

2015 NAILE 4-H Dairy Quiz Bowl

Phase A - Answers

- 150001 What term is used to describe forages that are seeded each year and whose growth is completed in one crop year?
Annuals
- 150002 What organ in the dairy cow produces urine?
Kidneys
- 150003 Everything that affects an animal's performance that is not inherited is said to be due to the effects of what?
Environment
- 150004 What feedstuff commonly used in the dairy industry is a by-product of the sugar beet industry?
Beet pulp
- 150005 What is the most common grain fed to dairy cows in the United States?
Corn
- 150006 When a cow chews her cud what is produced that acts as a natural buffer in the rumen?
Saliva
- 150007 What is the correct name for swelling of the udder?
Edema
- 150008 What is the common name for bovine keratoconjunctivitis?
Pinkeye
- 150009 A pH of 7 is neutral. What is the term for a pH less than 7?
Acidic
- 150010 What is the name of the manufacturing process which is used to disperse fat evenly throughout milk?
Homogenization
- 150011 What is the liquid used in freezing and storing semen?
Liquid nitrogen
- 150012 What organ stores and releases bile in the cow?
Gall bladder
- 150013 Which class of nutrients has the most energy per pound?
Fats

- 150014 What vitamin is known as ascorbic acid?
Vitamin C
- 150015 What is the technical term for hybrid vigor?
Heterosis
- 150016 A cow on legume pasture is uncomfortable, with her sides bulging out. What do we call her problem?
Bloat
- 150017 What calving ease score would be recorded for a Holstein cow if the calving were extremely difficult?
5
- 150018 Which disease occurring in dairy cattle causes undulant fever in humans?
Brucellosis (Bangs disease)
- 150019 What class of milk is used for the production of ice cream?
Class II
- 150020 A Canadian heifer weighs 350 Kg (kilograms). Convert that weight to pounds.
770 pounds
- 150021 Which region of the United States has the largest average herd size?
West
- 150022 What type of cheese is used for the purpose of calculating Cheese Yield Dollars?
Cheddar
- 150023 What is the name given to the holes in Emmentaller or Swiss Cheese?
Eyes
- 150024 Two black and white red carrier Holsteins are mated; what percentage of their offspring would be expected to be red and white?
25 Percent
- 150025 Which breed of dairy cattle is affected by the condition known as Spiderleg?
Brown Swiss
- 150026 What is the name of the sugar which is found in semen?
Fructose
- 150027 Which state had the highest production per cow in 2014?
New Mexico

- 150028 The USDA routinely surveys the milk production in the top producing states? How many states are included in the survey
23 States
- 150029 What is the term for feed material found in the small intestine of a cow?
Chyme
- 150030 A deficiency of Hemoglobin, iron, or red blood cells that prevents adequate transport of oxygen by blood to tissues is known as what?
Anemia
- 150031 Which vitamin is important in the regulation of calcium and phosphorus?
Vitamin D
- 150032 Name the cheese which is said to be shaped like a cannon ball.
Edam
- 150033 If a cow eats 40 pounds of silage that is 50% dry matter, how many pounds of dry matter has she eaten from silage?
40 Pounds x 50 Percent = 20 pounds
- 150034 Your herd is averaging 60 pounds of milk, you receive \$15 per hundred weight and it costs \$6 per day to feed your cows. What is your income over feed cost?
\$3.00
- 150035 You purchased 2000 pounds of 8-12-10 fertilizer. How many pounds of potassium are in the fertilizer?
200 Pounds
- 150036 What hormone secreted by the uterus inhibits FSH release?
Inhibin
- 150037 A defect in the JH1 haplotype is associated with what trait in Jersey cows?
Infertility
- 150038 What mineral is needed by the dairy cow in the greatest quantity?
Potassium
- 150039 What test is conducted by injecting a small amount of an antibody into the caudal fold of the tail?
Tuberculosis test
- 150040 Which month has been designated as Cheese Month?
October
- 150041 Which region of the world imports the most cheese from the United States?
Asia

150042 Which breed passes on the lowest percentage of antibodies from dam to calf?

Holstein (5.6 Percent)

150043 What term describes a dairy cow's vision?

Panoramic

150044 What is the recommended temperature for the pasteurization of waste milk for calves when using an on-farm batch pasteurizer?

145 Degrees

150045 Which VFA provides most of the energy used to develop the rumen wall?

Butyric acid

150046 What is the branch of biotechnology which is concerned with applying molecular biology to the genetic mapping and DNA sequencing of genes?

Genomics

150047 What is the one word term given to the measure of a farm's available assets which can be readily converted to cash?

Liquidity

150048 Prototheca is a colorless algae that can cause which disease in dairy cattle?

Mastitis

150049 You have 1000 pounds of grain which is of 300 pounds of 44% soybean meal and 700 pounds of corn with 9% protein. What is the protein % of the grain mix?

