

2021 NY Regional Senior 4-H Dairy Quiz Bowl Contest

Senior Packet 1, Phase A

- 1) There are 2 organs that undergo involution. The uterus is one, what is the other?

Udder

- 2) The milk line in a kernel is an indication of starch deposition in the kernel. As sugars are converted into starch and deposited in the kernel, does the milk line increase, or decrease?

The milk line increases (DHM, 6/18, pg. 12)

- 3) What is the term for the disease undulant fever when it affects cattle?

Brucellosis

- 4) Successful businesses that depend on consistent processes for getting work done correctly and efficiently use SOP's that describe the way each process is completed. What do the initials SOP stand for?

Standard Operating Procedures

Senior Packet 1, Phase B

1) The National Dairy Check-off program has partnered with what two restaurants to boost cheese sales?

McDonald's

Domino's

Taco Bell

2) What are the two most prevalent protozoal diseases in young calves? (page 103)

Coccidia

Cryptosporidium

3) What are the two broad categories that hoof lesions can be broken down into?

Infectious lesions

Non-infectious lesions (Identifying and Preventing Causes of Lameness in Your Dairy Herd)

4) What is the molecular weight of carbon dioxide if carbon has an atomic weight of 12 and oxygen has an atomic weight of 16?

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Senior Packet 1, Phase C

- 1) The speed of maturity and the stage of maturity at harvest affects what measure of forage quality?

NDF digestibility (DHM, 6/19, Pg. 22)

- 2) What is the closest relative that paternal half-sibs have in common?

Sire

- 3) How many hours of darkness per day do cows need for optimal milk production?

6-8hrs (Hoards Dairyman, 1/10/20, p43)

- 4) What government department is responsible for enforcing the standards of identity for dairy products? Page 670.

Food and Drug Administration (FDA)

- 5) Which ketone body is the most sensitive to indicate clinical and subclinical ketosis? (Page 205)

Betahydroxybutyrate (BHBA)

- 6) What is the CMT on-farm test used to detect?

Mastitis

- 7) In the area of milking systems, what does acronym AMS stand for?

Automated Milking System (DHM, 4/18, pg. 20)

- 8) What is the name for the milk quality indicator that measures the number of cold-loving bacteria in milk?

Preliminary Incubation Count (PIC) DHM, 3/18, pg. 19)

- 9) Managing milking efficiency includes looking at the management areas of overmilking, evaluating milking equipment, proper maintenance, and what other major area?

Milking routines (DHM, 6/18, pg. 14)

- 10) Corn harvested for silage should have a target milk line of what percentage?

75% (DHM, 6/18, pg. 12)

- 11) What are anthelmintic products classified and used for on the dairy?

Dewormers

12)What company became the sole owner of Fairlife by purchasing the remaining 57% of the company from Select Milk Producers?

Coca-Cola

13)Soybean meal is an excellent source of which nutrient?

Protein

14)The concept of SMART goals has been used many times to define the writing of a business plan. What does the letter “M” represent in SMART?

Measurable

15)What is known to produce all the structure of the hoof in dairy cattle?

Corium

16)What term describes the physical condition of soil particles, moisture level, drainage, and biological activity?

Tilth

Senior Packet 1, Senior Team Bonus

- 1) Pedometers are used to monitor a cow's physical activity for heat detection. On what 3 body parts can pedometers be located?

Leg

Ear

Neck

- 2) In order to accurately calculate the dry matter intake per cow per day there are five key numbers needed to make these calculations. Name 3 of the 5 key numbers needed.

Weight of feed offered

Dry matter percentage of feed offered

Weight of feed refused

Dry matter percentage of feed refused

Number of animals fed with feed offered

- 3) Name the 3 primary Volatile fatty acid produced in the rumen.

Acetate

Propionate

Butyrate

- 4) Name three of the five steps recommended by AGCO (Your Agriculture Company) that you would do to your harvesting equipment to winterize it and make sure it is ready for spring.

Empty tanks

Adequately lubricate, oil

Repair damage, replace parts

Maintain and clean, wash

Proper storage of equipment

Change oil

Fill reservoirs

Senior Packet 2, Phase A

1) What is the proper term for money that a farm owes to vendors?

Debt

2) Healthy rumen function requires how many hours/day of ruminating?

8-10hrs

3) Due to root structure, which type of forage is more likely to be pushed up out of the soil due to freezing and thawing: alfalfa or grass?

