

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 1, Phase A

- 1) Which type of cattle has higher conception rates: Dairy or Beef?

Beef

- 2) What is the name of the condition in which a cow comes into heat every few days; gestation, anestrus, cystic, or lactation?

Cystic

- 3) Ringworm is caused by which of the following: a fungus, bacteria, or virus?

Fungus

- 4) When feeding calves, which protein source is the best: vegetable protein or milk protein?

Milk protein

## Junior Packet 1, Phase B

1) Name 3 internal parasites of dairy cows

Lung worm

Round worm

Stomach worms

Liver flukes

Coccidian

2) What are 4 of the 5 major nutrients found in feedstuffs?

Energy

Protein

Vitamins

Minerals

Water

3) What are the 2 main gases produced in the rumen?

Methane

Carbon Dioxide

4) Name 4 types of bedding typically used for dairy cattle

Straw

Sand

Recycled manure solids

Newspaper

Sawdust

Shavings

Old hay

Wood chips

Almond hulls

Rubber mats

Feed by-products

### Junior Packet 1, Phase C

- 1) How many pounds of whole milk does it take to make one pound of cheese?  
10 pounds
- 2) What structure provides major support for the udder?  
Median Suspensory Ligament
- 3) When milk is pasteurized, it is heated to 161 degrees for how many seconds?  
15 seconds
- 4) In reference to feeding, what does TMR stand for?  
Total Mixed Ration
- 5) What does the Babcock test measure?  
Butterfat composition
- 6) What are the tiny fingerlike projections that line the wall of the rumen?  
Papillae
- 7) What hormone in a cow causes milk letdown?  
Oxytocin
- 8) Name a body part of the cow that can become twisted or wry?  
Tail or nose
- 9) What country does the Ayrshire breed originate from?  
Scotland
- 10) Where does hardware disease occur?  
Reticulum
- 11) What is another name for ascorbic acid?  
Vitamin C
- 12) When was the milk bottle invented?  
1884
- 13) What does the acronym FDA stand for?  
Food and Drug Administration

14) What instrument is used to measure colostrum quality?

Colostrometer

15) What type of crop shields the soil to reduce erosion, add organic matter, and capture nutrients otherwise lost by runoff?

Cover crop

16) The World Dairy Expo is held in what city and state every year?

Madison, Wisconsin

**2016 NY District Junior  
4-H Dairy Bowl Contest**

**Junior Packet 2, Phase A**

- 1) Which of the following describes “the release of an egg from a follicle”:  
parturition, palpation, or ovulation?

Ovulation

- 2) When entering a show ring, what is the appropriate direction to lead your animal;  
clockwise or counterclockwise?

Clockwise

- 3) Blackleg is caused by which of the following; a virus, fungus, or bacterium?

Bacterium

- 4) Which of the following is classified as a legume; corn, alfalfa, triticale, or fescue?

Alfalfa

## Junior Packet 2, Phase B

1) Name 3 ways a dairy cow excretes (or loses) water

Breathing

Feces

Milk

Sweat

Urine

2) What are 4 reasons for culling a dairy cow from the herd?

Low production

Mastitis

Illness

Poor reproductive performance

Poor udder quality

Poor feet and legs

Lameness

Disease

Temperament

Limited mobility

High somatic cell count

Age

3) Name 3 micro-minerals required by dairy cows

Cobalt, Copper, Iodine, Iron, Manganese, Selenium, Zinc

4) Name 4 metabolic diseases in dairy cattle

Ketosis

Milk fever

Displaced abomasum

Retained placenta

Laminitis

## Junior Packet 2, Phase C

- 1) What is the name for the technique in which sperm fertilizes the ovum in a laboratory dish, grows into a young embryo in the lab, and is then transferred to a cow?

In vitro fertilization

- 2) What term describes the appearance and performance characteristics of an animal?

Phenotype

- 3) Which enzyme is needed for rapid lactose breakdown?

Lactase

- 4) Which bovine stomach component is most similar to a human's stomach?

Abomasum

- 5) What is a castrated bull called?

Steer

- 6) In what year was Hoard's Dairyman founded?

1885

- 7) What is the name of the small projections that line the wall of the small intestine?

Villi

- 8) What is the name of the byproduct recovered when cheese is made?

