

Name ANSWER KEY Contestant # _____ County _____

Senior Retail Meat Cut Identification – 2014

INSTRUCTIONS: For each picture, use the columns on the right to choose the number or letter that indicates your answer for each retail meat cut. Use capital letters and write neatly. **Seniors** provide answers for retail cut name, species of cut, and wholesale cut of origin. Each question is worth 5 points (150 points total for Seniors).

	<u>Retail Cut Name</u>	<u>Species of Cut</u>	<u>Wholesale Cut of Origin</u>
1.	<u>48</u>	<u>L</u>	<u>J</u>
2.	<u>13</u>	<u>B</u>	<u>D</u>
3.	<u>66</u>	<u>P</u>	<u>R</u>
4.	<u>2</u>	<u>B</u>	<u>A</u>
5.	<u>63</u>	<u>L</u>	<u>O</u>
6.	<u>77</u>	<u>P</u>	<u>T</u>
7.	<u>50</u>	<u>L</u>	<u>K</u>
8.	<u>73</u>	<u>P</u>	<u>T</u>
9.	<u>46</u>	<u>B</u>	<u>H</u>
10.	<u>57</u>	<u>L</u>	<u>L</u>

Retail Names – to be used in answer column 1 by Seniors

Beef Retail Meat Cuts

- | | | |
|-------------------------------|------------------------------------|---------------------------|
| 1. Beef for stew | 17. Sirloin steak, shell | 32. Bottom round roast |
| 2. Brisket, point half | 18. Sirloin steak, boneless | 33. Bottom round steak |
| 3. Brisket, whole | 19. Tenderloin steak | 34. Eye round roast |
| 4. Arm roast | 20. Porterhouse steak | 35. Eye round steak |
| 5. Arm roast, boneless | 21. T-bone steak | 36. Heel of round roast |
| 6. Arm steak | 22. Top loin steak | 37. Rump roast, boneless |
| 7. Arm steak, boneless | 23. Top loin steak, boneless | 38. Round steak |
| 8. Blade roast | 24. Short ribs | 39. Round steak, boneless |
| 9. Blade steak | 25. Skirt steak | 40. Tip roast |
| 10. 7-bone roast | 26. Rib roast, large end | 41. Tip roast, cap off |
| 11. 7-bone steak | 27. Rib roast, small end | 42. Tip steak |
| 12. Flank steak | 28. Rib steak, small end | 43. Tip steak, cap off |
| 13. Sirloin steak, flat bone | 29. Rib steak, small end, boneless | 44. Top round roast |
| 14. Sirloin steak, pin bone | 30. Ribeye roast | 45. Top round steak |
| 15. Sirloin steak, round bone | 31. Ribeye steak | 46. Cross cuts |
| 16. Sirloin steak, wedge bone | | 47. Cross cuts, boneless |

Lamb Retail Meat Cuts

- | | | |
|--------------------------|----------------------|-------------------------|
| 48. Breast | 54. Sirloin chop | 60. Rib roast |
| 49. Breast riblets | 55. Leg sirloin half | 61. Rib roast, boneless |
| 50. American style roast | 56. Loin chop | 62. Shanks |
| 51. Leg Center slice | 57. Loin double chop | 63. Blade chop |
| 52. French style roast | 58. Loin roast | 64. Neck slice |
| 53. Leg shank half | 59. Rib chop | 65. Shoulder square cut |

Pork Retail Meat Cuts

- | | | |
|-----------------------------|-----------------------|------------------------|
| 66. Fresh ham center slice | 73. Center rib roast | 80. Arm roast |
| 67. Fresh ham rump portion | 74. Center loin roast | 81. Arm steak |
| 68. Fresh ham shank portion | 75. Loin chop | 82. Blade Boston roast |
| 69. Fresh side pork | 76. Rib chop | 83. Sliced bacon |
| 70. Blade chop | 77. Sirloin chop | 84. Smoked jowl |
| 71. Blade roast | 78. Top loin chop | 85. Smoked Canadian |
| 72. Butterfly chop | 79. Arm picnic roast | Style Bacon |

Species of Cut – to be used in answer column 2 by Seniors

(You may use the letter more than once!!)

