, increase rate of passage, decrease rumination time, decrease roughage value, or all of the above? **All of the above**

What is usually fed in a computer feeder? **Grain or concentrate**

What is the ideal rumen pH? **6.2 - 6.8**

Define the term TMR. **Total mixed ration**

Define the term dry matter intake. **Amount of dry matter a cow will consume in a 24 hour period**

On the average, how many hours per day does a cow spend eating? **8 - 9 Hours**

Feeding additional niacin during the last 2 weeks before calving can help control what disorder? **Ketosis**

What is the function of sodium sesquicarbonate in a dairy cow's ration? **Buffer**

For dairy cattle, which nutrient is the cheapest, most important and required in the largest quantity? **Water**

For what function would you use a Pearson's Square? **Ration balancing**

Name the 2 pasture forages that probably cause the most acute types of bloat. **Alfalfa and Clovers**

Gossypol is a chemical compound found in some feeds that has been found to be toxic to some livestock. Name a common feed ingredient that contains gossypol. **Cottonseed meal; Whole cottonseed**

How do ionophores work? **By altering bacterial fermentation in the rumen**

How do the rumen bugs affect carbohydrates, proteins, & fats when converting them to usable food for the cow?
Converts carbohydrates to acids (acetic; propionic; butyric) that are absorbed; Adds hydrogen to fats; Converts some protein to ammonia

How many pounds of dry matter intake is needed for a 1,400 pound cow milking 90 pounds: 5 - 7 pounds, 45 - 46 pounds, 51 - 53 pounds or 101 -103 pounds? **52 to 53 pounds**

What does high milk urea nitrogen (MUN) indicate? **Excessive levels of ammonia in the rumen**

What does the acronym UIP stand for when talking about nutrition? **Undegradable intake protein**

What does the acronym VFA stand for when talking about nutrition? **Volatile fatty acid**

What effect does adding fat or oil to milk have on the percent of milk protein? **Reduces milk protein percent**

What feed supplement contains nitrogen, but cannot be converted to protein until calves begin to ruminate (chew cud)? **Urea (any NPN)**

What is a good source of soluble nitrogen that is rapidly available in the rumen? **Urea**

What is by-pass protein? **Protein that is rumen undegradable**

What is the definition for "anion"? **Mineral or mineral complex that has a negative electrical charge**

Name a non-protein nitrogen feed ingredient. **Urea; Diuracil; Dicyanodiamide**

What is the most important nutrient, in pounds consumed, in a dairy cow's ration? **Water**

What is the best method of insuring that a dairy cow receives the proper amounts of the various minerals? **Adding them to the ration**

What does the acronym NDF stand for when talking about nutrition? **Neutral detergent fiber**

Where are the long chain fatty acids in the cow's diet absorbed? **Small intestine**

Which of the following minerals is generally added to dairy rations in the largest quantities: calcium, phosphorus, potassium, or magnesium? **Calcium**

Your cows are on a high moisture corn and supplement diet with limited haylage. Your fat test is very low. What can you do? **Feed hay or other roughage; Feed sodium bicarbonate**

What are the 2 buffering compounds found in sodium sesquicarbonate? **Sodium bicarbonate and Sodium carbonate (soda ash)**

What is generally considered to be the maximum percentage of grain that should be included in a dairy cow's ration?
60 Percent

Research indicates that cows with rumen pH below 5.5 suffer from what condition? **Subacute rumen acidosis**

What should the ADF & NDF percentages in the dairy cows ration be to maintain good rumen digestion? **ADF - 21%; NDF - 28 to 32%**

A "by-pass" protein is a protein source that avoids breakdown in which portion of the digestive system? **Rumen**

Dry cows need 0.8 percent of the element represented by the letter K in their diet? What element does the letter K represents? **Potassium**

Fats are a very dense energy source and supply cows with fat-soluble vitamins. Name the fat-soluble vitamins?
A; D; E; K

Adding fat is a useful method of increasing the concentration of one component of a ration. What is the component?
Energy

Supplementing anionic salts during the dry period may be effective in preventing which metabolic disease? **Milk fever (parturient paresis)**

What is the volume, in gallons, of a mature cow's rumen? **25 Gallons**

Which of the volatile fatty acids produced in the rumen is useful in the production of milk fat? **Acetic acid**

Fat contains more energy than other feed sources. Relative, to carbohydrates and proteins how much more energy does fat have per gram? **2.25 Times**

On a dry matter basis, a ration for a high producing dairy cow should contain what percent crude protein? **17 - 18 Percent**

What does the term negative energy balance mean? **Cow is consuming fewer calories than she needs for maintenance and production**

The dairy cow has the ability to utilize some of the plant carbohydrates as an energy source which animals with simple stomachs cannot. Name one of these carbohydrates? **Cellulose; Hemicellulose**

Amino acids are classified as essential and nonessential. What does the term essential mean? **Amino acids are required in the diet because the cow cannot make her own**

Name 1 anionic salt that can be fed to dry dairy cows to aid in the prevention of milk fever. **Ammonium chloride; Magnesium sulfate; Aluminum sulfate**

