

## **2025 NY Regional Senior 4-H Dairy Quiz Bowl Contest**

### **Senior Packet 1, Phase A**

- 1) Rations are formulated on a dry matter basis and the weighed and mixed on what basis?

As-Fed

- 2) Most newborn calves should be able to sit up how many minutes after birth?

5 minutes

- 3) When removing manure from a storage pit, what typically is done prior to minimize solids accumulation and create a uniform fertilizer for field application?

Agitate manure

- 4) What is the term used for a crop that is planted when a row crop is not growing and helps protect the soil?

Cover Crop

## **Senior Packet 1, Phase B**

1) In regard to foot wart research, it cites three major risk factors. Management is one of them, what are the other two?

Bacteria  
Environment

2) How many stalls are there in a double-12 herringbone parlor?

24 stalls

3) All milk containers and packages have an ID code. The numbers of the code typically represent what two things?

State and plant in which the product was processed

4) If you applied 150 lbs. of 18-19-17 fertilizer per acre, how many pounds of N did you apply?

27 lbs.  $(150 \times 18\% (.18)) = 27 \text{ lbs.}$

## **Senior Packet 1, Phase C**

1) The production of what substances during feed digestion stimulate rumen development in calves.

Volatile fatty acids

2) A total mixed ration should be mixed for how many minutes in a standard mixing wagon?

3 to 5 minutes

3) Homofermentative inoculants contain bacteria that mostly produce which acid?

Lactic

4) What is the name of the condition in which the uterus fills with white blood cells that are attempting to clear disease organisms?

Pyometra

5) The measure of cows leaving the dairy herd is called what?

Cull rate

6) Which state is home to the most organic dairy farms?

New York

7) In inches, what is the recommended bunk space to provide per head for animals 4 to 8 months old?

5.9 inches

8) During the herd milking schedule, when should mastitis infected cows be milked?

Last

9) What class price would milk that is processed into sour cream receive?

Class II

10) Research has shown that heifers spend what percent of their time lying down?

50 to 60 %

11) In the area of milk quality, what is the terminology used that is an estimate of the number of cold loving bacteria in milk?

Preliminary Incubation Count

12) Rumen bacteria digest carbohydrates to produce VFA's which are absorbed into the blood and used for what?

Energy

13) In which specific organ do follicular and luteal cysts occur?

Ovaries

14) What vitamin can be injected into or fed to cows to reduce susceptibility to ringworm?

Vitamin A

15) In the reproductive tract, what is the name of the funnel-shaped opening of the oviduct called?

Infundibulum

16) What is a bio filter used for on the farm?

Filter air or water to reduce farm pollution

## **Senior Packet 1, Bonus Questions**

1) What are the 3 most common grooving patterns for creating and improving a floor surface?

Parallel  
Diagonal  
Diamond

2) Name 3 crop management practices that are conservation strategies that can help soils sequester carbon.

No-Till  
Cover Crops  
Diversified Crop rotation

3) Forage testing is the most reliable way of knowing the nutrient content of forages. What are three forage testing methods?

Wet Chemistry  
NIR (near infrared reflectants)  
Koster tester  
Screen tester/particle separator  
Moisture tester

4) What are 3 ways mycotoxins cost you money on your dairy farm?

Reduction in feed intake and milk production  
Disease infestation  
Reproduction problems  
Death in livestock  
Decrease in feed inventory and need to purchase  
Increase in cull rate leading to increase in replacement cost

## **2025 NY Regional Senior 4-H Dairy Quiz Bowl Contest**

### **Senior Packet 2, Phase A**

1) In regard to dairy cattle nutrition, what does MP stand for?

Metabolizable Protein

2) Only when oxygen is depleted can silage enter which phase that is characterized by bacteria converting sugars into valuable acids that drop the pH and limit yeast growth?

Fermentation phase

3) In which stomach compartment of a calf is the enzyme rennin produced?

Abomasum

4) *Staphylococcus aureus* is the most prevalent cause of what type of infection?

Mastitis

## **Senior Packet 2, Phase B**

- 1) Name 2 benefits to grouping first lactation animals separate from older cows.
  - Less competition
  - Less stress
  - Tailored management to the younger animals
- 2) What is the greatest concern with raising heifers in overstocked pens?

Elevated competition for feed can lead to variability in body weight
- 3) In the area of crop management, what does the acronym GMO and GE stand for?

