



Dairy Skill-a-thon Study Guide For Barry County Dairy Program

4-H PLEDGE

Each 4-H member will need to fill in the missing words of the 4-H pledge.

I pledge my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service, and
my Health to better living,
for my club, my community,
my country and my world.

BODY PARTS

If you are participating in the dairy feeder project you will need to label the parts of a dairy steer. If you are participating in the dairy heifer or cow project you will need to label the parts of a dairy cow. The age of the exhibitor will determine the number of parts that will need to be identified. Junior exhibitors (ages 9-11) will identify ten body parts. Intermediate exhibitors (ages 12-14) will identify twenty body parts. Senior exhibitors (ages 15-18) will identify thirty plus body parts by listing them.

DAIRY BREEDS and CHARACTERISTICS

Junior and Intermediate exhibitors (ages 9-14) will match breed names. Intermediate and Senior exhibitors will answer multiple choice questions on breed characteristics. Please read the attached dairy breed sheet.

FEED NUTRIENT CATEGORIES

All exhibitors will answer questions on feed nutrients. Junior and Intermediate exhibitors must match five basic feeds such as corn silage, haylage, grass hay, alfalfa, and corn. Senior exhibitors must correctly identify and label the following feeds; corn silage, haylage, alfalfa hay, grass hay, corn, soybean meal, ground corn, distillers grain, canola meal and cotton seed or hulls.

Nutrients are elements in feed that are used by the animal for maintenance, growth, and production. Some are needed in large amounts while others are needed in small amounts.

In general nutrients are divided into five categories: water, protein, energy (carbohydrates and fats), minerals and vitamins.

WATER

Water is the most essential nutrient and the nutrient to which livestock should always have access. A mature animal's body is about 75% water. Water comprises most of the blood. Blood carries nutrients to cells throughout the body and also transports waste products away. Water is necessary for certain chemical reactions to occur. Water acts as the body's cooling system and helps regulate body heat. Water also acts as a lubricant for the body's organs. Any living thing can live longer without food than without water.

PROTEINS

Proteins are complex chemical substances from which the body tissues are built. Each protein is comprised of smaller units called amino acids. Each species of livestock has the ability within their body to produce some amino acids. These compounds are called non-essential amino acids. Other necessary amino acids cannot be manufactured by the animal's body and are called essential amino acids. Essential amino acids must be supplied through the feed. Proteins can be used as energy, too. When feed contains too much protein, the extra protein can be used as energy. Soybean meal and fish meal are high in protein. Corn and barley are lower in protein. Proteins are used by the animal to produce muscle, bone, blood, skin, fur, hair, wool, hooves and horns. Examples of protein feeds include: cottonseed meal, soybean meal, linseed meal, corn gluten meal, distiller grains, brewers grain, and meat meal. Non-protein nitrogen sources such as urea can be used by ruminant animals to make protein.

ENERGY (CARBOHYDRATES AND FATS)

Carbohydrates and fats are used as fuel to supply energy. The main use of energy is to allow chemical reactions to occur, resulting in conversion of feed to body tissues such as meat. Energy is constantly needed by the body. It is the "body fuel" which is used to maintain body temperature and to produce body movement. Energy nutrients that are not used are stored as fat until needed. Sugar, starch, and fiber are carbohydrates. Grains contain a lot of carbohydrates. Corn oil and tallow are fats. Fat furnishes at least two and one half times more energy than equal amounts of carbohydrates.

MINERALS

Minerals are used to build bones and teeth and in chemical reactions necessary for many life processes. For example, calcium is needed for bone formation. Phosphorus is involved in bone growth and maintenance of good appetite and water consumption. Minerals required in very small amounts are called trace or micro minerals. These are generally supplied by using a mineral or mineral/vitamin pre-mix. Some examples include copper, zinc, and iron. Larger amounts of required minerals are macro minerals. These include calcium, phosphorus, sodium and chloride. These compounds may be included in a mineral pre-mix or purchased separately. Examples of mineral supplements are bone meal, defluorinated phosphate, dicalcium phosphate, salt, trace mineralized salt, oyster shells, and limestone.

VITAMINS

Vitamins are compounds which help the body absorb and use other nutrients. Vitamins are essential for growth and are needed in small amounts by the animal. There are two types of vitamins: fat soluble (A,D,E and K), and water soluble (B complex and C). Some animals can make their own vitamins with their bodies, other species cannot. Because of this fact, a steer

should not be fed the same vitamin pre-mix as a pig. Vitamins are generally supplied in animal feed in the form of a supplement or provided by consumption of green pasture.