What are the small projections in the small intestine called? **Villi**

Which nutrient makes up 75 percent of the dry matter in plants? **Carbohydrates**

Name 1 situation in which milk can become tainted with a fishy taste when feeding fishmeal. **Gross overfeeding of fishmeal; Feeding rancid fish meal**

What are a cow's 2 sources of amino acids? **Rumen undegraded proteins; Rumen microbes**

What are the basic building blocks for proteins? **Amino acids**

Which portion of a dairy cow's stomach is called the honeycomb? **Reticulum**

The disease ketosis is associated with a low dietary level of which nutrient? **Energy**

Which is the major compartment of a mature cow's stomach? **Rumen**

What does the acronym TMR stand for in relation to feeds? **Total mixed ration**

What does the acronym TDN stand for? **Total digestible nutrients**

What is the name given to mineral elements that have a negative charge? **Anions**

What is the name given to mineral elements that have a positive charge? **Cations**

What is the dairy feed which is produced in the manufacturing of beer? **Brewer's grain**

What is the dairy feed which is produced in the manufacturing of whiskey or grain alcohol? **Distiller's grain**

Which ruminant stomach consists of a network of tissue arranged in honeycomb fashion? **Reticulum**

Which stomach compartment is sometimes called "many plies"? **Omasum**

Which of the 4 compartments of a cow's stomach is called the "True stomach"? **Abomasum**

Anorexia means the cow: has breathing problems, refuses to eat, is constipated, or none of the above. **Refuses to eat**

What is the primary substance that maintains rumen pH in the dairy cow? **Saliva**

The majority of the total digestion in a mature cow occurs in which compartment? **Rumen**

Adding fat is a useful method of increasing the concentration of one component of a ration. Is the component protein, energy, starch, vitamins or minerals? **Energy**

What does urea substitute for in the diet? **Protein**

Which bovine stomach is highly acidic? **Abomasum**

Niacin is sometimes added to rations to help prevent which metabolic disease? **Ketosis**

What feedstuff should not be fed with urea because of the presence of urease, which breaks down the urea into ammonia? **Raw soybeans**

Give 1 function of saliva. **Adds water to rumen contents; Begins digestion; Buffers rumen pH**

Why should wheat not be finely ground when used in dairy cow rations? **Becomes pasty and reduces intake**

Name 1 of the 3 volatile fatty acids produced in the rumen. **Acetate, Propionate, Butyrate**

Why is fat added to dairy cattle rations? **Boost the concentration of energy**

What is the most important nutrient in all dairy rations? **Water**

Which compartment of the cow's stomach is most like the human stomach? **Abomasum**

What are the limiting amino acids in corn & alfalfa? **Corn - lysine; Alfalfa - methionine**

On the average, meat & bone meal contains what % protein? **50 Percent**

Which component of a dairy cow's ration is the primary source of acid detergent fiber and neutral detergent fiber?
Forage

Lack of what mineral leads to grass tetany or grass staggers? **Magnesium (Mg)**

How many kilocalories of energy are provided by a gram of protein? **4 Kilocalories**

What is the common name for the feed additives used to help maintain rumen pH? **Buffers**

Which forage analysis procedure is the best indicator of forage intake? **Neutral detergent fiber**

Which forage analysis procedure is used to predict digestibility and energy content of forages? **Acid detergent fiber**

When someone says they feed a TMR, what does TMR stand for? **Total mixed ration**

Why is it a good recommendation to limit the intake of salt during the dry period? **Reduce the incidence or severity of udder edema**

Why is it a good recommendation to limit the intake of supplemental calcium during the dry period? **Reduce the incidence of milk fever**

Which volatile fatty acid is a primary source of energy & milk fat? **Acetic**

Which volatile fatty acid is produced from the digestion of starch & grain? **Propionic**

What does the acronym ME stand for when talking about nutrition? **Metabolizable energy**

What does the term ad libitum mean? **Free Choice**

What mineral other than salt (NaCl) is added in the greatest quantities to the ration of a lactating dairy cow?
Calcium

What mineral other than salt should be increased in a dairy cow's diet during periods of heat stress? **Potassium**

What does the acronym DIP stand for when talking about nutrition? **Degradable intake protein**

What does the acronym NIR stand for? **Near Infrared Reflectance**

What does the acronym REP stand for in dairy cattle nutrition? **Rumen Escape Protein**

What metabolic disease can result when a cow receives insufficient energy in her ration? **Ketosis**

What metabolic disorder often occurs when a dairy cow eats too much grain? **Acidosis**

How will feeding a ration that will increase acetic acid production affect butterfat production? **It will increase it**

What are the 2 main nutrients that supply energy to cows & heifers? **Carbohydrates and Fats**

What is the more scientific name for cud chewing? **Rumination**

What is the primary use of buffers in dairy rations? **Maintain rumen pH within the range preferred by the microbes**

Limestone is added to many dairy rations. For what purpose is it added? **Source of calcium**

How many hours per day should a cow chew her cud to adequately buffer the rumen? **11 to 12 hours**

Vitamin D increases the absorption of what mineral from the digestive tract? **Calcium**