B. Beef

L. Lamb

P. Pork

Wholesale Cut of Origin – to be used in answer column 3 by Seniors

Beef Wholesale Cuts

- A. Brisket
B. Chuck
C. Flank
D. Loin
E. Plate
F. Rib
G. Round
H. Shank
I. Variety cut

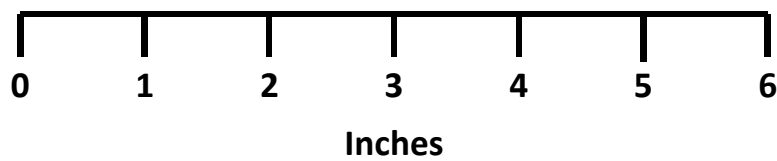
Lamb Wholesale Cuts

- J. Breast
K. Leg
L. Loin
M. Rack
N. Shank
O. Shoulder

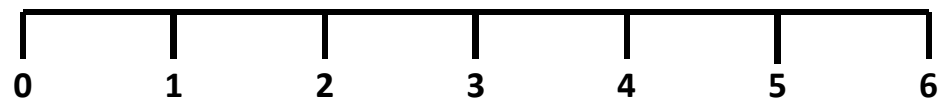
Pork Wholesale Cuts

- P. Belly (Side, Bacon)
Q. Boston Butt
R. Ham
S. Jowl
T. Loin
U. Picnic Shoulder

1

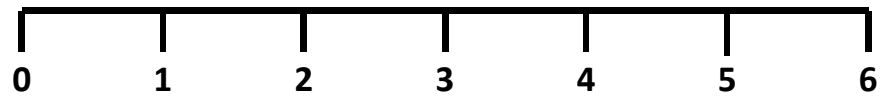


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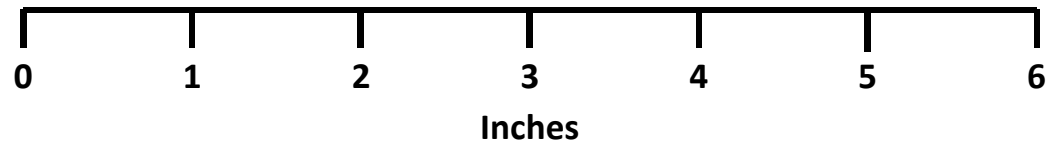
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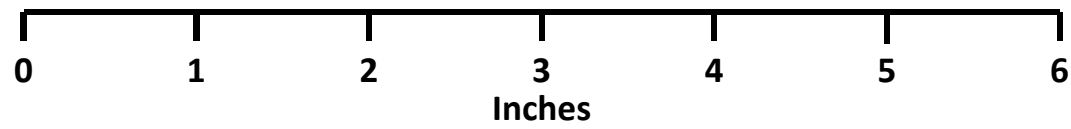


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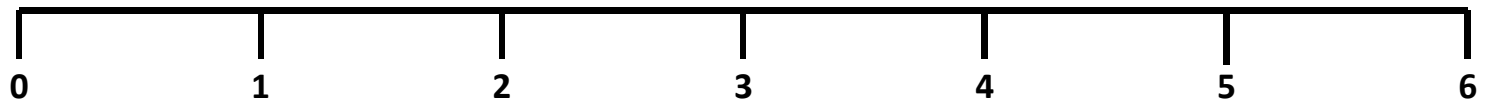
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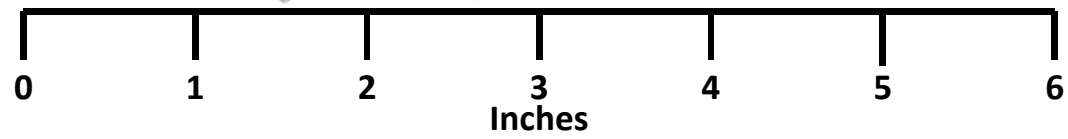