GMO- Genetically Modified Organism  
GE-Genetically Engineered
- 4) There are different test used to determine milk quality. One method is Total bacteria Count. What is the more common terminology used for Total Bacteria Count that has the acronym SPC and for high quality milk the CFU's should be what number or less?

Standard Plate Count  
10,000

## **Senior Packet 2, Phase C**

1) Corn distiller's grains results from what process being performed with corn.

Wet milling

2) The volume of manure will be reduced by what percentage by composting it.

50%

3) In regard to internal parasites, what is the name of the worm that is the most economically detrimental?

Brown stomach worm

4) What is the name of the non-profit organization that supports all women in dairy by enhancing lives and creating opportunities through shared connections?

Dairy Girl Network

5) What is the medical term for belching?

Eructation

6) A stall width of how many inches is sufficient for most cows?

48 inches

7) What is the term for the ratio of the time milk is flowing to the total pulsation cycle?

Milk to rest ratio

8) How many state and regional dairy check-off organizations are in the U. S.?

16

9) What percentage of the plant should be left after dairy animals graze a pasture and move to a new one to maximize regrowth efficiency?

50%

10) The number of white blood cells in milk that is measured as cells/ml is known as what?

Somatic cell count

11) What is the genetic material found in all living organisms called?

DNA

12) If you observe large groups of small flies on the shoulders and backs of cattle on pasture, what kind of flies are you most likely dealing with?

Horn flies

13) What is an adequate pH for growing grass?

6.2

14) When making hay the goal is to stop respiration by the first nightfall. At what moisture level does a plant stop burning sugar?

60%

15) What type of injection may include a modified live virus?

Vaccination

16) When a cystic follicle is properly treated, it will ovulate to form what structure?

Corpus Luteum or CL

## **Senior Packet 2, Bonus Questions**

1) What are the 3 main greenhouse gases produced by the U.S dairy industry?

- Nitrous Oxide
- Methane
- Carbon Dioxide

2) The National Mastitis Council identifies 5 key practices to improve milk quality. Name 3 of the 5 practices.

- Treat and record clinical cases
- Post milk teat disinfectant
- Dry Cow therapy
- Cull chronic cases
- Milking machine maintenance

3) Name 3 changes in milk packaging that has helped increase milk sales.

- Distinctive packaging (example; hourglass shape)
- Resealable containers
- Colorful labeling
- Plastic containers
- Variety of products
- Packaging in vending machines
- Individual servings
- Advertising/marketing

4) To improve overall farm security, list 3 things that can be done.

- Limit entry to your farm to one route
- Develop a visitor policy
- Lock all tractors and equipment (DHM, 10/05)
- Lock all perimeter gates, install and lock all perimeter gates
- Have employees be aware of people and things happening around them
- Signs
- Lock on bulk tank, Lock-up medicine supplies
- Lock milk house
- Boots
- Footbath
- Camera's
- Isolate new animals or ones returning from exhibitions
- Lights

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**Senior Packet 3, Phase A**

1) What generally happens to a cow's body weight during the first 90 days of her lactation?

Decreases

2) What happens to the nitrate levels of corn after it has been ensiled?

Lowers

3) What type of electrical charge does an anion have?

Negative charge

4) The proportion of superiority or inferiority in performance of a parent which is transmitted directly to its offspring is indicated by what term?

Heritability

## **Senior Packet 3, Phase B**

1) In regard to milk and cheese pricing, what do the initials NASS stand for?

National Agriculture Statistics Service

2) Name 2 factors that can influence a rotary parlor efficiency.

Number of stalls

Length of milking

Platform speed

Stall exit time

3) What are the two most common external parasites?

Lice

Mange

4) When ear tagging a calf, in which section of the ear should the tag be placed?

Middle section between the two cartilage ribs

### **Senior Packet 3, Phase C**

1) The bacteria in heterofermentative inoculants produce lactic acid plus what other acid?

Acetic

2) What is the term given to using manure handling data to enhance decisions for profitability?

Precision Agriculture

3) What term describes a localized inflammation affecting the uterine lining without showing systemic signs?

Endometritis

4) The interval from the onset of standing heat to ovulation is approximately how many hours long?

28 hours

5) In time per stall, what is the common platform speed used in rotary parlors?

5 seconds per stall

6) When the temperature reaches what level in degrees Fahrenheit should sidewall curtains on a calf barn be completely open?