Crude protein is determined by multiplying a factor times the nitrogen composition of a feed. What is the factor?
6.25

Niacin is sometimes given to cows during the early postpartum period to help prevent which metabolic disease?
Ketosis

Which vitamin increases the absorption of calcium from the digestive tract? **Vitamin D**

What is the primary benefit of feeding fat to dairy cows? **Increases the energy concentration in the ration**

What does the acronym RDP stand for in dairy cow nutrition? **Rumen degradable protein**

On the average, amino acids contain what percent nitrogen? **16 Percent**

Name an advantage of feeding high moisture grains. **Reduced drying costs; reduced harvesting losses**

What is the name for the building blocks of protein? **Amino acids**

What 4 elements are present in all proteins? **Hydrogen; Oxygen; Carbon; Nitrogen**

What is the term for feed additives that are used to help maintain rumen pH? **Buffers**

Normal rumen pH is 6.0, below this fiber digesting bacteria slow down and starch digesting bacteria take over.
What is the resulting abnormal condition? **Acidosis**

Which forage component is probably the best indicator of quality? **Fiber**

Your feed salesman states that there is no NPN in the feed that he supplies. What do the letters NPN stand for?
Non-protein nitrogen

Which vitamin is added to rations to improve utilization of fat? **Niacin**

What is the basic structural unit of proteins? **Amino acids**

Raw soybeans should not be fed in diets containing urea because they contain what substance? **Urease**

Greater heat production in the cow is associated with which volatile fatty acid? **Acetic acid**

What does the acronym NSC stand for when talking about nutrition? **Nonstructural carbohydrates**

What factor determines whether a mineral is an anion or a cation? **Its electrical charge**

What is the name of the tiny, finger-like projections that line the wall of the rumen? **Papillae**

They're classified into 2 groups: essential or nonessential and are the basic building blocks for protein. What are they? **Amino acids**

If the MUN level is considered high, which nutrient is likely being fed in excess? **Protein**

What is peristalsis in the digestive tract? **Motility**

What compounds result from the rapid degradation of adipose tissue? **Ketones**

How do yeast products function in the rumen? **Stimulate fiber-digesting bacteria; Stabilizes rumen fermentation**

Which compartment of the cow's digestive system is known as the fermentation vat? **Rumen**

Name a mineral whose availability can be decreased by high levels of iron in the diet. **Copper; Zinc**

Hay forages fed to the milking herd should have a minimum Relative Feed Value ranging from: 100-110, 120-130, 140-150, 180-190 **140 - 150**

What is the name used to describe the group of compounds that are added to a cow's ration to help maintain the proper rumen pH? **Buffers**

Which part of the digestive tract is responsible for reabsorbing water? **Large intestine**

What substance is produced during cud chewing which acts as the cow's natural buffer? **Saliva**

What happens metabolically when a dairy cow does not have enough energy in her diet to meet her needs? **Mobilizes fat**

How many kilocalories of energy are provided by a gram of carbohydrate? **4 Kilocalories**

What does the acronym NE stand for when referring to a foodstuff? **Net energy**

Why should drastic ration changes be made gradually? **Allow the rumen environment (microbes) to adapt**

When balancing a dairy cow's ration, the requirements for which nutrient should be met first? **Energy**

High levels of iron in a diet can decrease the availability of what other minerals? **Copper and Zinc**

What are the maximum pounds per day of cottonseed that nutritionists generally recommend for lactating cows? **6 - 8 Pounds**

Anionic salts have been supplemented in dry cow rations to prevent what metabolic disorder? **Milk fever**

How many kilocalories of energy are provided by a gram of fat? **9 Kilocalories**

Protein is a combination of amino acids. The amino acids are unique among compounds involved in nutrition because they contain what element? **Nitrogen**

What is the most critical nutrient for cows in the summer months? **Water**

Why must some amino acids be provided in the cows diet? **Cow is unable to produce them**

What does the acronym CF stand for when referring to a foodstuff? **Crude fiber**

What are the 2 types of amino acids? **Essential & nonessential**

Name the 4 compartments of the stomach of the cow. **Rumen; Reticulum; Omasum; Abomasum**