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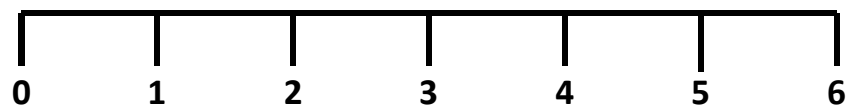
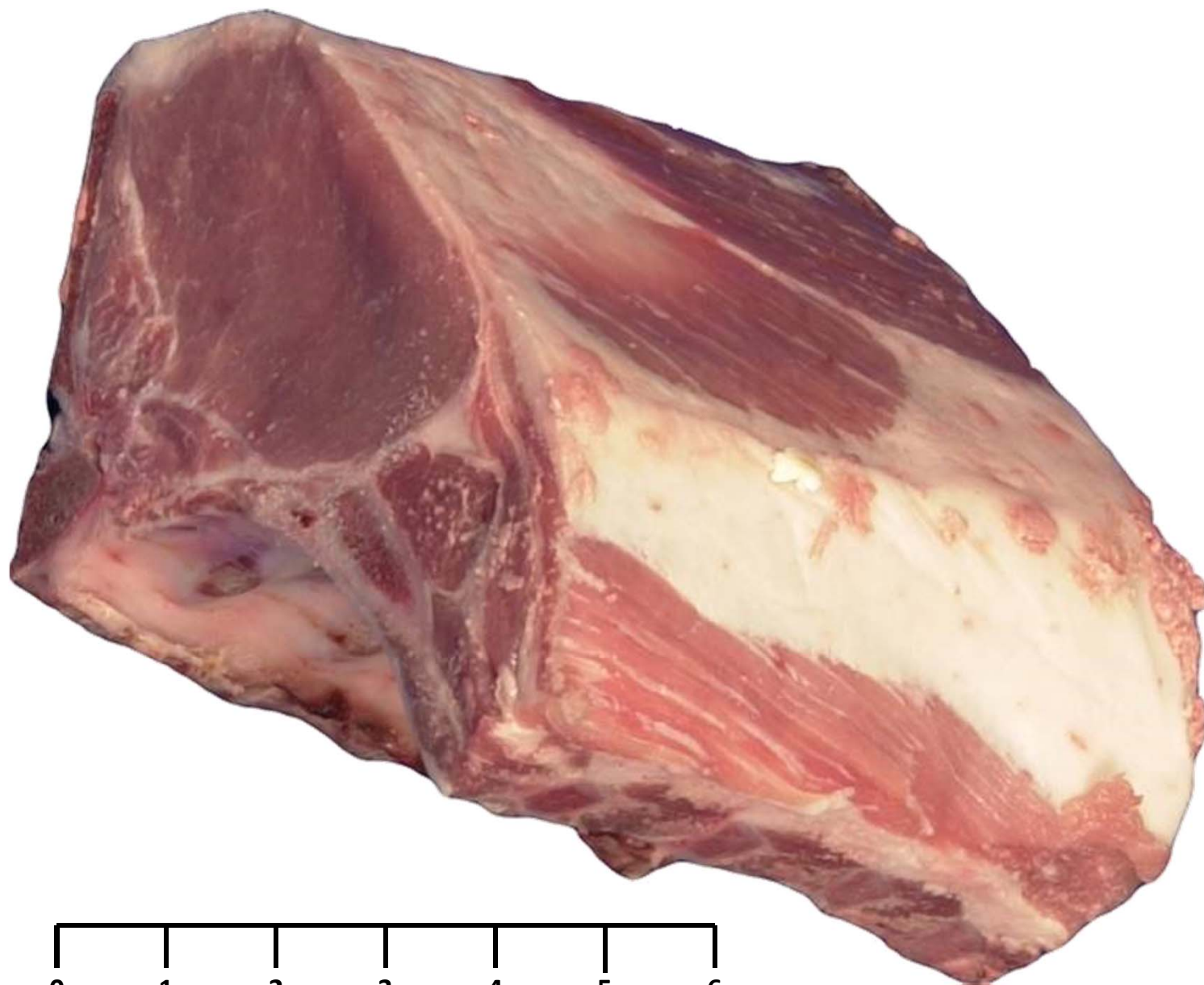