75 F

7) Which basic nutrient group provides the cow's major source of energy?

Carbohydrates

8) Which dairy product uses the biggest share of the milkfat produced in the U.S.?

Cheese

9) In inches, most grasses should not be mowed lower than what stubble height?

4 inches

10) Acid degree values are a measure of what?

Rancidity

11) What term describes protein that can be used by the rumen microbes to produce protein digestible in the small intestine?

Degradable Protein

12) Individual cows with more than 200,000 cells/ml are regarded as having what?

Sub-clinical mastitis

13) Alfalfa will not regrow if there are less than how many growing degree days between the last harvest and first hard frost?

200

14) What muscle keeps the teat end closed and helps prevent bacteria from entering the udder?

Sphincter Muscle

15) What kind of fatty acids are completely hydrogenated, with each carbon atom associated with the maximum number of hydrogen atoms?

Saturated fatty acids

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

22 g/dl

### **Senior Packet 3, Bonus Questions**

1) Name 3 functions of the cervix in dairy cattle reproduction.

Gateway to the uterus  
Lined with mucosal cells  
Produces mucus during heat  
Forms thick mucus plug during pregnancy

2) Name the 3 stages of parturition and what is happening in each.

Stage 1-Dilation of the cervix  
Stage 2-Delivery of the calf  
Stage 3- Delivery of the placenta

3) Name 3 factors that can affect a herd's Internal Herd Growth.

Cull rate  
Death rate  
Calf mortality rate  
Age at first calving  
Calving interval  
Reproduction  
Pregnancy rate  
Calf & heifer raising practices  
Sexed semen vs conventional semen

4) Name 3 main factors that can aid in controlling the incidences of rumen acidosis.

Fiber  
Particle Size  
Sugars  
Starches  
Feeding management  
Proper diet

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**Senior Packet 4, Phase A**

1.) A deficiency of fiber in the lactating dairy cow's diet can have what effect on milk fat?

Low milk fat test

2.) What is the cattlemen's term used to describe the time between calving and the time you are willing to wait to breed the animal again?

Voluntary waiting period

3.) In New York, what governmental entity would you contact to become registered in the national animal identification system?

New York State Agriculture and Markets

4.) What element must be absent in order for effective fermentation to occur in a silage pile?

Oxygen

## Senior Packet 4, Phase B

### 1) Name 4 of the 10 essential amino acids.

- Phenylalanine
- Valine
- Tryptophan
- Threonine
- Isoleucine
- Methionine
- Histidine
- Arginine
- Leucine
- Lysine

### 2) When talking about genetics, what is the difference between an allele and a locus?

- A locus is the position that a given gene occupies on a chromosome.
- An allele is any of the alternative forms of a gene that may occur at a given locus.

### 3) Controlling high operating costs helps improve profitability on the farm. Feed is the highest cost associated with dairy farming. Give 3 examples of how to control feed cost by controlling feed shrink.

- Improve silage packing in bunks to decrease spoilage
- Improve bunk face management to decrease spoilage and waste
- Store commodities in bins or tanks to minimize losses
- Use Ag bags rather than piles on the ground
- Limit feed exposure to consuming agents like wind, rodents and birds
- Limit feed heifers
- Oxygen barrier

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

Potassium  
Calcium  
Phosphorus

## **Senior Packet 4, Phase C**

**1)** Tarsal hygroma affects bovine locomotion. It also known by what common name?

Swollen Hocks

**2)** Most off -flavors in whole milk are associated with which component?

Butterfat, milk fat

**3)** What major hormone is produced by the corpus luteum?

Progesterone

**4)** What is the wavelike contractile motion that propels food and digesta through the digestive tract?

Peristalsis

**5)** In which part of the corn plant is the highest level of nitrates found?

Bottom of the stalk

**6)** Which type of mastitis causing bacterial infection typically responds to antibiotic therapy?

Gram Positive

**7)** What is the name of the revolution in American Beef production that involves producing a more sustainable calf by using beef semen in a herd of dairy cows for breeding?

Beef on Dairy

**8)** Microenvironment when referring to calves would be considered a hutch or animals in an individual pen. What would be an example of a macro environment?