EQUIPMENT NEEDS

Dairy Feeder

Syringe
Stethoscope
Elastrator bands
Elastrator bander
Balling gun
Vet wrap
Show stick
Show halter
Dehorers
IV Tube
Tagging pliers
Leg band
Intra-nasal canula
Magnet

Heifer or Cow

Syringe
Stethoscope
Insemination rod
O.B. chain
CMT paddle
IV tubing
Mastitis tube
Infusion pipette
Elastrator bands
Elastrator bander
Tagging pliers
Leg band
Antibiotic test (snap)
Milk filter
Inflation
Shell
Claw
Pulsator
Ketosticx
Magnet
Intra-nasal canula

GENERAL HEALTH

Seniors will be asked questions about general health on their quiz only.

The average body temperature is 101.5 degrees Fahrenheit for a bovine. Knowing how to read a medicine bottle label in order to know the name of the medication, the purpose of the medication, the withholding time, the amount to administer, and where to administer the drug is very important information that can be found on the label. Please review the medicine label and the different ways to administer the medication.

Credit: 2004 Dairy Resource Handbook

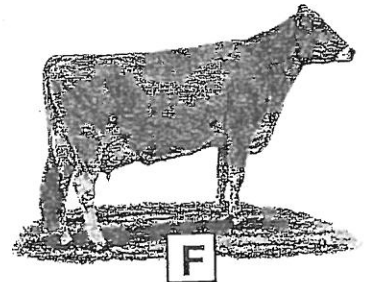
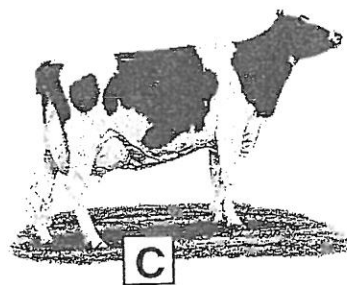
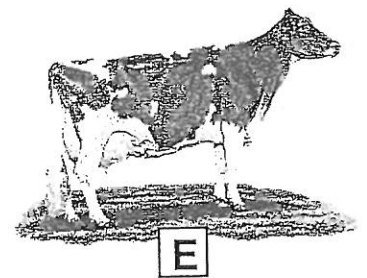
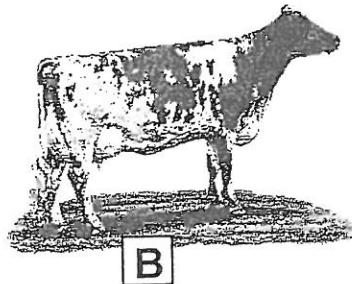
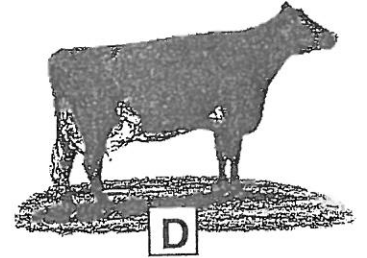
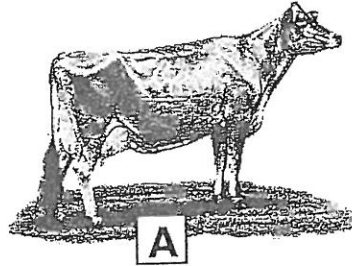
Credit: 2008 The Ohio State University Extension and Ohio 4-H Youth Development