Name the 4 fat-soluble vitamins. **Vitamins A; D; E & K**

- Name 3 common anion sources fed to dairy cattle. **Calcium chloride, Ammonium chloride, Magnesium sulfate, Calcium**
- Name 3 anions commonly found in a dairy cow's rations. **Chloride; Phosphates; Sulfates**
- Name 3 ways amino acids are used by the dairy cow: **Fetal growth; Growth; Hormone synthesis; Milk production; Tissue repair; Antibody synthesis**
- Name 3 of the buffers commonly used in dairy rations. **Limestone (calcium carbonate); Magnesium oxide; Sodium bicarbonate; Sodium bentonite**
- Name 3 reasons cows need fiber. **Maximize DMI and energy intakes; Maintain normal rumen; fermentation; Maintain normal milk fat %; Protect against post-calving disorders**
- Name 3 feed additives that can be used to reduce milk fat depression. **Magnesium oxide; Sodium bicarbonate; Potassium bicarbonate; Potassium carbonate**
- Name 3 nutrients that are necessary in a dairy cow's ration. **Vitamins; Minerals; Carbohydrates (energy); Fat; Protein; Water; Fiber**
- Name 3 carbohydrates that the cow can use as a source of energy. **Cellulose; Hemicellulose; Pectin; Starch; Sugars**
- Give 3 examples of by-product feeds. **Brewer's grains; Citrus pulp; Corn gluten feed; Corn gluten meal; Cottonseed hulls; Cottonseed meal; Distiller's grains; Soybean hulls; Soybean meal; Whole cottonseed; etc.**
- Name 3 grains that can be fed to dairy cattle with no processing. **Corn; Oats; Wheat; Barley; Whole cottonseed; Triticale**
- Name 3 major minerals used in feeding dairy cattle. **Calcium; Phosphorus; Salt; Iodine**
- Give 3 reasons cows need fiber? **Maximize dry mater and energy intake; Maintain normal rumen fermentation; Maintain normal milk fat parentage; Protect against post calving disorders**
- Give 3 advantages of feeding a total mixed ration. **Eliminate selective eating; Consistent ration; Higher dry matter intake; Free-choice mineral not needed; Higher milk production; Lower percent fiber needed in ration; Easier to balance precisely; Fewer digestive upsets; Can feed wider variety of by-products**
- Name the 3 structural carbohydrates. **Cellulose, Hemicellulose, Lignin**
- Name the 3 volatile fatty acids. **Acetic; Propionic; Butyric**
- By-products can be used successfully as feed for dairy cattle. Give 3 reasons why by-products may be considered? **Improve fat test; lower feed cost; Replace forage; Provide by-pass protein; Stimulate appetite**
- Buffers can be added to a dairy cow's ration for a number of reasons. Give 3 reasons one might add buffers to a ration. **Increase fat test; Aid in adjusting to high energy ration; Improve milk yield; Improve digestibility; Maintain acid-base balance; Improve intake**
- Name 3 anionic salts which have been used to help prevent milk fever. **Magnesium sulfate; Ammonium sulfate; Calcium sulfate; Ammonium chloride; Magnesium chloride; Calcium chloride**
- Give 3 signs of phosphorus deficiency. **Reduced or depraved appetite; Stiff joints; Lameness; Reduced milk production; Reduced weight gain; Reduced feed efficiency; reduced fertility**

Name the 3 nonstructural carbohydrates. **Pectin; Starch; Sugar**

By-products can be successfully used as feed for dairy cattle. Give 3 factors that should be considered before including a by-product in the ration. **Nutrient composition; Cost; Availability; Palatability; Storage; Consistency; Ability to feed (or use)**

Name 3 fat supplements typically added to a dairy cow's ration. **Whole cottonseed; Soybeans; Canola; Tallow; Prilled fatty acids; Granular fats**

Name 3 trace minerals required by the dairy cow? **Iron; Manganese; Copper; Zinc; Cobalt; Iodine; Selenium**

Whole cottonseed has gained popularity as an ingredient in dairy rations. Name 3 advantages of using whole cottonseed. **High energy content; High fiber content; Fiber highly digestible; Moderate protein content; Low heat increment; High value relative to cost**

Name the 3 parts of the small intestine. **Ileum; Jejunum; Duodenum**

Name 3 functions of dietary phosphorus. **Bone formation & maintenance; Milk secretion; Building muscle tissue; Energy metabolism; Phospholipid formation; Fatty acid transport; Amino acid metabolism; Protein formation**

Name 3 factors which determine the nutrient requirements of a dairy cow. **Body weight; Stage of lactation; Milk yield; Environmental temperature; Age; Butterfat content of milk; Body condition; Reproductive status**

Give 3 reasons why dry matter intake would be overestimated? **Failure to account for feed refusal; inaccurate weights of feeds; Overestimating body weight; Ration miscalculations**

Name 3 benefits of pelleting poor quality forage: **Increase consumption; Increase rate of passage; Decrease rumination time; Decrease roughage value**

Name 3 mistakes TMR feeders make, as sighted as the most frequent. **Feed less forage; Don't moisture test enough; Overmixing**

Name 3 cations commonly found in a dairy cow's ration. **Calcium; Magnesium; Potassium; Sodium**

Name 3 of the protein sources which are preferred for use in milk replacer? **Casein; Dried skim milk; Dried whey; Whey protein concentrate; Dried whey products**