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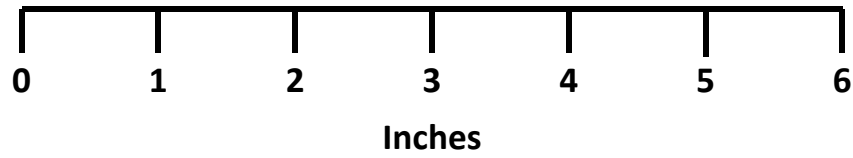


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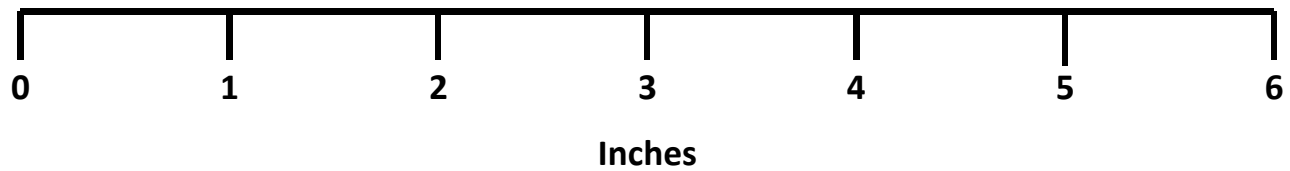


Inches

9



10



Name ANSWER KEY Contestant # _____ County _____

Senior Livestock Feed Identification – 2014

INSTRUCTIONS: For each sample, use the columns on the right to choose the number or letter that indicates your answer for each livestock feedstuff. Use capital letters and write neatly. **Seniors** provide answers for feedstuff name, nutrient group, and characteristics/uses of the feedstuff. Each question is worth 5 points (150 points total for Seniors).

	Feedstuff Name	Nutrient Group	Characteristics/Uses
1.	<u>21</u>	<u>B or C</u>	<u>M</u>
2.	<u>37</u>	<u>C</u>	<u>E</u>
3.	<u>38</u>	<u>B</u>	<u>N</u>
4.	<u>73</u>	<u>B</u>	<u>C</u>
5.	<u>33</u>	<u>P</u>	<u>H</u>
6.	<u>52</u>	<u>P or F</u>	<u>G</u>
7.	<u>1</u>	<u>P or C</u>	<u>A</u>
8.	<u>56</u>	<u>C</u>	<u>I</u>
9.	<u>49</u>	<u>C</u>	<u>D</u>
10.	<u>15</u>	<u>C</u>	<u>B</u>