Alfalfa

4) The continuously changing weight load is often the burden of the rear legs and causes lameness to occur most frequently where on the foot?

Outside claw (Identifying and Preventing Causes of Lameness in Your Dairy Herd)

Senior Packet 2, Phase B

1) If you were performing routine fresh cow exams, name 4 things you would do.

Take temperature

Pulse and respiration

Listen for DA

Check for ketosis

Check for mastitis

Listen for rumen turns

Check dehydration and body condition

Check for lameness

Rectal palpation to check manure

Rectal palpation to check for metritis

2) In the area of measuring forage quality and digestibility what does TTNDFD stand for?

Total Tract Neutral Detergent Fiber Digestibility (DHM, 6/19, pg. 22)

3) What two things create the major barriers in preventing infective organisms from entering the mammary gland?

Teat skin

Streak canal (DHM, 9/18, pg. 26)

4) Name 4 of the 6 primary indicators of milk quality on the dairy farm.

Standard plate count (SPC)

Somatic Cell Count or Bulk tank somatic cell count (BTSCC)

Laboratory Pasteurization Count (LPC)

Coliform Count (CC)

Preliminary Incubation Count (PIC) (DHM, 3/2018, pg. 19)

Cryoscope

Senior Packet 2, Phase C

1) What is the most common NPN (non-protein nitrogen) source fed to dairy cows?

Urea

2) What hormone is produced in the pineal gland?

Melatonin

3) In a young ruminant's stomach, what is the name of the enzyme that coagulates milk?

Rennin/Rennet

4) The process of forcing plant roots above the soil surface because of freezing and thawing is known as what?

Heaving

5) Most inoculants aim at improving the production of what acid, which is the most effective silage acid? (Page 18)

Lactic acid

6) What term describes the combination of cull rate and mortality rate to help determine the number of replacement animals needed on an operation? (Page 140)

Herd turnover rate

7) What type of milk is defined as the milk from the second through fourth milking after calving? (Hoard's, page 271)

Transition Milk

8) Excessive rates of pneumonia in dairy herds are not typically due to cold weather or drafts, but often due to what?

Inadequate ventilation

9) Body energy and nutrient reserves can be replenished with most ease during which stage of lactation?

Late lactation

10) The use of gypsum bedding increases the production of what gas in the manure system?

Hydrogen Sulfide

11) In reference to farm employees what do the letters NIOSH stand for?

National Institute for Occupational Safety and Health

12)What is a cow suffering from if her rumen pH is below 5.5?

Sub-acute rumen acidosis

13)What is the business term that is described by how well the business can cover current debts with available cash or readily sold stuff on hand?

Liquidity (Progressive Dairy, 10/19, pg.28)

14)Calves start to use body energy to cool themselves at what environmental temperature? (Page 390)

78°F

15)How much bedding should be in a deep-bedded stall with stall mats?

4 inches

Deep bedded stalls without a stall base is a minimum-6 inches

16)When referring to dairy field equipment, what does RPM stand for?

Rotations or revolutions per minute (HD, 3/19, pg. 161)

Senior Packet 2, Team Bonus Questions

- 1) When developing a dairy management team for your farm, name 3 non-farm professionals who should be invited to be on the team?

Veterinarian

Hoof Trimmer

Ag Lender

Milk Inspector

Nutritionist

Crop Consultant

Equipment Dealer

Building Contractor

AI Technician (Hoards Dairyman, 12/19, p711)

- 2) What are 3 of the 4 main processes a cow uses nutrients for?

Maintenance

Growth

Production/lactation

Reproduction

- 3) In the Margin Protection program, what 3 commodities or feeds are used to help calculate the national average feed cost?

Corn

Soybean Meal/Soybean

Alfalfa hay

- 4) Lactococci bacteria are found on skin and in the environment, including deep bedded sand stalls and causes mastitis. What 3 management practices will be most critical in preventing this type of mastitis?

Pre-dip

Post dip

Bedding maintenance (DHM, 10/18, pg. 18)

Senior Packet 3, Phase

- 1) When using Presynch before starting a cow on the Ovsynch program, the cow receives 2 injections of what hormone?

Prostaglandin

- 2) This measurement of energy in feedstuffs is defined as the total energy in a feedstuff minus the energy lost in feces.

Digestible energy (Virginia materials)

- 3) Propionic acid absorbed from the rumen is converted to glucose in what organ of the cow?

Liver (HD, pg. 125)

- 4) What part of the alfalfa plant is most digestible?