Whey

- 9) Name the skin disease that is caused by Bovine Papilloma virus.

Warts

- 10) What do the initials USDA stand for?

United States Department of Agriculture

- 11) How many servings of low fat or fat free dairy products are recommended each day for a healthy diet?

3 servings

- 12) What provides a calf with passive immunity?

Immunoglobulins or antibodies (from colostrum)

13) In what country did the Holstein cow originate?

Netherlands

14) Who is the current United States Secretary of Agriculture?

Tom Vilsack

15) What month is National Grilled Cheese Month?

April

16) What is metritis?

An infection of the uterus

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 3, Phase A

- 1) True or false: Massaging the teat end is one of the most important functions of the teat cup liner

True

- 2) What is the technical name for mad cow disease?

Bovine spongiform encephalopathy

- 3) What functions to alternate vacuum and atmospheric pressure between the liner and the teat cup shell of a milking machine?

Pulsator

- 4) True or false: All cows contribute somatic cells to the bulk tank.

True

### **Junior Packet 3, Phase B**

1) Name 3 diseases of dairy cattle with a color in their name.

Red water

Red nose

Black leg

Blue tongue

White muscle disease

Pink eye

2) Name 2 methods that can be used to store colostrum.

Freeze

Refrigerate

Add preservative acid

Ferment

3) Name 3 areas on the farm that contribute waste to the nutrient management plan

Feeding area

Housing area

Holding pen

Return alley

Foot baths

Milking parlor

Run-off areas

4) In working with dairy cows, name 4 clinical symptoms of mastitis you could see in the milk or udder

Flakes

Clots

Watery milk

Swollen/hot quarter

Presence of blood

Stringy milk

### Junior Packet 3, Phase C

- 1) What is the term for the accumulation of fluid in the udder?  
Edema
- 2) What is the ideal rumen pH?  
5.9-6.2
- 3) What is the term used to describe management practices that protect the herd from entry of new diseases and minimize the spread of diseases in the herd?  
Biosecurity
- 4) What is the name of the instrument used to give an animal a pill or bolus?  
Balling gun
- 5) What country is the largest exporter of dairy products?  
New Zealand
- 6) If an animal is said to be naturally polled, what is the animal born without?  
Horns or horn buttons
- 7) Out of all of the dairy breeds, which has the longest gestation period?  
Brown Swiss
- 8) What vitamin is added to milk at processing and is essential for efficient use of calcium and phosphorous in bone growth?  
Vitamin D
- 9) What is the single largest expense on a dairy farm?  
Feed
- 10) Approximately how many gallons of water does a cow drink in a day?  
30-50 gallons
- 11) Which breed of dairy cattle is known for its "golden milk"?  
Guernsey
- 12) A bag of 15-10-8 fertilizer contains what percent nitrogen?  
15%
- 13) The letter in a bull's stud code number tells you what about him?  
His breed

14) What is the primary acid found in the abomasum?

Hydrochloric acid

15) Who is the 2016-2017 New York State Dairy Princess?

Emily Ooms

16) Name the hormone that is critical in the initiation and maintenance of lactation.

Prolactin

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 4, Phase A

1) What is the name of the wax-like material that lines the teat canal?

Keratin

2) In which country is the cow considered to be Holy?

India

3) What is the definition of castration?

Removing the testes of the male animal

4) A gallon of milk weighs how many pounds?

8.6 pounds

## Junior Packet 4, Phase B

1) What are the two main functions of the large intestine?