Feed Names – to be used in answer column 1 by **Seniors**

- | | | |
|---|--------------------------------|-------------------------------|
| 1. Alfalfa cubes | 25. Grain sorghum (whole) | 51. Soybean meal |
| 2. Alfalfa pasture | 26. Ground ear corn | 52. Soybeans (whole) |
| 3. Barley (whole) | 27. Ground limestone | 53. Spray-dried animal plasma |
| 4. Blood meal | 28. Ground shelled corn | 54. Spray-dried whey |
| 5. Brewers dried grain | 29. Kentucky Bluegrass pasture | 55. Steam flaked corn |
| 6. Canola meal | 30. L-lysine HCl | 56. Steam rolled barley |
| 7. Copper sulfate | 31. L-threonine | 57. Steam rolled oats |
| 8. Corn distillers dried grain | 32. L-tryptophan | 58. Steamed bone meal |
| 9. Corn distillers dried grain with soluble | 33. Linseed meal | 59. Sunflower meal |
| 10. Corn gluten feed | 34. Liquid molasses | 60. Tall Fescue hay |
| 11. Copper Sulfate | 35. Meat and bone meal | 61. Tall Fescue pasture |
| 12. Cottonseed (whole) | 36. Millet (whole) | 62. Timothy hay |
| 13. Cottonseed hulls | 37. Oats (whole) | 63. Timothy pasture |
| 14. Cottonseed meal | 38. Oat hulls | 64. Trace-mineral premix |
| 15. Cracked shelled corn | 39. Orchardgrass hay | 65. Trace-mineralized salt |
| 16. Crimped oats | 40. Orchardgrass pasture | 66. Triticale (whole) |
| 17. Defluorinated rock phosphate | 41. Oyster shells | 67. Tryptosine |
| 18. Dicalcium phosphate | 42. Peanut meal | 68. Urea |
| 19. DL-methionine | 43. Red Clover hay | 69. Vegetable oil |
| 20. Dried Beet pulp | 44. Red Clover pasture | 70. Vitamin premix |
| 21. Dried molasses | 45. Roller dried whey | 71. Wheat (whole) |
| 22. Dried skim milk | 46. Rye (whole) | 72. Wheat bran |
| 23. Feather meal | 47. Salt, white | 73. Wheat middlings |
| 24. Fish meal | 48. Santoquin | 74. White Clover hay |
| | 49. Shelled corn | 75. White Clover pasture |
| | 50. Soybean hulls | |

Feeds Nutrient Groups – to be used in answer column 2 by **Seniors**

(You may use the letter more than once!!)

- | | | |
|--------------------------|------------|------------|
| B. By-product feed | M. Mineral | V. Vitamin |
| C. Carbohydrate (energy) | P. Protein | |
| F. Fats (energy) | | |

Important Characteristics/Uses of Feedstuffs – to be used in answer column 3 by and **Seniors**

- | | |
|--|---|
| A. Excellent feedstuff for horses that is high in protein, minerals, and vitamins. | H. Produced by grinding the flakes which remain after the oil is extracted from whole flaxseed. |
| B. Shelled corn that has been passed through a roller mill to break it into smaller particles. | I. Whole barley that is subjected to high-moisture steam for a short period of time (usually 1 to 8 minutes) and then rolled to produce a flat flake. |
| C. Byproduct of wheat flour milling that consists of the fine particles of wheat bran, wheat shorts, wheat germ, wheat flour, and some of the offal from the “tail of the mill”. | J. High in protein, and contains active immunoglobulins. |
| D. Bulk density = 56 pounds/bushel | K. Commonly used source of calcium and phosphorus in livestock feeds. |
| E. Bulk density = 32 pounds/bushel | L. Also referred to as bluestone. |
| F. Bulk density = 48 pounds/bushel | M. Dried byproduct of the manufacture of sugar from either sugar beets or, more commonly, sugarcane. |
| G. Rarely fed to livestock in the whole, full-fat form, but can be if first heated to destroy anti-nutritional factors (trypsin inhibitor). | N. Primarily used as a ruminant roughage extender during times when forages are in short supply. |

Name ANSWER KEY Contestant # _____ County _____

Senior Livestock Breeds Identification – 2014

INSTRUCTIONS: For each picture, use the columns on the right to choose the number or letter that indicates your answer for each livestock breed. Use capital letters and write neatly. **Seniors** provide answers for breed name, origin of breed, and important characteristics/traits. Each question is worth 5 points (150 points total for Seniors).