Leaves

Senior Packet 3, Phase B

- 1) If a Canadian heifer weighs 450 Kg, what would she weigh in pounds?
990 pounds (450 x 2.2)
- 2) Mange is contagious and tends to occur in dairy cattle housed in close proximity, especially during what 2 seasons?
Fall
Winter
- 3) Due to the national ban on tail docking, what are 3 tail maintenance strategies farmers can use?
Electric clippers
Scissors
Utility cutters
Power tail trimmer
Tail tie ups
- 4) In Dairy Production management we look at health records and two areas we note are mortality rates and morbidity rates. Define mortality rate and morbidity rate.
Mortality rate is the number of dead animals in a given period of time
Morbidity rate is the number of sick animals in a given period of time

Senior Packet 3, Phase C

- 1) The SPC test is used to measure the number of mesophilic organisms in milk to determine whether state regulatory standards are met. What do the initials SPC stand for?

Standard Plate Count

- 2) Milk is produced by groups of what special secretory cells?

Alveoli

- 3) What does the acronym SNP stand for in relation to DNA testing?

Single nucleotide polymorphism (HD, 9/19, pg. 490)

- 4) What process helps raise the temperature and lower the moisture content of bedding material in a compost-bedded pack barn? (Page 325)

Aerating

- 5) What type of fly typically congregates on the back and sides of cattle? (Page 391)

Horn Fly

- 6) What is the main cause of hock lesions?

Stall Surface

- 7) Alfalfa plants with gray roots have suffered from what?

Winter Kill (Progressive Forage, 10/1/19, p20)

- 8) Colostrum contains how many times more protein than regular milk?

Four times (HD, 3/19, pg. 243)

- 9) Aflatoxins are especially toxic to what organ in the dairy cow causing inflammatory responses as well as compromising the cow's immune system? Page 666.

Liver

- 10) What is the name for the highest daily production attained by a cow during her lactation?

Peak milk production

- 11) When referring to ventilation, what does ACH stand for?

Air changes per hour (HD, pg 315)

- 12) In what year were genomic evaluations introduced? (page 273)

2009

13)What is the term used to describe the period of increased growth rate that follows a growth restriction imposed earlier in a heifer's life?

Compensatory Growth

14)How many pounds are in a bushel of soybeans?

60 Pounds

15) If a cow has an interdigital foot infection, where is it located?

Between the toes

16)What is the name of the pituitary hormone that is critical in the initiation and maintenance of lactation?

Prolactin

Senior Packet 3, Team Bonus Questions

1) Name 3 of the dairy cow's reproduction hormones.

GnRH

FSH

LH

Prostaglandin

Progesterone

Estrogen

2) Give 3 advantages to a dairy producer who is using intensive rotational grazing for their herd.

Low input cost

Low Labor requirements

Even manure distribution

Reduced soil erosion

Improved weed control

3) Dairy Management Inc. or DMI is a nonprofit organization that conducts programs in integrated marketing, communications, and research for US dairy farmers. Name three organizations that fall under the DMI umbrella?

American Dairy Association

National Dairy Council

U.S. Dairy Export Council

4) Name three different ways that diseases can be classified on the basis of their primary cause.

Environmental

Genetic

Infectious

Metabolic

Senior Packet 4, Phase A

- 1) In reference to dairy cattle reproduction, what is the name of the blister-like structure on the ovary that contains the egg before ovulation?

Follicle

- 2) What is the name of the hormone that enables the cervix to soften and stretch in preparation for calving?

Relaxin

- 3) Environmental pathogens that cause coliform mastitis can be found anywhere that the udder comes in contact with what?

Manure (DHM, 10/18, pg. 27)

- 4) What hormone is associated with keeping a cow pregnant?

Progesterone

Senior Packet 4, Phase B

1) Name 2 of the 3 main strategies that can be used to control corn rootworm.(page 281)

Seed treatments

Genetic modifications

Soil insecticides

2) Dystocia is hard on the calf, the cow and the people who are providing assistance. Regarding maternity and fresh cow management on the dairy, give 3 positive management practices that should be used to assist with dystocia at any time.

Proper training

Optimal restraining of the animal

Proper cleaning of the cow

Use of lubricant

Use of obstetric gloves

Clean equipment

Separate animals from group housing

3) One strategy for reducing transition period diseases and disorders is to perform a TMR audit. Name 3 measurables of a TMR audit.

Particle Length

Feeding Routine

Bunk Management

Consistency of Delivered Diet (Progressive Dairyman, 2/25/19, p37)

4) Name 2 of the 3 key indicators of mycotoxin absorption in your cattle?