Water absorption

Storage of waste materials

2) Name four methods or practices used to help in reducing soil erosion

Wind breaks

Cover crops

Strip cropping

Contour cropping

Terracing

Grass waterways

Reduced tillage/no tillage

Soil seeding

Planting hedge rows

3) Name 3 ways for testing pregnancy in cows

Palpation

Testing hormones in milk

Testing hormones in blood

Ultrasound

4) Give 3 different types of storages used to store silage

Bunker silo

Trench silo

Upright/tower silo

Ag bag

Oxygen limiting silo

### Junior Packet 4, Phase C

- 1) What does CIP stand for when referring to dairy milking equipment sanitation?  
Clean In Place
- 2) What is the name used for a diagram of a dairy animal's ancestors?  
Pedigree
- 3) What is the term used in dairy animals to describe a difficult or abnormal calving?  
Dystocia
- 4) In a cow's diet, her major source of energy comes from what class of nutrients?  
Carbohydrates
- 5) Who is the New York State Commissioner of Agriculture?  
Richard Ball
- 6) Manyplies is another name for what ruminant stomach compartment?  
Omasum
- 7) What is the more common name for Acetonemia?  
Ketosis
- 8) In herd management, what is the period of time from one calving to the next called?  
Calving interval
- 9) What portion of the plant wall is not digestable?  
Lignin
- 10) What is the name for the grape-like clusters of cells in the udder that produce milk?  
Alveoli
- 11) Which breed of dairy cattle has the lowest rate of dystocia?  
Jersey
- 12) Ideally, cows should not be in the holding pen for more than what length of time?  
1 hour
- 13) What piece of milk processing equipment heats the milk to kill bacteria?  
Pasteurizer

14) What item did Dr. Harvey Thatcher invent?

The milk bottle

15) On average, cows have a flight zone of how many feet?

5 feet

16) What is the name for the type of forages that are seeded every year and its growth is completed in one crop year?

Annual

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 5, Phase A

- 1) What is the approximate gestation length for a dairy cow: 21 days, 150 days, 280 days, or 340 days?

280 days

- 2) What is the name for the human health condition characterized by inadequately digesting the sugar found in dairy products?

Lactose intolerance

- 3) True or false: The digestibility of a plant decreases as the plant matures

True

- 4) How much colostrum should a calf receive in the first feeding?

3-4 quarts or 8-10% of its body weight

## Junior Packet 5, Phase B

1) Name three sources of environmental mastitis – causing organisms

Manure

Bedding

Mud

Water

Feed

2) Name two ways that a pathogen can gain entry into a calf's body

Mouth

Navel

Nose

3) Name two methods for reducing heat stress in cattle

Shade

Ventilation

Cooling

Sprinklers

Fans

Free-choice water

4) Name 3 types of milking parlors

Parallel

Herringbone

Rotary

Flatbone

Parabone

Side opening

Robotic

### Junior Packet 5, Phase C

- 1) What part of the cow's back is located between the chine and the rump?  
The loin
- 2) What is the name of the manufacturing process which is used to disperse fat evenly throughout milk?  
Homogenization
- 3) What is used as the reference point to determine the height of the udder floor?  
Hock
- 4) What term describes a cow's habit of choosing certain portions of a total mixed ration over other particles?  
Sorting
- 5) If corn silage is 65% moisture, how many pounds of dry matter are in 80 pounds of silage?  
28 pounds
- 6) Somatic cell counts are generally highest during which season?  
Summer
- 7) What is the term for the rate of decline in a cow's production after she reaches her peak milk production for a lactation?  
Persistency
- 8) Which organ secretes prostaglandin?  
Uterus
- 9) What is the name of the maternal component of the placental attachment?  
Caruncle
- 10) Which enzyme causes milk to curdle?  
Rennin
- 11) What is the name for the loose skin on the underside of the cow's neck?  
Dewlap
- 12) What part of the cell is DNA found in?  
Nucleus

13) In what year was the Journal of Dairy Science published?  
1917

14) In which city and state is the National 4-H Dairy Conference held?  
Madison, Wisconsin

15) What term describes the act of taking a young animal off of milk as their main source of nutrition?  
Weaning

16) Which stomach component is also known as the fermentation vat?  
Rumen

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 6, Phase A

- 1) What is the name of the on-farm test that uses a white paddle and solution to detect subclinical mastitis?

California Mastitis Test

- 2) What term is used to describe the total energy content of a feed?

Gross energy

- 3) What is described as the process of flushing fertilized eggs from donor cows and implanting them in recipient cows?

Embryo transfer

- 4) What is the name of the tube that connects the mouth to the rumen?