~~25~~ Percent

19.5

150050 Which of the contiguous states in the United States has its own system for producer payment?

California

$$\begin{array}{r} 300 \text{ lb. SBM} \cdot 44\% = 132 \text{ lb.} \\ 700 \text{ lb corn} \quad 9\% \quad \underline{63 \text{ lb.}} \\ 19.5\% \end{array}$$

2016 NAILE 4-H Dairy Quiz Bowl

Phase A - Answers

1 Which breed of dairy cattle is sometimes referred to as golden?

Guernsey

2 What is the yellow body that grows on the ovary?

Corpus luteum or CL

3 What is the portion of the feed that remains after water has been removed?

Dry matter

4 Your cow has had 5 bull calves, what is the probability that her next calf will be a bull?

50 Percent

5 What is the solid portion of milk remaining after the removal of whey called?

Curd

6 What are the finger like projections that are found in the wall of the rumen?

Papillae

7 What are forages that are harvested by grazing animals called?

Pasture

8 Undegradable describes a protein that avoids breakdown in which digestive system compartment?

Rumen

9 What is the biggest enemy of proper silage fermentation in an upright or trench silo?

Oxygen

10 What is the term used to describe a mature oocyte or sperm?

Gamete

11 Which mineral, when severely deficient in the cow's diet, often results in calves born with thin hair, hairless, stillborn or enlarged thyroids?

Iodine

12 What is the hormone called that can interfere with milk ejection when a cow becomes frightened or upset?

Adrenaline (epinephrine); Norepinephrine

13 Milk which is used in soft (spoonable) dairy products such as ice cream, cottage cheese and yogurt, is described as what class?

Class II

14 Planting annual ryegrass helps remove what mineral from the soil?

Phosphorus

15 Which mineral, in addition to copper, is necessary for the proper synthesis of hemoglobin?

Iron

16 The parotid, submaxillary, buccal and palatine are what type of gland?

Salivary glands

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

Nitrates

18 What kind of bedding supports the least amount of bacteria?

Sand (Inorganic)

19 What is the name of the waxy substance in the teat duct which helps provide a physical barrier to bacteria?

Keratin

20 If you have 30 pounds of corn silage at 34% dry matter, how many pounds of dry feed do you have?

10.2 Pounds

21 Which organic acid is produced in excess when forages are ensiled too wet reducing the palatability of the silage?

Butyric acid

22 What is the term for the hormone altering method which causes groups of cows and heifers to show heat at the same time?

Synchronization

23 What is the name for the most common simple sugar?

Glucose

24 How much feeding space should be provided for recently weaned heifers?

18 Inches

25 Which state had the highest average milk production in 2015?

Colorado

26 Which fat soluble vitamin is produced in the rumen?

Vitamin K

27 You purchase 3 tons of heifer feed that contains 18% crude protein. How many pounds of crude protein did you buy?

1080 Pounds

28 If 2 cows that are heterozygous for the Polled gene are crossed, what percent of the offspring will be Polled?

75 Percent

29 In which digestive compartment does metal accumulate?

Reticulum

30 What hormone can be administered to cause a corpus luteum to regress?

Prostaglandin F2 α

31 What is the maximum recommended weight difference between the lightest and heaviest yearling heifers within a group?

200 Pounds

32 If the farm price received for milk is \$14.00 per hundredweight, what is the price received per pound of milk?

14 Cents

33 How many cows would you expect to breed a third time in a 100 cow breeding herd, with a 50% conception rate?

25

34 When large amounts of forage are fed, which acid is predominantly produced?

Acetic acid (60 to 70 Percent of total)

35 What is the process called where the uterus returns to normal size after calving?

Involution

36 When recommended by your veterinarian, heifers should be treated with a dry cow intramammary infusion how many days prior to calving?

30 Days

37 The A2 beta-casein gene is more prominent in which breed of dairy cattle?

Guernsey

38 What is the recommended maximum number of calves per nipple in an automated calf feeding system?

25 Calves

39 What is the hormone the produced by the fetus in response to stress which initiates parturition?

Cortisol

40 What is the recommended temperature of the water at the beginning of the wash cycle for washing the bulk tank, milking equipment and milk lines?

160 degrees Fahrenheit

41 What element was sufficiently high in rainfall for crop production, but must be supplemented in fertilizers due to stricter emission standards?

Sulfur

42 Calcium sulfate is used as source of calcium and sulfur in dairy feeds. What is the common name for calcium sulfate?

Gypsum

43 A herd averages 70 lbs. of milk/cow/day. Feed costs are \$6/day. Milk is \$15.00/cwt. What is the return above feed costs per cow per day?