Lowered feed intake

Diarrhea

Repro Issues (HD, 2019, pg. 20)

Senior Packet 4, Phase C

- 1) What has the greatest effect on nutritive value of forages?
Maturity
- 2) What forms when the sperm and egg unite?
Zygote or fertilized egg
- 3) What substance in Guernsey milk gives it a golden yellow color?
Beta carotene
- 4) When applying a foamer or cleaner to calf pens and trailers, in minutes, how long should the detergent be left to soak?
10 to 15 minutes (HD, pg 493)
- 5) The optimal time to conduct a first pregnancy diagnosis is approximately how many days post-A.I.? (page 301)
32 days
- 6) How many weeks are usually required for proper corn silage fermentation?
8 to 10 weeks
- 7) More frequently feeding cows leads to an increase in which milk component?
Butterfat (Progressive Dairyman, 2/25/19, p70)
- 8) Regarding stall design, the space a cow occupies when she is lying down or the space from her knee to her tail is called what?
Cow's imprint length
- 9) What economic indicator are you determining by dividing the total dollars a dairy has in assets by the number of cows?
Total investment per cow
- 10) Which ovary does ovulation occur from most often?
Right ovary
- 11) What characteristic of legumes allows them to tolerate dry conditions better than many forages??
Taproot
- 12) What toxin is a common problem usually associated with feeding large amounts of cottonseed?

Gossypol

13)When cows are resting, we expect to see at least what percent of them chewing their cuds?

58-62 % (HD)

14)What is being determined by removing water from a feed stuff?

Dry Matter

15)What gas is produced and released during phase 1 of silage production?

Carbon dioxide (CO₂)

16)What group of lactating cows are we referring to with the term primiparous?

First lactation

Senior Packet 4, Team Bonus Questions

1) What are the 3 types of fiber found in a dairy cow's ration?

ADF (acid detergent fiber)

NDF (Neutral detergent fiber)

Lignin-effective fiber

2) There are 3 major areas that milk quality is measured by: Bulk tank somatic cell count, Standard plate count, and Preliminary Incubation. For these three parameters what are the measurable milk quality goals?

Bulk Tank Somatic cell count-<200,000 Cells/ml

Standard Plate count-<5,000 CFU/ml

Preliminary Incubation-<10,000 CFU/ml (DHM, 3/17)

3) Name 3 of the 4 new and improved dimensions for footbaths on dairy farms?

10 to 12 feet long

2 feet wide

Depth of solution should be 4 to 6 inches

Step in height of 10 inches

4) Name three characteristics of corn that have been introduced through transgenics.

Corn borer resistance

Herbicide resistance

High oil content

Waxy corn

Stress resistant

Senior Packet 5, Phase A

- 1) What is the name of the disease that decreases the capacity of epithelial cells to produce milk or destroys epithelial cells altogether?

Mastitis (DHM, 2/18, pg. 18)

- 2) Which phase of ensiling occurs after the silage is chopped but is prior to sealing the silo?

Aerobic phase

- 3) Where is GnRH secreted from in the dairy cow?

Hypothalamus

- 4) Which of the following feed stuffs has the highest level of energy, fats, proteins, or carbohydrates?

Fats

Senior Packet 5, Phase B

- 1) Name 4 of the 6 health traits that were incorporated into Holstein Sire evaluations in April 2018.

Hypocalcemia

Displaced abomasum

Ketosis

Mastitis

Metritis

Retained placenta DHM, 2/18, pg. 15)

- 2) A herds pregnancy rate is calculated by multiplying what two reproductive benchmarks?

Heat detection rate

Conception rate (Progressive Dairy, 10/19, pg. 58)

- 3) One of the dairy industry's nagging quandaries has been ridding herds of Bovine Viral Diarrhea (BVD) which was first discovered in 1946 and has been found on every continent except the cattle less Antarctica. Name 4 ways BVD is spread to healthy cattle via exchanges of bodily fluids.

Nose to nose contact

Milk

Urine

Feces

Semen

Saliva

Blood (DHM, Sept. 16)

- 4) Name 4 potential benefits of properly grouping of cows in a freestall herd.