Physiology and Reproduction

- T/F Reproductive efficiency is a problem in most dairy herds. **True**
- T/F A heifer bred at an early age, to calve before she is 2 years old will reach full size if properly fed. **True**
- T/F The average length of the uterine body is 3 - 4 inches. **False**
- T/F The use of a heat check animal will eliminate estrus detection errors. **False**
- T/F Artificial insemination can be used successfully on heifers. **True**
- T/F Estrogen increases in concentration until it reaches a peak near the end of standing heat. **False**
- T/F In order to achieve a calving interval of 12 months, a cow must conceive by 60 days after calving. **False**
- T/F Jerseys should be bred when they weigh 500 - 550 pounds. **True**
- T/F The conception rate following estrus synchronization should be higher than without estrous synchronization.
False
- T/F The ideal calving interval is 365 days. **True**
- T/F The number of services per conception generally rises during the summer months. **True**
- T/F Heifers bred artificially have more trouble calving than heifers bred naturally by a bull. **False**
- T/F A well-fed heifer is normally in heat the first time at 24 months of age. **False**
- T/F Vibriosis may be transmitted through artificial insemination unless the semen is treated with streptomycin.
True
- T/F Reproductive problems and cow fertility is a problem in most dairy herds. **True**
- T/F Cows who have a retained placenta at calving will generally have more breeding problems. **True**
- T/F The egg is released before standing heat. **False**
- T/F Generally older cows have more difficulty calving than do heifers. **False**
- T/F A heifer bred at an early age to calve before she is 2 years old will not reach full size. **False**
- T/F Heifers are more fertile than older cows. **True**
- T/F All AI organizations recommend the same semen thawing procedures. **False**
- T/F During calving, a cow should not be disturbed but should be left on her own. **False**
- T/F More blood flows through the udder of a cow lying down than in a cow that is standing. **True**
- T/F Metritis is an infection of the uterine lining. **True**
- T/F The use of heat detection aids will eliminate estrus detection errors. **False**
- T/F Artificial insemination helps to spread disease. **False**

T/F On average, conception rate is 10% higher in heifers than cows. **True**

T/F Heat detection is a very important aspect of a sound reproduction program. **True**

T/F Leptospirosis infections usually result in abortions. **True**

T/F The conception rate generally rises in the summer. **False**

T/F The normal birth position for a calf is feet and head first. **True**

T/F Heifers are less fertile than older cows. **False**

T/F Semen placement is not important since sperm can swim to where the egg is located. **False**

T/F In artificial insemination, the semen should be deposited in the vagina. **False**

T/F Extreme heat & cold affect the reproductive performance of dairy cows. **True**

T/F Estrus detection failure is a major reason for low reproductive efficiency in dairy herds using artificial insemination. **True**

T/F Estrus detection errors are a major problem in reproductive management when using artificial insemination. **True**

T/F Breeding a cow within the first 30 days after calving increases your chances of getting her bred on first service. **False**

T/F When heifers are estrus synchronized, you should expect a reduction in conception rate. **False**

Ovulation occurs from which ovary most often? **Right**

In some herds a "gomer" bull may be used, what is his function in that herd? **Heat detection**

The ovaries serve 3 primary functions, what are they **Estrogen production; Ovum production; Progesterone production**

In some herds you may see a patch with a white or red plastic tube on it glued to the rump of some of the cows. What is the purpose of this patch? **Heat detection aid**

What does the acronym AI stand for? **Artificial insemination**

In which country was the first semen frozen? **U.S.S.R (Soviet Union)**

What is the normal range in the length of the estrous cycle? **18 to 24 Days**

On the average, how many days are there between heat periods in dairy cattle? **21 Days**

Lack of which 2 vitamins may lead to retained placenta? **Vitamins A and E**

Mature cows can produce how many gallons of moisture through respiration per day? **4 - 6 gallons**

It usually takes about how many days after calving for a cow's reproductive tract to return to normal? **40 - 60 Days**

What is the milk "let-down" hormone? **Oxytocin**

What is the term used to describe the procedure by which a group of heifers is induced to all come into heat at approximately the same time? **Estrous synchronization**

What is wrong with a heifer that has a blind cervix? **It is totally sterile**

When comparing the fertility of heifers, 1st lactation cows, second lactation cows and aged cows, which are usually the most fertile? **Heifers**

When does ovulation generally occur during the typical estrous cycle: 12 hours before the end, at the end, 12 hours after the end, or 24 hours after the end of standing estrus? **12 Hours after the end of standing estrus**

When is the best time to measure progesterone in milk to determine if a cow is pregnant? **21 - 24 Days after breeding**

If a cow was observed in heat on July 10th., when should her next heat period be expected? **July 31st**

If a cow was observed in heat on September 1st., when should her next heat period be expected? **September 22nd**

Temporary glands develop on the ovary, what are the names of these 2 temporary glands? **Follicle and corpus luteum (yellow body)**

Name 2 diseases that cause abortions. **Brucellosis; Campylobacteriosis (Vibriosis); Chlamydia; IBR; Leptospirosis; Listeriosis; Neospora; Trichomoniasis**

What is the normal birth position of a calf? **Front feet first with the head between the legs**

What is the general term for the ovaries and the testicles? **Gonads**

Where would you expect to find a structure known as the zona pellucida? **Surrounds an embryo**

What percentage of the eggs, which a mature cow has in her ovaries, is present at birth? **100 Percent**

What is a gamete? **Sperm or an ovum**

What is a zygote? **Fertilized egg**

The testes serve 2 primary functions, what are they? **Sperm production; Testosterone production**

The voluntary waiting period (VWP) is the time period after calving when you choose to not breed a cow, the reproductive tract returns to its non-pregnant size and function. What is this process called? **Involution**

In which of the following locations are the most causes of breeding problems generally found: vagina, cervix, uterus, oviduct, or ovary? **Uterus**