\$4.50 (70 lbs. milk x \$.15/lb. = \$10.50 - \$6.00 feed costs = \$4.50)

44 What acid is present in the abomasum?

Hydrochloric

45 What gland produces oxytocin?

Hypothalamus

46 A codon is comprised of how many genetic bases?

3 Bases

47 Calves drinking softened water will have high blood levels of what mineral?

Sodium

48 What is the name of the water repelling seed coat on corn kernels?

Pericarp

49 Which yogurt manufacturer pledged to no longer accept milk from cows fed GMO grains?

Dannon

50 Milk coagulation is caused by the presence of what enzyme?

Rennin (rennet)

2017 NAILE 4-H Dairy Quiz Bowl

Phase A - Answers

- 170001 Milk that is used as fluid drinking milk is classified as what class?
Class 1
- 170002 The Kjeldahl test can be used to indirectly determine the protein content in feed or milk. What element does the test measure?
Nitrogen
- 170003 The parotid, submaxillary, buccal and palatine are what type of gland?
Salivary glands
- 170004 Which sugar gives milk its sweet flavor?
Lactose
- 170005 Which breed typically transfers on average the lowest percentage of antibodies in colostrum?
Holstein
- 170006 What is the most important nutrient in all dairy rations?
Water
- 170007 Name the master gland which controls the estrous cycle.
Pituitary gland
- 170008 Ovulation occurs from which ovary most often?
Right ovary
- 170009 What is the name of the temporary structure which develops on an ovary, within which the ovum or egg develops?
Follicle
- 170010 What is the more common name for Acetonemia?
Ketosis
- 170011 What organ of the cow's body is responsible for about 25 percent of all metabolic activity?
Liver
- 170012 To what number of feedings per day should feeders be reduced when weaning calves using an automated milk feeding system?
2 per day
- 170013 Milk fever is most commonly associated with which breed?
Jersey

170014 What is the scientific term for antibodies?

Immunoglobulins

170015 What is the process called where the uterus returns to normal size after calving?

Involution

170016 The amount of cheese which can be produced from a given amount of milk is primarily affected by which component?

Protein

170017 Where would you most likely find traumatic gastritis?

Reticulum

170018 What is the primary simple sugar in semen?

Fructose

170019 Which state had the highest average production per cow in 2016?

Colorado

170020 When in the milking order should first lactation cows be milked?

First

170021 Volatile Fatty Acids (VFA) are a main source of energy for the dairy cow. Where are VFA's produced?

Rumen

170022 Which acid should be in the highest concentration in well fermented silage?

Acetic acid *lactic acid*

170023 Which of the contiguous states in the United States has its own system for producer payment?

California

170024 What is the science called that deals with hormones and their actions?

Endocrinology

170025 What is the primary hormone produced by the ovaries of a pregnant cow?

Progesterone

170026 What is the SCC standard for milk to *qualify* for sale in the international market?

Less than 400,000 cells per milliliter

170027 What is the technical term for the eversion of the teat orifice?

Hyperkeratosis

- 170028 One should be especially concerned with what contaminant when feeding distillers' grains in cool wet years?
Mycotoxins - or specific names
- 170029 If a herd's conception rate is 40%, what proportion of the cows which were bred should be pregnant after 2 services?
64 Percent
- 170030 What hormone secreted by the uterus inhibits FSH release?
Inhibin
- 170031 What is the recommended maximum number of calves per nipple in an automated calf feeding system?
25 Calves
- 170032 What is the maximum recommended weight difference between the lightest and heaviest yearling heifers within a group?
200 Pounds
- 170033 What hormone blocks the oxytocin receptors?
Adrenaline; Epinephrine
- 170034 Excess ammonia is converted into what by the liver and kidneys then subsequently excreted in the urine?
Urea
- 170035 You purchase 3 tons of heifer feed that contains 18% crude protein. How many pounds of crude protein did you buy?
1080 Pounds
- 170036 Which AI company was acquired by Select Sires in the past year?
Accelerated Genetics
- 170037 What is the general term used to describe an infected uterus?
Metritis
- 170038 What is the recommended temperature for the pasteurization of waste milk for calves when using an on-farm batch pasteurizer?
145 Degrees
- 170039 What is the one word term given to the measure of a farm's available assets which can be readily converted to cash?
Liquidity
- 170040 What is the most common gas found in oxygen-limiting silos?
Carbon dioxide
- 170041 What term describes a dairy cow's vision?
Panoramic