Reduced prevalence of metabolic disorders

Increase milk yields

Lower feed cost

Maintain proper body condition scores

Improve reproduction

Increase lifetime milk production yields

Optimize parlor flow

Senior Packet 5, Phase C

- 1) What dairy product continues to be the driver of the dairy industry?
Cheese (Progressive Dairyman, 1/1/19, pg. 25)
- 2) Farmer's Hypersensitivity Pneumonitis is a respiratory disease also known as what?
Farmer's Lung (Hoards Dairyman, 1/10/20, p8)
- 3) Rotating between different herbicides used on your fields is a good management practice because it reduces what?
Weed Resistance
- 4) In the first field-based study of high school athletes recovering post-workout, what dairy product outperformed a commercial sport drink by 6.7%?
Chocolate Milk (DHM 10/19, pg. 6)
- 5) The Charm II, gas chromatography and the Signal are tests used to determine levels of what in milk?
Antibiotics (HD)
- 6) Before ordering official 840 tags, a producer needs to provide what information that is assigned to a physical location and is obtained from the State Department of Agriculture?
Premise ID
- 7) The parotid, submaxillary, buccal, and palatine are what type of gland?
Salivary glands
- 8) What organ of the cow's body is responsible for about 25% of all metabolic activity?
Liver
- 9) Chromosomes are found in what part of the cell?
Nucleus
- 10) What tool is used to gauge the extent, seriousness, and depth of compaction in a field? (page 41)
Soil penetrometer
- 11) Ideally, fresh cows should have at the least how many inches of bunk space per cow?

30 inches (HD, pg. 556)

12)When washing milking equipment and milk lines, hot water should still be at what temperature by the time it has run through the system?

120°F

13)What does the acronym ROPS stand for in relation to tractor safety?

Rollover protective structure

14)The new farm bill established what program that makes it easier for producers, cooperatives, and processors to offer milk to food banks?

Milk Donation Program HD (page 16)

15)Every employee that works on a dairy farm must have a signed version of what identification verification form?

I-9 form

16)By what year has USDA recently announced that the transition to RFID tags for disease traceability be completed?

2023

Senior Packet 5, Bonus Questions

1) Name the 3 components of NDF.

Cellulose

Hemicellulose

Lignin

2) Ideally, high quality alfalfa should contain what percentage of crude protein, acid detergent fiber and neutral detergent fiber?

20 % crude protein

30 % Acid detergent fiber

40 % Neutral detergent fiber

3) Dairy cows that have twins have a higher incidence of health issues. Name 3 of them.

Ketosis

Retained placenta

Stillbirth

Metritis

Milk Fever

Mastitis

4) Name 3 diseases in dairy cattle that are caused by a clostridia organism.

Black leg

Overeating disease

Tetanus

Malignant edema

Senior Packet 6, Phase A

- 1) What metabolic disorder is characterized by decreased appetite accompanied by a high-pitched tympanic resonance heard by listening with a stethoscope and tapping on the left abdominal wall?

Left displaced abomasum or LDA

- 2) What is formed when glucose and galactose are combined?

Lactose

- 3) In which part of the digestive system are the immunoglobulins in colostrum absorbed in a newborn calf?

Small intestine

- 4) What hormone is at its peak near the onset of standing estrus?

Estrogen

Senior Packet 6, Phase B

1) Which two types of flies are confined animals most vulnerable to?

Stable flies

House flies

2) While tempting to forego forestripping as part of a milking routine to save time and effort, forestripping can offer 3 main benefits to the cow and ultimately a farmer's bottom line. What are those 3 major benefits?

Stimulates teat for proper/complete milk let down/faster letdown

It removes the highest bacterial and somatic cell count milk

It helps milkers identify clinical mastitis and or abnormal milk (DHM, 2/18, pg. 19)

3) In addition to IgGs, what are the two other immunoglobulin categories that make up measurable percentages of the total immunoglobulins in colostrum? Page 74.

IgA

IgM

4) A portion of cattle who survive Salmonella Dublin can become carriers for life and shed the bacteria intermittently. Name 3 avenues the bacteria can be shed.