Which hormone increases dramatically in concentration just prior to ovulation? **Luteinizing hormone (LH)**

It is best to keep your semen tank at least 25 percent full of liquid nitrogen. What is the critical temperature at what semen must be stored below? **Minus 75 degrees Fahrenheit**

What is the temperature of liquid nitrogen? **Minus 320 degrees Fahrenheit**

What is the major reproductive management problem when using artificial insemination? **Heat detection**

Name 1 purpose for which embryo transfer is currently being used. **Increase the number of calves from 1 cow; Test for genetic recessives**

What is the most reliable sign of estrus? **Standing to be mounted**

What is the normal length of the voluntary waiting period (VWP)? **40 - 70 days**

When does a dairy cow's postpartum fertility peak after calving? **60 days**

For the cow and calf, the calving environment needs to be clean, dry, and what minimum size? **150 - 200 square feet**

In some herds there is colored chalk or paint on the tailhead. What is the purpose of this chalk or paste? **Heat detection aid**

How long is the voluntary waiting period (VWP) in most herds? **40 to 70 days**

What is the more technical name for the bovine egg? **Oocyte**

Where does fertilization of an ovum occur: Vagina, Cervix, Uterus, Oviduct? **Oviduct**

What does the acronym SQID stand for in dairy cattle reproduction? **Subcutaneous implantable device**

What is the name of the structure through which the fetus receives all of its nutrients? **Placenta**

What hormone can be used to control the time of estrus in a cow that has a corpus luteum? **Prostaglandin**

What is converted in the liver to glucose? **Propylene**

What hormone is measured in milk to determine if a cow is pregnant: estrogen, oxytocin, progesterone, or prostaglandin? **Progesterone**

What hormone does the uterus normally produce 17 to 18 days after estrus? **Prostaglandin**

What is the hormone, which is produced by the follicle and is primarily responsible for bringing a cow into estrus (heat)? **Estrogen**

Metritis is an infection of what organ? **Uterus**

What is leptospirosis called in humans? **Weils disease**

When a cow or heifer is said to be "in heat", what does it mean? **She is at the desirable time to breed**

What is the hormone, which is produced by the corpus luteum (yellow body) and is responsible for maintaining pregnancy in the cow? **Progesterone**

What is the name of the temporary gland that forms on an ovary after ovulation and produces the hormone progesterone? It is also known as a "yellow body". **Corpus luteum**

You have a 50 percent conception rate in your herd of 100 cows. How many cows will be bred three or more times? **25 Cows**

Well-grown Jersey heifers should be bred to calve at what age? **20 - 24 Months**

What percent of freemartin heifers are sterile? **Over 90 percent**

Where would you most likely find an acrosome? **Head of a sperm**

What hormone causes the development of male characteristics as animals mature? **Testosterone**

What is the only visible sign that tells you a cow is positively in heat? **She stands to be mounted by another animal**

What is the hormone in cows that causes each alveolus to squeeze the milk down into small tubes that lead to the teat? **Oxytocin**

There are currently vaccines available for which of the following reproductive diseases: leptospirosis, brucellosis, vibriosis, all of the above, or some of the above? **All of the above**

What is name of the process of freezing semen from a bull and thawing it later to fertilize eggs? **Artificial insemination**

Which of the following is the most important cause of poor reproductive efficiency in dairy cattle: cystic ovaries, abortion, missed estrus, uterine infections? **Missed estrus**

When comparing the fertility of heifers, 1st lactation cows, second lactation cows and aged cows, which are usually the least fertile? **Aged cows**

If a cow was observed in heat on June 10th., when should her next heat period be expected? **July 1st**

Define a French straw? **Unit of semen for artificial insemination**

How soon after appearance of the calf's front feet should delivery occur in a normal birth? **Within an hour**

The corpus luteum develops on the ovary after ovulation; which hormone causes it to regress earlier than normal? **Prostaglandin**

Define cold shock in semen? **Permanent injury to sperm that is caused by a sudden decrease in semen temperature after thawing**

What occurs when the cow ovulates but shows little or no signs of heat? **Silent heat**

Cull heifers and cows have been treated with hormones to cause them to become sexually active as heat check animals. What is the primary hormone that is used? **Testosterone**

How often should cows & heifers come into heat? **Every 21 days (+/- 3 days)**

Additional selenium is fed or injected during the dry period to help prevent what reproductive disorder? **Retained placenta**

How long is the fertile life of an ovum inside the cow? **8 - 12 hours**

Gonadotropin releasing hormone (GnRH) is released from a specialized area in the brain. What is this specialized area called? **Hypothalamus**

The reproductive performance of a dairy herd is primarily affected by 2 factors. Name 1 of these factors: **Conception rate; Heat detection efficiency**

GnRH alters follicular growth by causing the dominant follicle to ovulate within how many hours? **24 - 32 hours**

What gland releases the PTH hormone? **Parathyroid gland**

How many injections of GnRH are used in the ovsynch program? **2**

A well-grown Jersey heifer should be bred to calve at what age? **24 Months**

Well-grown Holstein heifers should be bred at what age? **13 - 15 Months**

What is the name of the temporary structure, which develops on an ovary, within which the ovum or egg matures?
It also produces the hormone estrogen. **Follicle**