Whole barn or entire group or pad of hutches

**9)** What is the iron building protein found in milk that has anti-microbial activity?

Lactoferrin

**10)** 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/soluble carbs

**11)** What USDA agency monitors the slaughter of cull cows for antibiotic residue?

Food Safety Inspection Service

**12)** The onset of laminitis usually trails acidosis by how many months?

2 to 3 months

**13)** What is the formula used on a dairy farm to determine debt per cow?

Total liabilities divided by the number of milking cows in the herd

**14)** The European Union standard for milk quality measured by SCC is kind of a gold standard and for U.S. milk to be exported, it must meet what somatic cell count standard?

400,000 cells/ml or less

**15)** The process of ruminal degradation by microbes leads to the release of fuels to the cow that she can utilize for energy. What are these fuels known as?

Volatile Fatty Acids

**16)** In degrees Fahrenheit what is the thermal neutral zone for calves?

60 to 75 Degrees F

## **Senior Packet 4, Bonus Questions**

**1)** Name the 3 subcategories that can impact milking parlor performance.

Cows  
Employees  
Equipment

**2)** Name 3 ways a farmer could control or limit potato leafhopper damage in alfalfa.

Insecticide application  
Planting resistant varieties  
Cutting alfalfa hay early

**3)** OSHA inspectors began inspecting dairy farms more regularly in 2014. Name 3 areas on the “Dairy dozen” list that inspectors look at.

Manure storage and collection facilities  
Bull/cow handling facilities  
Electrical systems  
Skid steer operations  
Tractor operation  
PTO guards  
Power transmission/functional component guards  
Hazardous energy control during equipment maintenance  
Posted warnings of farm hazards  
Confined spaces  
Bunker silos  
Noise

**4)** Providing a cow freshens on or close to her due date, and colostrum is milked out within 4 hours of calving, what are 3 variables that can affect the antibody level in the colostrum?

Disease exposure of the cow, infection  
Length of dry period  
Age of cow, older cow  
Cow’s vaccination program  
Heat Stress

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**Senior Packet 5, Phase A**

**1.)** Which volatile fatty acid is associated with stimulation of rumen development in the young calf?

Butyrate

**2.)** What is an Ambue bag used for?

To aid newborn calf respiration at birth

**3.)** What is the name of the milking practice of applying a germicidal solution to the teats before milking machine attachment?

Pre-dipping

**4.)** What does soil porosity refer to?

Space between soil particles

## **Senior Packet 5, Phase B**

**1)** Name 3 of the 4 necessary economic inputs for a dairy operation.

Land  
Labor  
Capital  
Management

**2)** Name 4 types of flies that are commonly found on a dairy farm.

House fly  
Stable fly  
Face fly  
Heel fly  
Deer fly  
Horn fly

**3)** What two nutrients make up the main sources of energy for the cow?

Carbohydrates  
Fat(Lipids)

**4)** Dystocia is hard on the calf, the cow and the people who are providing assistance. In working with maternity and fresh cow management on the dairy, give 4 positive management practices that should be used assisting with any type of dystocia.

Proper training  
Optimal restraining of the animal  
Proper cleaning of the cow  
Use of lubricant  
Use of obstetric gloves  
Clean equipment

## **Senior Packet 5, Phase C**

1) How many pounds of body weight are in one animal unit?

1000 pounds

2) The liver secretes what into the small intestines?

Bile

3) What is the name for the important measure calculated by dividing milk production by dry matter intake?

Feed efficiency

4) What immunoglobulin does the mucosal immune system produce?

IgA

5) What would a cow's diet be deficient in when Milk Urea Nitrogen levels are low?

Available protein

6) What is a more common name for erythrocytes?

Red blood cells

7) What is the term used to describe the percentage of cows eligible to become pregnant in a given time frame that actually become pregnant?

Pregnancy rate

8) Which body part of the dairy cow is made up of the cecum and colon?

Large intestine

9) How do you calculate the equity of a business?

Total assets minus total liabilities

10) The GCI is looking to award millions in grants to fund research projects focused on decreasing methane in the dairy and beef industry. What does GCI stand for?

Greener Cattle Initiative

11) What post calving disorder would a cow most likely have that is characterized by an enlarged uterus and offensive smelling uterine discharge within 21 days in milk?

Metritis

12) Cows infected with the organism that causes Johne's disease often will begin shedding the organism at what age?

2 years

13) Where in the cow's body would you find most of the body's reserves of phosphorus?