Feces

Colostrum

Milk

Semen (DHM, pg. 30, 1/2019)

Saliva

Blood

Senior Packet 6, Phase C

- 1) If there is visible mold on silage it is usually a good indicator that what is present?
Mycotoxins
- 2) What financial indicator is derived from dividing total debt by the average number of cows?
Debt per cow
- 3) Pregnancy testing using an ELIZA test looks for the presence of PSPB. What does PSPB stand for?
Pregnancy Specific Protein B
- 4) In the area of genomics, what is a SNP(pronounced snip)
a genetic variation in DNA
- 5) Where in the cow would you find the Furstenberg's rosette?
Test Cistern
- 6) What percent of a dairy farm's dollars go towards the feed bill?
50 to 60 % (Progressive Dairyman, 2/7/19, pg. 10)
- 7) What crop process allows rumen bacteria to fully utilize starch in corn silage?
Kernel processing
- 8) Which state recorded the highest milk production per cow in 2019? (Page 157)
Michigan
- 9) What major dairy processor declared bankruptcy in November 2019? (Page 179)
Dean Foods
- 10)Regarding crops, what does SCS stand for?
Soil Conservation Service
- 11)Foliar diseases which reduce a plant's photosynthetic capacity affect which part of the plant?
Leaf
- 12)In reference to crop management, what does GDD stand for?
Growing degree days
- 13)How often should alfalfa seeders be calibrated?
Every year

14)Field drying hay means that it is at risk of being rained on. What plant component is most impacted in this scenario as it is easily leached from forage?

Plant sugar

15)Through what process is carbon dioxide taken from the atmosphere and fixed as carbohydrates in plant material?

Photosynthesis

16)What is the fungal infection that lives on green plants, especially corn, and causes fish-eye bumps on the leaves that leads to reduced photosynthesis and premature plant death?

Tar spot (HD, pg. 425)

Senior Packet 6, Bonus Questions

- 1) Name three minerals that, if fed in increased levels to your pre-fresh and or dry cows, can lead to increased incidences of milk fever.

Potassium

Calcium

Phosphorus

- 2) There is a laundry list of common mastitis bacteria on the farm. Name 2 common gram- positive mastitis causing bacteria and name 1-gram negative common mastitis causing bacteria.

Gram positive: Strep agalactiae, staph aureus, Staph species, strep species

Gram negative: E-coli, Klebsiella, Citrobacter, Enterobacter, Serratia, pseudomonas (DHM, pg. 32, 1/2019)

- 3) More and more dairy farms are using cloth towels instead of paper towels for prepping teats for milking. Name 3 guidelines that should be followed when using cloth towels in udder preparation.

Use a separate towel for each cow

Wash towels in warm water

Do not let damp towels sit between uses because of yeast and mold contamination

Dry towels immediately after washing or add bleach when washing

- 4) Name 3 of the 4 phases of a standard milking equipment cleaning protocol/

Pre-rinse

Chlorinated Alkaline cleaning

Acid rinse

Sanitation/washing

Senior Packet 7, Phase A

1) What is the term used to describe the death of a calf within the first 24 to 48 hours after delivery?

Stillbirth

2) Grass or alfalfa silages that are ensiled with too much moisture results in the formation of an undesirable organic acid that has a strong odor. What is the name of this acid?

Butyric Acid

3) What nutrient will a fertilizer containing potash supply?

Potassium

4) What is the term for inflammation of the uterus?

Metritis

Senior Packet 7, Phase B

1) What does soil porosity refer to? (HD, page 209)

Space between soil particles

2) Name the two general classes of probiotics.

Fungi

Bacteria

3) If a dairy herd's conception rate is 60%, and the heat detection rate is 60%, what is the pregnancy rate?

36%

4) Good soil pH is the cornerstone of a sound soil fertility program and growing good crops. A couple of the main forages grown on dairy farms are corn and alfalfa which grow ideally at different soil pH. What is the target pH level for corn and alfalfa?

Corn, 6.0 pH

Alfalfa, 6.8 pH (DeKalb Silage Guide)

Senior Packet 7, Phase C

- 1) What is the iron building protein found in milk that has anti-microbial activity?
Lactoferrin
- 2) What does the acronym CSPS stand for around corn silage?
Corn Silage Processing Score (DHM, 6/18, pg. 12)
- 3) What vitamin plays a role in the coagulation of blood?
Vitamin K
- 4) On a dry matter basis, how much ash is typical in corn standing for silage? (HD, page 316)
2 to 3 %
- 5) On the calving ease scale, what does a score of 1 indicate? (Page 330)
Easy calving no difficulty
- 6) What year were the first "Got Milk?" ads released? (Page 449)
1993
- 7)) Many dairy producers are breeding their cows and heifers to beef bulls with low EPD's for calving ease. What does EPD stand for?
Expected Progeny Differences
- 8) What is the name for the American Farm Bureau Federation's dairy insurance program that was approved in April 2018 to provide milk futures and milk component insurance options to Farmers? Page 329.
Dairy Revenue Protection (Dairy-RP)
- 9) Edward Jenner first used a cow to protect people against a disease and used the cowpox virus to prevent smallpox. What is this process called?
Vaccination
- 10) In milking parlor systems, where does most of the heat stress occur?
Holding pens or Holding area
- 11) How many teeth does a cow have in the upper front of her mouth?
None
- 12) When taking soil samples, it is recommended to take them at how many inches?
6 to 8 inches

13)A2A2 genetics are becoming more important in cattle breeding. A2 is the common form of beta casein which is part of which major milk component?