What is the name of the organ on which the temporary glands known as follicles and corpora lutea develop?
Ovary

What is the name of the organ within which a fetus or unborn calf develops? **Uterus**

Which age group on the dairy farm generally has the highest incidence of dystocia? **Heifers**

Which of the following does not cause abortions in cattle: leptospirosis, brucellosis, vibriosis, none of the above, or all of the above? **None of the above**

Why is it important to catch a cow in heat? **Determine the best time to breed her; Help determine her next heat period**

When a cow is "in heat", it means that she is: running a temperature, at the desirable time to breed, has been outside in the sun, in a warm barn. **At the desirable time to breed**

When one uses the term "dystocia" to what are they referring? **Calving difficulty**

Which breed of dairy cattle has the longest gestation period? **Brown Swiss**

A heifer calf born twin to a bull is: always sterile, sometimes sterile, never sterile, or never fertile? **Sometimes sterile**

Retained placenta has numerous causes. Research indicates that a vitamin and a mineral in combination may reduce the incidence. What is the vitamin and the mineral? **Vitamin E and Selenium**

What glands produce eggs? **Ovaries**

Dystocia means the cow: refuses to eat, is lame, is blind, has calving difficulty, or none of the above. **Has calving difficulty**

What is the condition where the physical signs of heat are difficult to detect called? **Silent heat**

Which breed of dairy cattle is affected by white heifer disease? **Milking Shorthorn**

Normal calving should occur within how many hours after labor begins? **2 Hours**

What hormone is measured in milk to determine pregnancy? **Progesterone**

What is the maximum time that should be allowed to pass between removing semen from the tank and depositing it in the cow? **15 Minutes**

What liquid substance is used to freeze and store frozen semen? **Liquid nitrogen**

How many chambers are found in the heart of the cow? **4 Chambers**

Your herd's heat detection rate is 50 percent and your herd's conception rate is 50 percent, what is your pregnancy rate? **25 Percent**

Where does the fetus (unborn young) develop after the egg is fertilized? **Uterus**

Define the calving interval for a cow? **Period of time between successive calving dates**

Define the gestation period? **Time from conception to calving**

What is the most important factor to consider in determining when to breed a cow after calving? **Health of the reproductive tract**

What is the most important factor to consider in determining when to breed a heifer for the first time? **Body size**

What is the name of the biological process that results in a gamete? **Meiosis**

What is the name of the biological process that results in a zygote? **Fertilization**

The corpus luteum develops on the ovary after ovulation; which structure precedes it at the same location on the ovary? **Follicle**

The corpus luteum develops on the ovary after ovulation; which hormone does it produce? **Progesterone**

What is the term for the procedure in which both testicles are removed? **Castration**

What is the term for a male bovine which has been castrated at a young age? **Steer**

What is the recommended goal for average days open in a dairy herd? **80 - 100 days**

What gland in the brain produces ACTH? **Pituitary**

What gland in the cow's neck regulates blood calcium levels? **Parathyroid**

The follicle develops on the ovary before ovulation; which hormone does it produce? **Estrogen**

Where would you most likely find the zona pellucida? **Surrounding an ovum**

Where would you most likely find the mesosalpinx? **Surrounding the ovary**

Define dystocia? **Difficult calving**

In what area of the female reproductive tract does fertilization occur? **Oviduct**

What is a freemartin? **Sterile heifer calf born twin to a male**

At what temperature is frozen semen stored? **-320 Degrees Fahrenheit**

Define a breach birth? **Calf delivered backwards**

Well-grown Holstein heifers should be bred to calve at what age? **22 - 24 Months**

What percent of all births are abnormal, i.e. not in proper birth position? **About 5 percent**

What is the muscle tissue that surrounds the alveoli and squeezes milk into the cistern? **Myoepithelial cell**

Name 1 reproductive disease that can be eliminated through the use of artificial insemination. **Campylobacteriosis (Vibriosis); Trichomoniasis**

Superovulation is a hormonal treatment that causes a cow to ovulate more than the usual one egg in her estrous cycle. What hormone is injected to cause superovulation? **Follicle stimulating hormone (FSH)**

What is the most commonly recommended temperature for thawing frozen semen? **92 - 96 Degrees Fahrenheit**

What is the process during which time a cow's reproductive tract returns to its nonpregnant size and function?
Involution

In the female reproductive tract, prostaglandins cause the regression of what structure? **Corpus luteum**

Which hormone inhibits milk let down? **Adrenalin (epinephrine); Norepinephrine**

What is the problem with white heifer disease? **Heifers will be sterile or have reduced fertility**

Define the term non-return rate? **Percentage of cows presented for 1st service which are not presented for rebreeding**

Which day after breeding is most embryo transfers conducted? **Day 7 or 8**

A majority of cows come into heat how many days after injection of prostaglandin? **3**

Define the term service sire? **Bull to which a cow is bred**

Which gland in the body releases melatonin? **Pineal gland**

What is the most consistent visual predictor of ovulation? **Onset of standing estrus**