Credit: 2005 Dairy 1 Cowabunga! Dairy Project Youth Activity Guide

Credit: Purina Feeds – Dairy Breeds of North America

Dairy Breeds

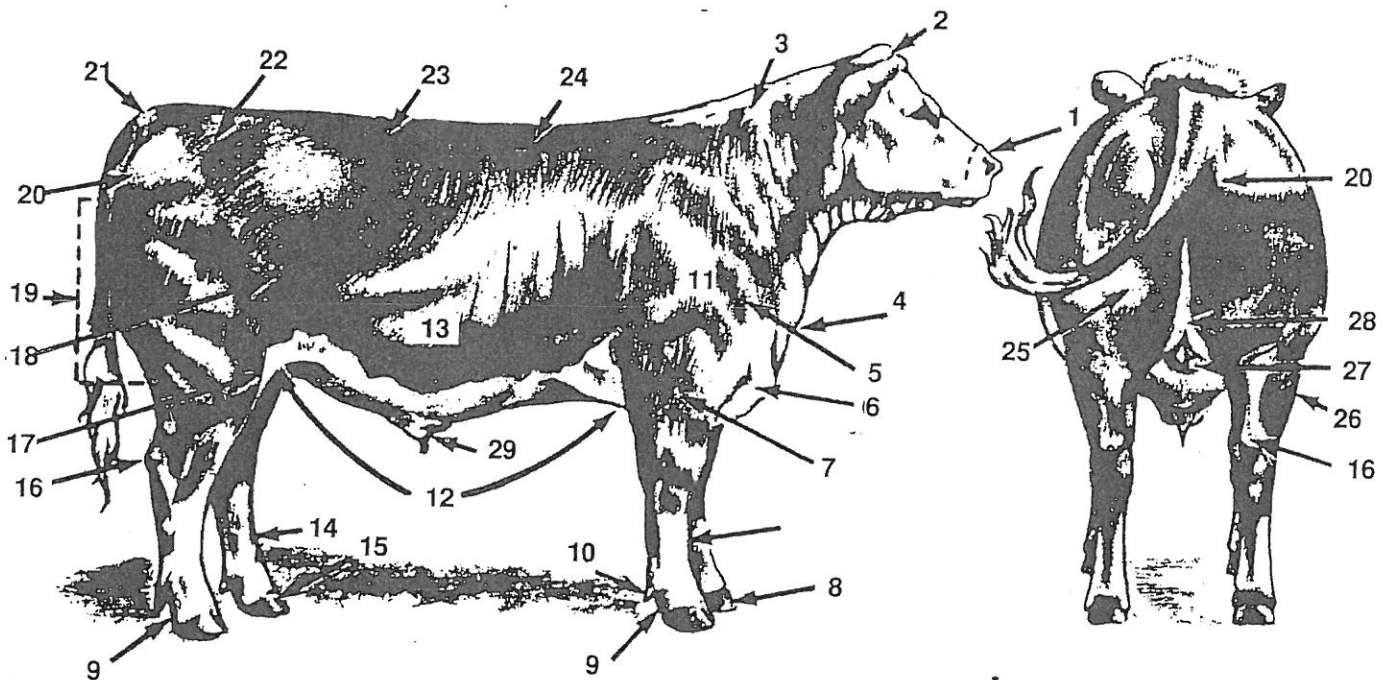
Match the Breeds



- A Jersey
- B Ayrshire
- C Holstein
- D Milking Shorthorn
- E Guernsey
- F Brown Swiss