	Breed Name	Origin of Breed	Important Traits
1.	<u>16</u>	<u>L</u>	<u>A</u>
2.	<u>33</u>	<u>A</u>	<u>J</u>
3.	<u>53</u>	<u>C</u>	<u>Q</u>
4.	<u>9</u>	<u>K</u>	<u>E</u>
5.	<u>26</u>	<u>I</u>	<u>F</u>
6.	<u>52</u>	<u>H</u>	<u>P</u>
7.	<u>32</u>	<u>B</u>	<u>L</u>
8.	<u>17</u>	<u>F</u>	<u>G</u>
9.	<u>44</u>	<u>D</u>	<u>N</u>
10.	<u>8</u>	<u>E</u>	<u>D</u>

Breed Names – to be used in answer column 1 by **Seniors**

Beef Breeds	Goat Breeds	Sheep Breeds	Swine Breeds
1. Angus	17. Alpine	30. Cheviot	47. Berkshire
2. Brahman	18. American Cashmere	31. Columbia	48. Chester White
3. Brangus	19. Angora	32. Corriedale	49. Duroc
4. Charolais	20. Boer	33. Dorper	50. Hampshire
5. Chianina	21. Kiko	34. Dorset	51. Hereford
6. Gelbvieh	22. Lamancha	35. Finnsheep	52. Landrace
7. Hereford	23. Nubian	36. Hampshire	53. Pietrain
8. Limousin	24. Oberhasli	37. Katahdin	54. Poland China
9. Maine Anjou	25. Pygmy	38. Merino	55. Spotted
10. Polled Hereford	26. Saanen	39. Montadale	56. Tamworth
11. Red Angus	27. Spanish	40. Oxford	57. Yorkshire
12. Red Poll	28. Tennessee Fainting	41. Polled Dorset	
13. Santa Gertrudis	29. Toggenburg	42. Rambouillet	
14. Shorthorn		43. Romney	
15. Simmental		44. Southdown	
16. Tarentaise		45. Suffolk	
		46. White Dorper	

Origins of Breeds – to be used in answer column 2 by **Seniors**

A. South Africa	F. Alps of Switzerland	J. Herefordshire, England
B. New Zealand and Australia	G. Putnam & Hendricks Counties in Indiana	K. Maine and Anjou river valleys in France
C. Pietrain, Belgium	H. Descendants of the Danish Landrace	L. Tarentaise valley of France
D. Sussex, England	I. Saanen vally of Switzerland	
E. Limousin and Marche regions of France		

Important Characteristics/Traits Origins of Breeds – to be used in answer column 3 by and **Seniors**

Beef Cattle Characteristics/Traits

- A. Milking ability, calving ease, and thriftiness.
- B. Growth rate, muscling, early puberty, calving ease, and mothering ability
- C. Foraging ability, docile, and good fertility.
- D. Heavily muscled, high carcass yield, growth rate, and feed efficiency.
- E. Muscling and growth rate, disposition, and milk production.

Goats Characteristics/Traits

- F. Heavy milkers, rugged bone, and vigor. Sensitive to sunlight and perform best in cooler conditions.
- G. Hardy, adaptable animals that thrive in any climate while maintaining good health and excellent production.
- H. High butterfat content extended breeding season, best suited for hot conditions, and multi-purpose use (milk, meat, and hide).
- I. Meat yield, growth rate, high milk production

Sheep Characteristics/Traits

- J. Extremely hardy, fast growing, fertile, can survive and thrive under harsh conditions
- K. Carcass conformation, growth rate, lambing percentage, and wool production
- L. Good carcass quality, fast growth, and combines good meat and wool characteristics.
- M. Carcass conformation, growth rate, feed conversion, and milking ability.
- N. Carcass conformation, early maturity, and adaptability to varied climates.