Bones

14) Pasteurization of hospital milk on a dairy farm is different from sterilization but will usually reduce the numbers of bacteria by what percentage?

90 to 98 %

15) What is the name of the dairy industry's animal care program being managed by the National Milk Producers Federation and Dairy Management Inc., since 2009?

Farmers Assuring Responsible Management-FARM

16) The highest feeding value of red clover can be yielded when it is cut at what stage?

Half bloom

## **Senior Packet 5, Bonus Questions**

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

Feces  
Colostrum  
Milk  
Semen  
Saliva  
Blood

2) When evaluating heifer housing, name 3 specific expectations we would want to see in our facilities.

Ensure each heifer has a resting space of 30 sq. ft.  
Limit pens to eight heifers or less during transition  
Adequate ventilation  
Allow each heifer 18 inches of bunk space  
Easy access to fresh water  
Heifer handling in stress-free to both people and animals  
Adequate stall size  
Appropriate neck rail height

3) Name the 3 types of fiber found in a dairy cow's ration.

NDF( neutral detergent fiber)  
ADF ( acid detergent fiber)  
Lignin-effective fiber

4) DHI says, we should monitor 5 key production indicators. What are (3) of 5 indicators?

Milk per cow  
Days in Milk  
Pregnancy Rate  
Somatic Cell Count  
Cull Rate

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**Senior Packet 6, Phase A**

1) Metabolic disorder acetonemia is more commonly referred to as what?

Ketosis

2) When treating udder edema, what class of drugs are used?

Diuretics

3) Where does ringworm live outside of the immune system?

On the skin

4) Where in the reproductive tract does fertilization of the ova take place?

Oviduct/fallopian tubes

## **Senior Packet 6, Phase B**

1) What are the four classes of immunoglobulins?

IgA  
IgE  
IgG  
IgM

2) Name four methods or field management practices farmers could use to reduce soil erosion.

Wind breaks  
Cover Crop  
Strip cropping  
Contour cropping  
Terracing  
Grass waterways  
Reduced tillage/no till  
Soil seeding  
Buffer Strips

3) In the milk market watch from August of 2022 to August of 2023, overall U.S. milk production was lower compared to a year ago but was up in numerous states. Name 3 or the 4 top states that had an increase in production.

New York  
Michigan  
Wisconsin  
South Dakota

4) Name the four categories and the points for those categories on the PDCA Dairy Cow Unified Scorecard.

Frame-15 points  
Dairy Strength-25 points  
Feet and legs-20 points  
Udder-40 points

## **Senior Packet 6, Phase C**

- 1) What illness has the USDA, FDA and CDC recently identified in cattle that is highly pathogenic and commonly spread by migrating birds?  
Avian Flu or Bird Flu
- 2) 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
- 3) Autotoxicity is most often a concern in which legume?  
Alfalfa
- 4) What vitamin is essential in maintaining healthy tissues growth, and immune response?  
Vitamin A
- 5) In business terms, what does COP stand for?  
Cost of production
- 6) What serves as a gateway between the uterus and the vagina?  
Cervix
- 7) One point of body condition score equates to about how many pounds of weight?  
125 pounds
- 8) Presynch helps synchronize cows before starting them on the Ovsynch program. Cows are given 2 injections of what hormone during the presynch phase?  
Prostaglandin
- 9) Maturity of the alfalfa plant is an important driver in forage quality. One method to ensure that your first cutting is done at the optimum time is the use of the PEAQ system. What does the acronym PEAQ stand for?  
Predictive Equation of Alfalfa Quality

10) Where do cattle get most of their B-vitamins?

The ruminal microorganisms synthesize them

11) What stomach problem in cows is associated with the animal having dark engine oil looking manure?

Ulcer

12) What should the minimum standard plate count be for colostrum?

50,000CFU/ml

13) What is the single largest nutrient requirement for producing corn, which represents as much as 20% of the cost of growing the crop?

Nitrogen

14) A change in the normal state of the body or one or more of its organs which disturbs the proper performance of the body function is called what?

A disease

15) What is the physical sign of an iodine deficiency?

Goiter

16) In reproduction, what is the term for the uterus's button-like structures that attach the uterus to the developing fetal membrane?

Caruncles

## **Senior Packet 6, Bonus Questions**

1) What are three mycoplasma Bovis associated diseases?