Credit: Purina Feeds - Dairy Breeds of North America

BODY PARTS OF A DAIRY FEEDER STEER



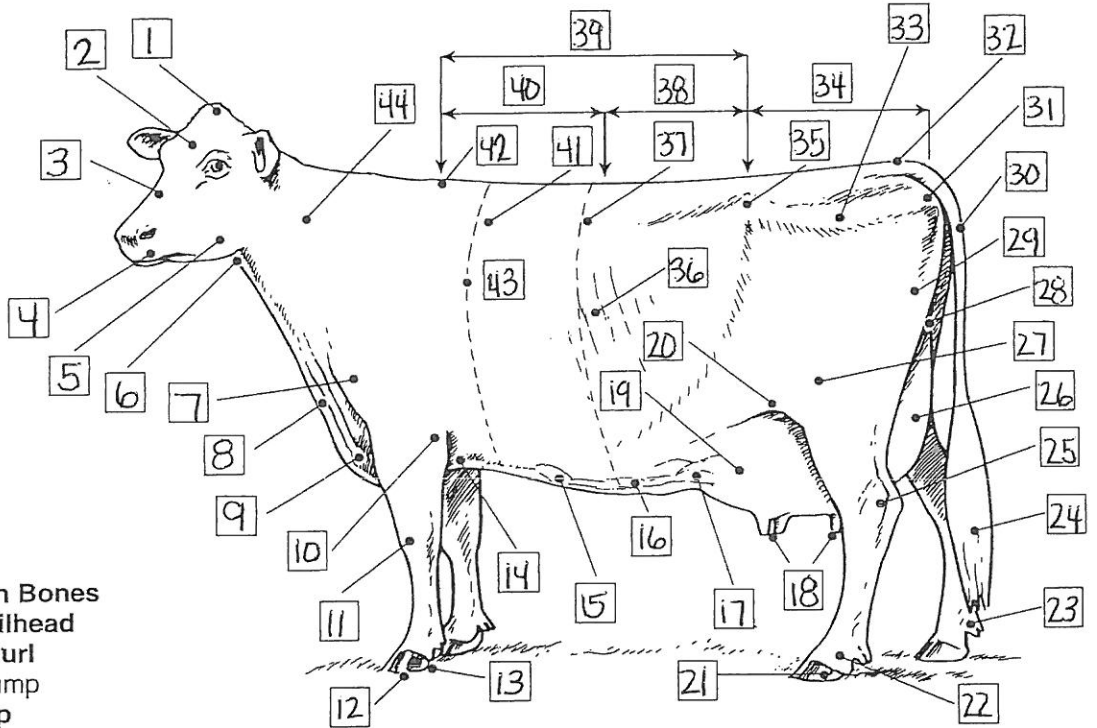
- | | | | |
|----------------------|--------------------|---------------------|---------------------|
| 1. Muzzle | 8. Hoof (toe) | 15. Hoof (foot) | 22. Rump |
| 2. Poll | 9. Pastern | 16. Hock | 23. Loin |
| 3. Crest (neck) | 10. Dew claw | 17. Stifle joint | 24. Rib |
| 4. Dew lap | 11. Shoulder | 18. Stifle muscle | 25. Inside of round |
| 5. Point of Shoulder | 12. Flank | 19. Quarter (round) | 26. Gaskin |
| 6. Brisket | 13. Belly-middle | 20. Pins | 27. Cod |
| 7. Forearm | 14. Cannon (shank) | 21. Tail head | 28. Twist |
| | | | 29. Sheath |

Figure 3. Parts of the Beef Animal (steer).

Body Parts

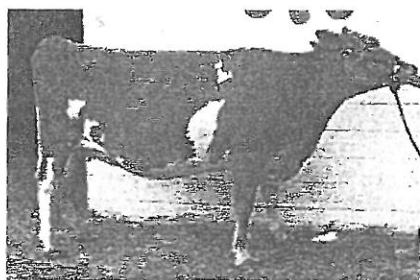
Body Parts Word Bank

1. Poll
2. Forehead
3. Bridge of Nose
4. Muzzle
5. Jaw
6. Throat
7. Point of Shoulder
8. Dewlap
9. Brisket
10. Point of Elbow
11. Knee
12. Sole
13. Heel
14. Chest Floor
15. Milk Wells
16. Milk Veins
17. Fore Udder Attachment
18. Teats
19. Fore Udder
20. Flank
21. Hoof
22. Pastern
23. Dewclaw
24. Switch
25. Hock
26. Rear Udder
27. Stifle
28. Rear Udder Attachment
29. Thigh
30. Tail
31. Pin Bones
32. Tailhead
33. Thurl
34. Rump
35. Hip
36. Ribs
37. Barrel
38. Loin
39. Back
40. Chine
41. Crops
42. Withers
43. Heart Girth
44. Neck

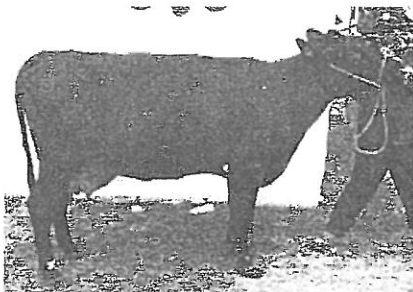


DAIRY BREEDS

Study the breed names and characteristics on this page. Intermediate and Senior members be able to identify two characteristics of each breed.



GUERNSEY - this breed was developed on an island in the English Channel to produce high fat milk for making butter. This breed is known for its gentle nature, and yellow-tinted milk. Fawn and white markings characterize this breed.



MILKING SHORTHORN - this breed was developed from an English breed of cattle. Their breed association was formed in 1972. Intermediate in size and milk production, this breed is an efficient converter of feed into meat or milk, and has a high heat tolerance. These animals can be red, white, or roan in color.



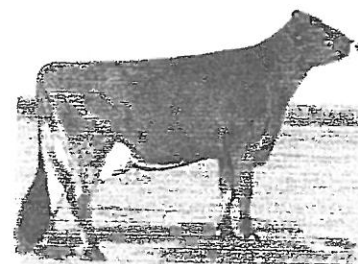
HOLSTEIN - this breed originated in the Netherlands. It is the largest breed in size, and the most popular. They are known for producing the highest volume of milk of all the breeds. They are black and white in color, but may be red and white.