Milk proteins

14)What term is used to describe taking a young animal off milk as the main source of nutrition?

Weaning

15)What is the name given to the mineral elements that have a negative charge?

Anions

16)What is the name for the condition caused by acute gaseous distention of the rumen?

Bloat

Senior Packet 7, Bonus Questions

1) Coliforms are bacteria that can cause mastitis, name three types of coliforms.

Escherichia coli (E. coli)

Enterobacter species

Klebsiella species

2) Regarding farm business management, one of the major categories of cost is fixed costs. Name 3 of the 5 fixed costs referred to by the acronym DIRT?

Depreciation

Interest

Repair (also accept Rent)

Taxes

Insurance

3) Name 3 different types of milking parlors besides Parallel.

Herringbone

Rotary

Swing

Parabone

Flat barn parlor

4) Name 3 economic losses that a dairy producer can suffer due to clinical mastitis.

Added labor

Discarded milk

Antibiotic treatment

Culling

Death

Production loss

Veterinary cost (DHM, 10/18, pg. 27)

Senior Packet 8, Phase A

- 1) Legislation requires that homebuyers who move within one mile of farms be informed that agriculture can be noisy, smelly, and dusty and that farmers have what right?

Right to Farm

- 2) What is another term for bypass protein that excludes unavailable or heat-damaged protein?

Protected protein, rumen undegraded protein or undegraded intake protein

- 3) What part of the corn kernel is broken when processing corn silage?

Pericarp

- 4) What is it called when something is put on a cow's hoof that is used to improve healing by removing the pressure from the affected foot?

Hoof block (DHM, 7/18, pg. 14)

Senior Packet 8, Phase B

- 1) Farmers can stretch forage inventories by adding non-forage NDF sources to rations. Name 2 non-forage NDF feeds.

Whole Cotton Seed

Soyhulls

Beet Pulp

Corn Gluten Feed

Distiller's Grains

Brewers Grains

Corn Germ Meal (Hoards Dairyman, 1/10/20, p54)

- 2) In the area of farm business management, what are the two figures needed to calculate feed efficiency per cow on a dairy farm.

Pounds of milk produced per cow per day

Pounds of dry matter fed per cow per day

- 3) Name four disadvantages of twinning in dairy cattle.

Reduced milk production during the lactation

Calving difficulties more frequently

Abortion rates are higher

Twins are often weak at birth

Potential for a freemartin heifer

Increased health problems for the cow

- 4) What 3 things does a bull's NAAB code tell you about the bull?

What bull stud

What breed

The bull's number

Senior Packet 8, Phase C

- 1) McDonald's has added what type of cheese slices for sandwiches to its menu?

White cheddar slices (HD)

- 2) Routine soil sampling for fields requires how many core samples per field?

10-15 (Progressive Farmer, 10/1/19, p38)

- 3) What is dystocia?

Difficulty or obstructed calving

- 4) Which reproductive condition is a result of the fetal membranes remaining within the uterus for an extended period after calving?

Retained placenta or retained fetal membrane

- 5) In the month after weaning, daily hay intake should be limited to what amount? (HD 20, page 448)

0.5 to 1 pound

- 6) What term is used to describe a function of the total time a cow spends eating per day multiplied by the rate at which the animal consumes that feed?

Feed intake (HD, pg. 347)

- 7) What milk quality indicator gauges the udder infection statistics of the herd and indicates the potential loss of production due to mastitis?

BTSCC (Bulk tank somatic cell count) DHM, 3/18, pg. 19)

- 8) What is the name of the new type of mastitis that has been emerging and is resistance to commonly used antibiotics like Spectramast, Today and Pirsue?

Lactococcus (DHM, 10/18, pg. 18)

- 9) Corn harvested for silage should be at what percent dry matter to ensure good digestibility and facilitate good packing and quality fermentation?

32% to 36 % (DHM, 6/18,pg. 12)

- 10) What term is used to describe cattle with high "proviral loads" and represent the greatest infectious threat to their herd mates? Page 629.