What does the acronym GnRH stand for? **Gonadotropin Releasing Hormone**

The oviducts have a funnel-shaped opening that gathers in the ovum at ovulation. What is this funnel-shaped opening called? **Infundibulum**

What percentage of pregnant cows exhibit estrus? **3 - 5 Percent**

How long do sperm live after being inseminated into a cow? **Approximately 24 hours**

What problem can occur if semen straws cool significantly from the 95 degrees at which they are thawed? **Cold shock**

When a bull breeds a cow where is the semen deposited? **Entrance to the cervix**

Define the term silent estrus. **Cow is not exhibiting the behavioral signs of estrus although she is normally cycling**

When during the estrous cycle would you expect the luteinizing hormone (LH) surge to occur? **Shortly after the onset of standing estrus**

What is GnRH? **Gonadotropin Releasing Hormone**

Which gland is responsible for regulating blood calcium levels? **Parathyroid gland**

What is a caruncle? **Placental attachment site in the uterus**

What is a SQID in dairy cattle reproduction? **Subcutaneous implantable device**

Name a method by which a cow can increase her blood calcium level. **Mobilize it from bone; absorb more calcium from the digestive tract**

Trace mineral deficiencies can affect your herds' fertility. Give a trace mineral that is supplemented in dairy cow diet to improve fertility. **Selenium**

After insemination, how long do sperm live in the cow's reproductive tract? 20 minutes; 6 hours; 24 hours; 2 days
24 hours

Reduced gestation and retained placenta typically are the first symptoms of what vitamin inadequacy? **Vitamin A**

Many hormones play an active role in a cow's estrus cycle. Which hormone is at its peak near the onset of standing estrus? **Estrogen**

What is the problem with a heifer that has a blind cervix? **She is sterile**

If your herd's heat detection rate is 50 percent and your herd's conception rate is 50 percent, what is your pregnancy rate? **25 percent**

How long should it take after calving for the uterus to be completely involuted? **40 Days**

Well-grown Jersey heifers should be bred at what age? **12 - 15 Months**

Give 2 examples of reproductive steroid hormones. **Estrogen; Progesterone; Testosterone**

What hormone is released by the pineal gland in response to longer day length? **Melatonin**

What does the term dystocia refer to? **Difficult births (calving problems)**

The secretion of what hormone causes normal regression of the corpus luteum, CL, from the non-pregnant uterus?
PGF_{2α}

The follicle develops on the ovary before ovulation; which structure develops in the same location on the ovary?
Corpus luteum

What is uterine involution? **Process of the uterus returning to normal size and function**

What is ovsynch? **Process of synchronizing ovulation with the use of GnRH and prostaglandin F2**

What is the hormone primarily responsible for bringing a cow or heifer into heat (estrus)? **Estrogen**

What are oocytes? **Eggs**

What is the name of the hormone that is produced by the follicle? **Estrogen**

Name 3 methods of preventing cystic ovaries in dairy cows. **Balanced ration; Control of infections following calving; Reducing trauma and stress at calving; Consideration of genetic influence on individual cows**

Give 3 examples of reproductive hormones. **Estrogen; Follicle Stimulating hormone; Luteinizing hormone; Progesterone; Testosterone**

Heat detection is a major management problem in artificial insemination. Name 4 things that can be done to improve it? **Increase frequency; Increase length; Heat detection aids; Estrous synchronization; Change time; Turn out on dirt lot**

Name 4 parts of the dairy cow's reproductive tract. **Cervix; Ovaries; Oviducts; Uterus; Vagina; Vulva**

Give 3 reasons cows don't become pregnant when the herd is bred by artificial insemination. **Failure to ovulate; Fertilization failure; Hormone Imbalance; Poor quality semen; Failure to inseminate; Improper insemination technique; Heat detection errors**

Give 3 physiological causes for repeat breeding in cows. **Congenital abnormalities; Cow aging; Early embryonic death; Endocrine failure; Fertilization failure; Infection**

Name 3 factors which can modify the intensity or length of estrus. **Age; Disease; Environmental temperature; Footing; Number of animals in heat; Nutrition; Parasites**

A dairy herd's conception rate is affected by 4 factors. Name 3 of these factors: **Heat detection accuracy; Herd (cow) fertility; Semen (bull) fertility; Technician competency**

Name 3 uses of ultrasound in a reproduction management program. **Pregnancy determination, Determine embryonic losses, Monitor cystic ovaries, Determine sex of embryo**

Name 3 reasons for breeding cows by artificial insemination. **Encourages more accurate breeding and calving records; improves fertility; Helps prevent reproductive disease from spreading; Increases safety for cattle and people**

Name 3 causes of embryonic loss. **Nutrition, Chromosomal abnormalities, Metritis, Abnormal hormone levels, Infection (BVD, leptospirosis, ureaplasma), Immunological abnormalities**

Name 3 signs that a cow is near the time of calving. **Udder full; Vulva enlarged; Mucus discharge; Relaxation of ligaments at tail head; Restlessness**

Name 3 of the purposes for the drug known as prostaglandin in dairy management: **Estrus synchronization in heifers; Metritis; Induced abortion**