JERSEY - they were developed on an island in the English Channel. They are the smallest cows in size, and produce milk that is the highest in fat and protein. A shade of fawn with or without white markings characterizes this breed.



AYRSHIRE - developed in 1750 in the county of Ayr, Scotland, this breed is medium in size with average milk production. They are characterized by strongly-attached, well-shaped udders and are known for their extreme hardiness and good foraging ability. These cows may be red or mahogany and white.



Brown Swiss - Most dairy historians agree that Brown Swiss cattle are the oldest of all dairy breeds. The beautiful brown cows were developed in north-eastern parts of Switzerland.

Medication Insert

Name of Drug OMNIBIOTIC

(Hydrocillin in Aqueous Suspension) Active Ingredient(s)

For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine, and Sheep

Species and Animal Class

Read Entire Brochure Carefully Before Using This Product.

Active Ingredients: Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in an aqueous base.

Approved Uses

Indications: Cattle — bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. Swine — erysipelas, pneumonia. Sheep — foot rot, pneumonia, mastitis, and other infections in these species caused by or associated with hydrocillin-susceptible organisms.

Recommended Daily Dosage

The usual dose is 2 ml per 100 lb. of body weight given once daily. Maximum dose is 10 ml/day.

<u>Dosages</u>	<i>Body Weight</i>	<i>Dosage</i>
	100 lb.	2 ml
	300 lb.	6 ml
	500 lb. or more	10 ml

Continue treatment for 1 to 2 days after symptoms disappear.

Route of Administration

Caution: 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material in the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 3. Treated animals should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. 4. Omnibiotic must be stored between 2° and 8°C (36° and 46°F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

Cautions and Warnings

Storage Requirements

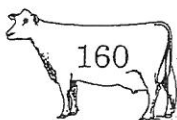
Warning: Milk that has been taken from animals during treatment and for 48 hours after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.

Withholding Times

Sizes Available

How Supplied: Omnibiotic is available in vials of 100 ml.

This activity was adapted from information found in the *Quality Assurance and Animal Care Youth Education Program*. Based upon work supported by the Extension Service, United States Department of Agriculture, under special project number 93-EFSQ-4096.



Guide to Reading the Medication (package) Insert Label

(sometimes found on outer label)

- **Species and Animal Class:** The species and animal class in which the drug is to be used. (Example of species: Cattle, sheep, or swine; Example of class: lactating or non-lactating).
- **Approved Uses (Indications):** The situation for which the drug is to be used. Indicates the particular type of animal, stage of lactation, condition, illness, etc.
- **Dosage:** How much to give and how often/how many times to give.
- **Route of Administration:** How is the product given to the animal? Basically, there are four routes of administering medications:
 1. **Oral Route**—Administering drugs through the mouth. Tablets, pills, capsules, and liquid medications are easily administered orally. A drenching tube, balling gun, or oral dosage syringe is usually used to place the liquid or pill at the base of the tongue at the back of the mouth. Make sure the medication goes down the throat and the animal swallows it. Take care the animal is not choked by the medication going down the trachea (windpipe). You can also administer medication in the animal's feed or water.
 2. **Topical Route**—Applying the medication to the skin or to the mucous membranes of the eyes, ears, nasal passages. Such medications are available as ointments, aqueous solutions, powders, and sprays. Do

not allow these products to come in contact with the animal's eyes, nose, reproductive tract, or mouth unless they are specifically formulated for that use.

3. **Injectable Route**—

Administering the drug directly into an animal's body with a syringe and needle. Injections are the most common method of administering medications to individual animals. The label will specify which of the following injection methods to use.

Subcutaneous (SQ) injections are accomplished by inserting the needle just under the skin and not into the muscle. This is important because SQ injectables are designed for a slower rate of absorption or are highly irritating to muscle tissue.

Intramuscular (IM) injections are the most commonly used. This is accomplished by inserting the needle straight into the skin and deep into the muscle.

Intravenous (IV) injections are sometimes used. Some medications are labeled for "intravenous injection only" because they are strong irritants to muscle tissue and can cause damage. The IV route of administration provides a rapid means of getting the medication into the system of a sick animal as well as eliminating the chance of tissue damage. IV injections are given directly into the bloodstream.