170042 What tissue is monitored for residual drug levels at slaughter?

Kidneys

170043 A process has been developed which produces vodka from what dairy waste product?

Whey

170044 What is the technical term for the liquid which seeps from a silo?

Leachate

170045 How many pounds of silage at 40 percent moisture must be fed to have 1000 pounds of dry matter?

2500 Pounds

1667/103

170046 Over 2 million dairy cattle have been tested using what genetic test?

Genomic testing

170047 What is the most common type of tractor overturn incident?

Side overturn

170048 The FDA recently increased testing for what drug?

Tetracycline

170049 What mineral is needed by the dairy cow in the greatest quantity?

Potassium

170050 What is the term for different pathogenic types of bacteria?

Serotypes

2013 NAILE 4-H Dairy Quiz Bowl

Phase A - Answers

- 180001 What is the most essential nutrient for a dairy cow?
Water
- 180002 If a cow has produced 3 bull calves, what is the chance that her next calf will be a heifer?
50 Percent
- 180003 What is the most popular cheese in the U.S.?
Mozzarella
- 180004 What is another name for a cow's mammary gland?
Udder
- 180005 After fertilization in the oviduct the zygote travels where for further growth?
Uterus
- 180006 Soybean meal is an excellent source of which nutrient?
Protein
- 180007 What is the name of the funnel shaped structure that partially surrounds the ovary?
Infundibulum
- 180008 What hormone is at its peak near the onset of standing estrus?
Estrogen
- 180009 What is the stomach compartment called which consists of a network arrangement of tissue often referred to as the honeycomb?
Reticulum
- 180010 What is the term for the process by which udder tissue reverts to a non-milk-producing state after drying off?
Involution
- 180011 Conception rates are typically lowest for cows during which season?
Summer
- 180012 What cellular material is needed to determine an animal's genetic fingerprint?
DNA
- 180013 What is the term that means no oxygen is present in the rumen mixture?
Anaerobic

- 180014 What factor has the most effect on the amount of cheese that you can get from a pound of milk?
Protein
- 180015 What is the current regulatory maximum SCC for herds in the United States?
750,000 Cells/ml
- 180016 What is the name of the national dairy processor education program?
MilkPEP
- 180017 Which state produces over 25 percent of the cheese in the U.S.?
Wisconsin
- 180018 What mineral in milk has been linked to weight loss?
Calcium
- 180019 What hormone is produced in the pineal gland?
Melatonin
- 180020 Other than water, what is the largest single solid component in normal milk?
Lactose
- 180021 What hormone is released prior to calving which enables the cervix to soften and stretch in preparation for expelling the calf?
Relaxin
- 180022 Which state had the highest average milk production in 2017?
Michigan
- 180023 What percentage of its genetic material does the fetus receive from its maternal granddam?
25 Percent
- 180024 Where are mature sperm stored in the male reproductive tract?
Epididymis
- 180025 What is the highest grade butter sold in the United States?
Grade AA
- 180026 What term is used to measure the accuracy of a genetic evaluation?
Reliability
- 180027 Which country is the largest importer of cheese from the U.S.?
Mexico

180028 What characteristic of legumes allows them to tolerate dry conditions better than many forages?

Taproot

180029 What nutrients are generally measured in International Units (IU)?

Vitamins

180030 What is term for the process of chewing food again during rumination called?

Remastication

180031 Riboflavin is mainly found in milk in what form?

Lactoflavin

180032 What hormone contracts the blood vessels and diminishes the effect of oxytocin

Adrenaline

180033 Where is gonadotropin releasing hormone (GnRH) produced?

Hypothalamus

180034 The most effective foot bath solutions for controlling digital dermatitis contain what compound?

Copper sulfate

180035 What is the term for the condition when bacteria from a local infection enter the blood stream and have systemic effects?

Sepsis

180036 What is the term for vaccines that are developed from pathogens on a specific farm for that farm?

Autogenous

180037 Tocopherol is the chemical name for which vitamin?

Vitamin E

180038 What is the term for a protein that acts as a catalyst in starting or speeding up specific chemical reactions?

Enzyme

180039 Silage from brown midrib corn is more digestible than normal corn silage because it is lower in what component?

Lignin

180040 If a herd's conception rate is 30%, what proportion of the cows which are bred, should be pregnant after 2 services?

51 Percent

180041 What are the substances called that are foreign to the blood stream, stimulate the production of a specific antibody and then react with it?

Antigen

180042 The terms "floury" and "flinty" refer to what grain?

Corn

180043 What is the scientific term that describes any birth that requires assistance, takes longer than normal, reduces calf viability or injures the mother?

Dystocia

180044 Which species has been genomically tested more than cattle?

Humans

180045 You purchase 2 tons of heifer feed that contains 18% crude protein. How many pounds of crude protein did you buy?

720 Pounds

180046 A new vaccine was recently released for which mastitis causing organism?

Klebsiella

180047 What is the term for bacteria which survive pasteurization?

Thermoduric

180048 What is the scientific name for circling disease?

Listeriosis

180049 What is the term for the suitability for planting crops?

Tilth

180050 What is the cycle of reactions called that converts glucose into pyruvate while at the same time producing ATP called?

Glycolysis