Esophagus

## Junior Packet 6, Phase B

1) Name 3 factors that influence the amount of water consumed by dairy cows

Body size

Environmental temperature

Water temperature

Water quality

Relative humidity

Diet

Milk production

2) Name 4 potential by-products that can be used in feedstuffs

Cottonseed hulls

Dried brewers grain

Soybean hulls

Cottonseed meal

Soybean meal

Distillers grains

Peanut meal

Citrus pulp

3) Name the two most common contagious mastitis-causing pathogens

Staph. aureus

Strep. Ag

4) List the top 3 milk producing states in order from first to third

California

Wisconsin

Idaho

## Junior Packet 6, Phase C

- 1) What does the acronym SMV stand for?  
Slow Moving Vehicle
- 2) What do we call the condition in the cow when the abomasum twists out of normal position?  
Displaced abomasum or DA
- 3) Name the primary protein found in milk  
Casein
- 4) In dairy cattle judging, what are you referring to when you describe this part as having a higher and wider reattachment?  
Rear udder
- 5) What is referred to as the measure of how well cows turn feed into milk?  
Feed efficiency
- 6) What does it mean when an animal is culled?  
She is removed from the herd
- 7) What mineral needs to be adequate in a dairy cow's diet to prevent grass tetany?  
Magnesium
- 8) Mycotoxins in feed are caused by what?  
Molds
- 9) What percent water is milk?  
87%
- 10) What is the technical term for chewing?  
Mastication
- 11) What is the official state snack of New York?  
Yogurt
- 12) What is the common name for Brucellosis?  
Bang's Disease
- 13) What year did the first cow arrive at the Jamestown colony?  
1611

14) What month is National Dairy month?

June

15) Who was the first state to make tampering with show cows a crime?

Ohio

16) What does the acronym GMO stand for?

Genetically Modified Organism

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 7, Phase A

- 1) What is the most popular milk sold in the U.S.?  
2 percent reduced fat
  
- 2) What is morbidity rate?  
The number of sick animals during a specific period of time
  
- 3) The process of adding vitamins to milk is known as?  
Fortification
  
- 4) What is the name of the milk promotion campaign, launched by MilkPEP, that replaced the "Got Milk" campaign in 2014?  
Milk Life

## Junior Packet 7, Phase B

1) What are 3 signs of estrus in a dairy cow?

Restlessness

Bellowing

Mounting another cow

Standing to be mounted

Clear mucus discharge from vulva

Red, swollen vulva

2) Name two factors that can effect a dairy herd's conception rate

Heat detection accuracy

Herd (cow) fertility

Semen (bull) fertility

Technician competency

3) Name two methods that can commonly be used to identify calves

Eartag

Freeze branding

Photo

Sketch

Tattoo

4) Name four signs of illness in calves

Poor appetite

Cough

Watery manure

Nasal discharge

Drooping ears

Dull eyes

Lack of energy

Elevated temperature

## Junior Packet 7, Phase C

- 1) Which type of mastitis continues over a long period of time with progressive development of scar tissue and simultaneous reduction in milk yield?

Chronic mastitis

- 2) What piece of farm equipment is used to narrow the swath for a baler and to move the wetter material at the bottom of the windrow through the outside?

Rake or Merger

- 3) When rations are properly formulated for DCAD, they can reduce metabolic disorders. What does DCAD stand for?

Dietary Cation-Anion Difference

- 4) What is defined as the time from first tactical interaction, or the start of stimulation, to milking unit attachment?

Lag or prep time

- 5) In regards to stall design what is a cow's imprint length?

The space a cow occupies when she is lying down – (from knee to tail)

- 6) Where is the National Dairy Shrine located?

Fort Atkinson, Wisconsin

- 7) What month is National Ice Cream Month?

July

- 8) What U.S. state claims the most farms and the most acres in farming?

Texas

- 9) What is the name of the new fluid milk beverage Coca-Cola is producing with Select Milk Producers?

Fairlife

- 10) What is the unit of measurement used when injecting vaccine in dairy cattle?

CC's or milliliters

- 11) According to the Dairy Calf & Heifer Association a 90-pound calf should receive how many quarts of colostrum in the first four hours of life?

4 quarts

12)The U.S. Olympic Committee announced a long term partnership through the year 2020 with what yogurt maker?

Chobani

13)It is recommended that calves should wear jackets when the temperature drops below what temperature?

40 degrees Fahrenheit

14)What does NMC stand for?

National Mastitis Council

15) What is the largest factor affecting forage drying?

Sunlight, wide swath or cutting at height of 3 to 4 inches

16)Which enzyme that is produced in the abomasum of baby calves causes milk to curdle?