- Pneumonia
- Ear infections (otitis)
- Arthritis
- Mastitis

2) Name the 3 of the 4 compartments of a cow's stomach and the function of each.

- Rumen-Microbial,
- Omasum-Water absorption
- Reticulum-Hardware collection, fermentation
- Abomasum-Enzymatic digestion

3) Name 3 factors that can affect a herd's Internal Herd Growth.

- Cull rate
- Death rate
- Calf mortality rate
- Age at first calving
- Calving interval
- Reproduction
- Pregnancy rate
- Calf & heifer raising practices
- Sexed semen vs conventional semen

4) Name 3 things that should be included in a manure safety checklist.

- Hazard communication sign
- Training
- Fencing around lagoon
- Post signs
- Insist on a buddy
- Safety equipment
- Rules/procedures for rescue

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**Senior Packet 7, Phase A**

1) What metabolic disorder has an increased risk with high potassium forage dry cow diets?

Milk Fever, Downer cow, Hypo calcemia

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

Peak milk production

3) To help correct or prevent the build-up of acid in the cow's stomach, what would the dairyman most likely feed to the cows?

Buffer (sodium bicarbonate)

4) What is the common name for Hypocalcemia?

Milk fever

## **Senior Packet 7, Phase B**

1) In the dairy industry, name four animal welfare issues being faced by dairy producers.

- Tail docking
- Dehorning practices
- Confinement housing
- Lameness
- Down cow handling
- Vaccinations
- Hormones use
- Injections
- Calf hutches
- Castration
- AI breeding

2) In the area of calf management, what does the acronym FPT stand for and what is the cause of this happening?

- Failure of passive transfer
- Happens when the calf does not receive adequate antibodies from the colostrum at birth

3) Give 4 management practices that a dairy person would use in a good Dry cow therapy/treatment program on the farm.

- Dry cow treatment should follow after fresh milk out of udder using proper milking procedures
- Properly dry treat all quarters on all cows with recommended dry cow treatment
- Use proper hygiene and cleaning practices for prepping udder to dry treat (see proper sampling procedures)
- Use approved dry treatment
- Teat sealants maybe appropriate for some cows in some herds
- Post teat dip
- Place dry cows in separate pen or designated area that is a clean and dry environment
- Observe cows periodically for swollen quarters

4) Name the 4 steps of rumination

- Regurgitation
- Remastication
- Swallowing
- Eructation

## **Senior Packet 7, Phase C**

**1)** What milk quality test indicates the presence of psychotropic bacteria?

P.I. test

**2)** When a cow with milk fever is treated with calcium, which hormone is released to decrease blood calcium levels?

Calcitonin

**3)** What is the name for the type of corn silage that is made by shredding the entire corn plant longitudinally while simultaneously shattering the kernel and has a longer chop length than conventional corn silage?

Shredlage

**4)** What is the term used to describe inflammation and infection of the abdominal cavity?

Peritonitis

**5)** In hours, what is the fertile life of an ovum after it is released from the follicle?

6 to 12 hours

**6)** In the dairy cow, where are B-complex vitamins and Vitamin K produced?

Rumen

**7)** What is the name for a written plan for the land application of manure and fertilizer to meet crop needs?

Nutrient Management Plan

**8)** What do the letters VNS stand for in regard to a seed bag tag?

Varieties Not Stated

**9)** What disease that is spread by an infected bull causes short, irregular heat cycles and abortion at 4 to 6 months?

Vibriosis

**10)** When someone is exposed to prolonged noise at or above how many decibels is hearing protection recommended?

85 decibels

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

Tilth

**12)** *Mycobacterium avium* subspecies *paratuberculosis* (MAP) is the causative agent of what common dairy disease?

Johne's

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

Veterinary Client Patient Relationship

**14)** What is the term used to describe the feed management program that feeds cows for zero refusals?

**15)**

Slick Bunk or Slick Bunk Management

**16)** In what organ does *Leptospira* *Harjo Bovis* harbor and colonize?

Kidney

**17)** When talking about hoof health, what is the name given to a rupture at the point of the pedal bone?

Toe Ulcer

## **Senior Packet 7, Bonus Questions**

- 1) What are 3 advantages for a producer to use sexed semen?
  - Biosecurity benefit
  - Allows for more internal herd growth
  - Assist in meeting the industry demand for more replacements
  - More heifers means you could cull more poor performing animals
  - More heifers means you could have more animals to sell for profit
  - Genetic offspring of superior animals could improve herd genetics
  - Reduction in dystocia
  