Super-shedder

- 11) When it's cold outside, milk or milk replacer fed to calves should not be below what temperature? Page 718.

101.5° F

12)Most AI organizations recommend that inseminators should place semen in this section of the reproductive tract?

Uterine body

13)What is the minimum Brix reading for good, feedable colostrum?

22 g/dl (gram/deciliter)

14)Non-GMO rations can contain GMO ingredients if they make up less than what percent of the diet? Page 624.

5 %

15)What type of compaction occurs below the tillage pan and has the most serious, long-term impact? Page 726.

Subsoil compaction

16)What term is used to express the net worth that someone has in a farm? Page 728.

Percent equity

Senior Packet 8, Bonus Questions

1) Give 3 reasons why vaccines may fail to work when administered.

Incorrect administration

Improper handling

Choosing the wrong vaccine to prevent the disease

Animals are stressed and don't respond to the vaccine

Pathogen load is already too high in the herd

2) If your farm purchased 100 pounds of 20-24-15 fertilizer, how many pounds of Potassium, Nitrogen and Phosphorus would be in it?

20-pound nitrogen

24 pounds of phosphorus

15 pounds of Potassium

3) Name 3 of the 4 elements present in all proteins.

Carbon

Hydrogen

Oxygen

Nitrogen

4) Name 3 of the 4 classes of immunoglobulins in colostrum.

IgG

IgA

IgM

IgE

2021 Regional Senior 4-H Dairy Quiz Bowl Extra questions

- 1) What is the term used to describe the mating of two animals that are related to each other?

Inbreeding (HD, 10/19, pg. 620)

- 2) An animal mortality compost pile should be a minimum of how many feet away from the nearest water source?

200 feet (Hoards Dairyman)

- 3) Most ventilation companies offer a VSD fan that is automatically controlled by temperature-sensing technologies. What does VSD stand for?

Variable Speed drive (HD, 5/19)

- 4) What is the name of the most desirable acid produced during corn silage fermentation that functions to preserve the silage?

Lactic acid

- 5) What is the name of a molecule that will speed up a chemical reaction?

Enzyme

- 6) What marketing tool would be used by someone who owns a commodity such as milk and will sell it sometime in the future if you are trading in the futures market?

Short Hedge

- 7) What is the BioPryn blood test used to test for?

Pregnancy

- 8) What is the term on a farm balance sheet that describes something you owe?

Liability

- 9) What is the name for the milk quality indicator that estimates the number of bacteria present in the milk that originate from manure or a contaminated environment.

Coliform Counts (CC) DHM, 3/18, pg 19)

- 10) According to the FDA, the official term for the ongoing relationship between a farm manager and veterinarian is called what?

Veterinary Client Patient Relationship (VCPR)

- 11) What is known to produce all the structure of the hoof in dairy cattle?

Corium

12)What bacteria are associated with digital dermatitis? They can be found on the skin and sometimes in the feces of affected cattle. Page 470.

Spirochete

13)What is the term for the protrusion of the bowel or other organs through a weak area in the muscle or wall of the body cavity?

Hernia

14)Reproductive hormones should be administered through an 18-gauge or smaller needle that is how many inches long? Page 526.

1.5 inches

15)The Federal Milk Marketing orders are regulated by who?

Secretary of Agriculture

16)What is the scientific term for forcing a cow to consume a nutrient in quantities smaller than normal?

Hypo Alimentation

17)If the milking machine milk to rest pulsation ratio is set to 55:45, what percent of the time is the inflation open?

55

18)What is the term used for the management practice of plowing down a forage crop to provide nutrients for a subsequent crop?

Green Manure

19)What practice is necessary for precision feeding dairy heifers successfully and is a simple means to monitor animal performance?

Weighing heifers (Precision Feeding Heifers)

20)What is the percent recovery rate of sand when using a sand-manure separation system?

88 to 92%

21)What is the legal limit for bacterial counts in raw milk in the U.S.?

100,000 cfu (colony forming units)/ml

22)The financial measure of pounds of milk sold per worker is an important tool for evaluating the productivity of cattle and what?

Workers

23)What is the name of the environmental, unicellular, colorless, chlorophyll-lacking alga that thrives in moist, humid environments with ample organic matter and when it gains access to the mammary gland it causes a mastitis that resists all treatment therapies?

Prototheca

24)What is the term for the process in which sperm undergo a change in the female reproductive tract, enabling them to penetrate and fertilize the ovum?

Capacitation