Rennin

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Junior Packet 8, Phase A

1) What is another term used to describe extra teats?

Supernumerary teats

2) Which acid is the precursor for glucose?

Propionic acid

3) Which contains more Neutral Detergent Fiber (NDF), grasses or legumes?

Grasses

4) Which stomach component is located closest to the heart?

The reticulum

## Junior Packet 8, Phase B

1) Name 3 potential causes of mastitis

Failure to teat dip

Faulty milking equipment

Improper dry cow management

Poor housing/environment

Poor milking practices

Poor sanitation

2) Name two fat soluble vitamins.

A, D, E, K

3) What are the three critical factors in colostrum management?

Quality

Quantity

Timing

4) Name 3 Class I dairy products.

Chocolate milk

Whole milk

Reduced fat milk (2%)

Low fat milk (1%)

Fat free milk

### Junior Packet 8, Phase C

- 1) When a cow's teats point outwards too far, what is this called?

Strutting

- 2) In the area of milk production and marketing, what does the acronym COOL stand for?

Country of Origin Labeling

- 3) What are the building blocks of fats called?

Lipids

- 4) When leading a dairy cow in a showmanship class, which side of the cow should you be leading from?

The cow's left side

- 5) What is hypocalcemia commonly known as?

Milk fever

- 6) What is a common method used to control udder hair length?

Singe or burn

- 7) What is another name for the yellow body?

Corpus Luteum

- 8) What key characteristic of alfalfa allows it to help restore subsoil that has been compacted?

Deep-rooting system

- 9) When is the scientific name for a fertilized egg?

Zygote

- 10) A deficiency of what vitamin causes Rickets in calves?

Vitamin D

- 11) What piece of equipment divides solid manure components from liquid components?

Manure separator

12) How many points are allotted to Udder on the PDCA Dairy Cow Unified Scorecard?

40 points

13) How many pounds of milk is required to make one pound of butter?

21.2 pounds

15) Healthy cows will have how many rumen contractions per minute?

1 to 2 per minute

16) How much time is required after milking for the teat end to close entirely?

1 hour

## 2016 NY District Junior 4-H Dairy Bowl Contest

### Extra Questions

1) Which age group on the dairy farm generally has the highest incidences of dystocia?

First-calf heifers

2) What flavoring is added to cheese and butter to improve its taste?

Salt

3) What do the letters CNMP stand for in reference to CAFO legislation?

Comprehensive Nutrient Management Plan

4) What term describes the days from calving until the first breeding date?

Days to first service

5) A dry cow requires the largest quantity of which mineral?

Potassium

6) What structure of the bulk tank stirs the milk to help with cooling and to ensure a uniform product mixture for sampling?

Agitator

7) What milking production measurement does the term RHA stand for?

Rolling Herd Average

8) What is the adult cow's body structure through which an unborn fetus receives its nutrients?

Placenta

9) A deficiency of what vitamin causes white muscle disease?

Vitamin E

10) A mature cow can produce how many gallons of saliva per day?

12 to 20 gallons

11) Where on the corn plant is the milk line found?

Kernel

12) Saliva is enriched with what compound that acts as a buffer in the cow to regulate rumen pH?

Sodium bicarbonate

13) What is the name of the feed material found in the small intestine of the dairy cow?

Chyme

14) What is the name of the blister-like structure on the ovary that contains the egg before ovulation?

A follicle

15) What does NDC stand for?

National Dairy Council

### **Extra Team Questions**

1) Name four of the five major components in milk.

Protein (Casein is acceptable)

Fat

Water

Lactose

Vitamins and minerals

2) When your cow is ill and needs treatment with antibiotics, it is important to avoid drug residues in her milk. What are two practices used to help prevent residues?

Keep accurate treatment records

Identify all treated cattle (written or colored leg bands)

Designate specific employees to access and administer treatments

Only use treatments directed by your vet

Never use medication that is not approved for use in cattle

3) Name three functions of saliva.

Moistens food

Lubricates food

Acts as a buffer

Provides fluid base for many nutrients

Provides the proper environment for bacterial growth

4) Name 4 things that a judge looks for in a fitting and showmanship class.

Animal's condition

Cleanliness

Clipping

Grooming

Appearance of exhibitor

Leading of the animal

Posing of the animal