- 2) Name 3 benefits to using renewable energy on a dairy farm.
  - Decrease in farms carbon footprint
  - Lowering farm expenses
  - Recycle farm waste
  - Tax credit
  
- 3) Research in the last decade has concluded that milk has numerous benefits to the human body's health, including a reduction in some cancer types and improving intestinal health. Name 3 other positive benefits that milk attributed to.
  - Control blood pressure
  - Reduce heart disease risk
  - Support healthy weight
  - Enhance satiety (fullness when eating)
  - Bone health
  - Reduce the risk of Type 2 diabetes (blood sugar control)
  
- 4) Fertilizer labels have three important numbers. In order, what do these three numbers represent?
  - The first number is the amount of nitrogen.
  - The second number is the amount of phosphate ( Phosphorus)
  - The third number is the amount of potash ( Potassium)

## **2025 NY Regional Senior 4-H Dairy Quiz Bowl Contest**

### **Senior Packet 8, Phase A**

1) What is colostrogenesis?

The process of making colostrum

2) What should a grazing farmer do before applying lime or fertilizer to a pasture?

Perform a soil test

3) What is fortification?

The process by which vitamins are added to milk

4) What is the name of the instrument used to test the freezing point of milk to determine if water has been added?

Cryoscope

## **Senior Packet 8, Phase B**

1) Give 3 health benefits for increasing a cow's resting period?

- Increase blood flow to mammary gland.
- Increase rumination.
- Less stress on hooves, thus less lameness.
- Less fatigue and stress.
- Greater feed intake

2) Name two types of organisms that are in the gram positive group for causing mastitis?

- Staph. Aureus
- Staph species
- Strep ag
- Strep species

3) Name 4 management procedures you can institute on your dairy to minimize the spread of BLV, Bovine Leucosis Virus.

- Freeze colostrum
- Only feed colostrum from test negative dams
- Use needles only once
- Dehorn with burning verses cutting
- Disinfect tattoo devices, hoof knives, etc. or anything that is used between animals that may transfer blood cells from one animal to the next
- Use one rectal sleeve per animal
- Test for positive animals and don't feed their milk or colostrum to other calves
- Have a good ectoparasite control program

4) Name 4 signs of estrus in a dairy cow.

- Standing to be mounted
- Mounting other cows
- Following and smelling other cows
- Bellowing
- Restlessness
- Red and swollen vulva
- Clear mucus discharge from Vulva

## **Senior Packet 8, Phase C**

1) What term describes the swelling of the udder or teats caused by the accumulation of fluid under the skin?

Edema

2) The release of which hormone causes the uterus to contract more forcefully and initiates the expulsion of the fetus?

Oxytocin

3) Where is GnRH secreted in the dairy cow?

Hypothalamus

4) BHBA or beta hydroxybutyrate acid levels in milk samples are monitored for which metabolic disorder?

Ketosis

5) What are the first signs of alfalfa weevil damage?

Tiny pinholes in leaves at the top of the plant

6) Describe morbidity rate in reference to dairy herd management.

The number of sick animals in a certain period of time

7) What is the name of the process where legume plants like alfalfa and clover convert atmospheric nitrogen into nitrogenous compounds that are useful to the plants?

Nitrogen fixation

8) What technique in the use of Dry Cow Treatment and the use of Internal Teat Sealants is a Best Management Practice to minimizing bacterial entry into the gland and doesn't stretch the sphincter or remove the keratin?

Partial insertion

9) What is the term for the rate of decline in a dairy cow's production after she reaches her peak milk production for a lactation?

Persistency

10) TCI is a measure of cow health and performance, looking specifically at the transition period, what does TCI stand for?

Transition Cow Index

11) What is the primary way genomics increases genetic progress?

By reducing generation interval

12) Digital dermatitis (DD) is also commonly referred to as what?

Hairy heel warts

13) What is the name for the long-term storage of carbon in soil or plant biomass?

Carbon Sequestration

14) In a corn silage pile, what acid helps prevent the pile from heating up and helps to halt bad yeast and mold growth?

Acetic Acid

15) Animals have excellent memories for both good and bad experiences. What is the term given to scary or negative experiences called?

Fear Memory

16) The term primaparous refers to what group of lactating cows?

First lactation cows

## **Senior Packet 8, Bonus Questions**

1) Name 3 management practices that can be used on farms that consistently show results in lower bulk tank somatic cell counts.

- Clean cows & waterer's
- Removal of udder hair/ synging udders
- Clean free stalls/tie stall/ cow beds
- Clean calving area
- Clean milking equipment/parlors
- Regular maintenance of milking systems
- Post milking teat dip/predipping
- Good dry cow program
- Proper milking procedures
- Wearing milker gloves
- Vaccinations
- Records on cows
- Stripping
- Culturing
- Milking infected cows last
- Backflushing

2) What are the three ways that Bovine Leukosis can spread to non-infected animals?

- Use of common needles for injections
- Use of common Palpation sleeves
- Feeding colostrum from infected cows to newborn calves
- Use of tattooing equipment without disinfecting
- Use of dehorning equipment without disinfecting
- Biting or blood sucking insects
- Fecal if doing rectal exams

3) Give 3 clinical signs of mycotoxins in dairy cattle.

- Lower milk production
- Manure is loose and variable
- Butterfat is low
- Somatic Cell counts are increase
- Fertility has decreased
- Decrease DMI

4) List 3 signs that a calf may be suffering from dehydration.

- Lethargic-gets up slowly at feeding time
- Silence-calf not vocal at feeding time
- Slow movement
- Dull eyes
- Poor hygiene-dirty rear ends
- Tent test on the skin-skin slow to go back to normal after using the tent test on the skin
- Dry nose

## 2025 NY Regional Senior 4-H Dairy Quiz Bowl Extra Questions

1) Over the past 15 years HVLS fans have been introduced to and proved to be effective in improving cow comfort on dairy operations. What does HVLS stand for?

High-volume, low speed

2) On average, brown midrib (BMR) corn yields how much less than non-BMR hybrids?

10%

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

Butyric acid

4) Where are nutrients applied in foliar feeding application?

On the leaves of a plant

5) What stage of calving is characterized by dilation of the soft tissue of the birth canal?

Stage II

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

10-15

7) What metabolites are used to synthesize milk casein?

Amino Acids

8) The uniform distribution of cycles throughout the year for dairy cattle defines them to be what?

Polyestrous

9) When photosynthetic capability is reduced, corn plants will transition nutrients from what part to fill kernels?

Stalk

10) Debt per cow is calculated by dividing total debt by what?

Average number of cows

11) What part of the digestive system does Cryptosporidiosis(Crypto) affect?

Small intestine

12) What is the highest grade of butter sold in the United States?

U.S. Grade AA

13) Cow's milk is what percentage lactose to the nearest tenth?

4.8 (4.7 - 4.9)

14) What is the technical name given to the mass of membranes and blood cells that is expelled after a calving?

Placenta

15) What type of immunity is produced by an animal when an antigen enters the body as a disease or by a vaccine?

Active immunity

16) When scours occur in the first 24 to 48 hours of life, what bacteria usually causes the problem?

E. Coli

17) If a cow is in constant heat, what might this be a sign of?

Cystic ovaries

18) For every 100 pounds of milk marketed, how much money is deducted from the producer's milk check for dairy promotion and product research?

15 cents

19) Which anion has the greatest impact on urine pH?

Chloride

20) How many grams of protein are typically found in an 8 oz glass of milk?

8 grams

21) What is the tissue that surrounds a cow's heart called?

Pericardium

22) The milk ring test is used to test for what disease?

Brucellosis

23) Tocopherol is the chemical name for which vitamin?

Vitamin E

24) Name four microminerals, or trace minerals, required in relatively small quantities in dairy cattle rations.

- Cobalt
- Iodine
- Manganese
- Zinc
- Copper
- Iron
- Selenium

25) Name 4 proper handling practices for teat disinfectants.

- Store in cool, dry areas
- Don't allow disinfectant to freeze
- Keep containers closed to prevent contamination
- Do not use after expiration date
- Do not assume that teat disinfectant will kill all pathogens
- Follow label instructions
- Use teat disinfectant in recommended concentration
- Do not dilute unless indicated on the label
- Use clean container for diluting if recommended and thoroughly mix the final product
- Never pour used disinfectant back into the original container
- Disinfectant cups should be emptied and cleaned as part of the routine wash-up after each milking or if they become contaminated during milking