Swine Characteristics/Traits

- O. Aggressive breeder and high growth rate.
- P. Prolificacy (litter size), milking ability, mothering ability.
- Q. Extreme muscling and leanness.
- R. Excellent rate of gain and feed efficiency.
- S. Meat quality (intramuscular fat)

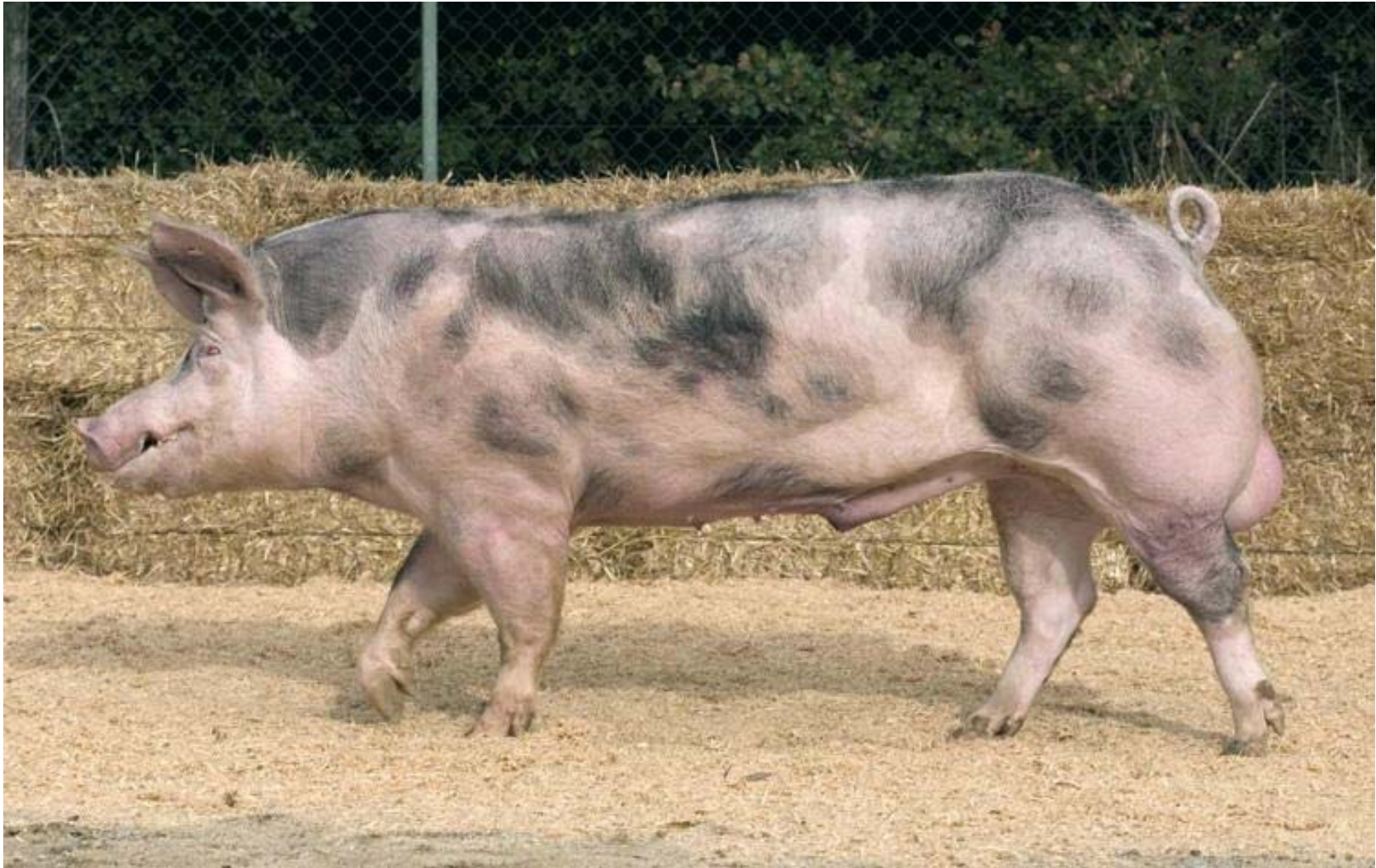
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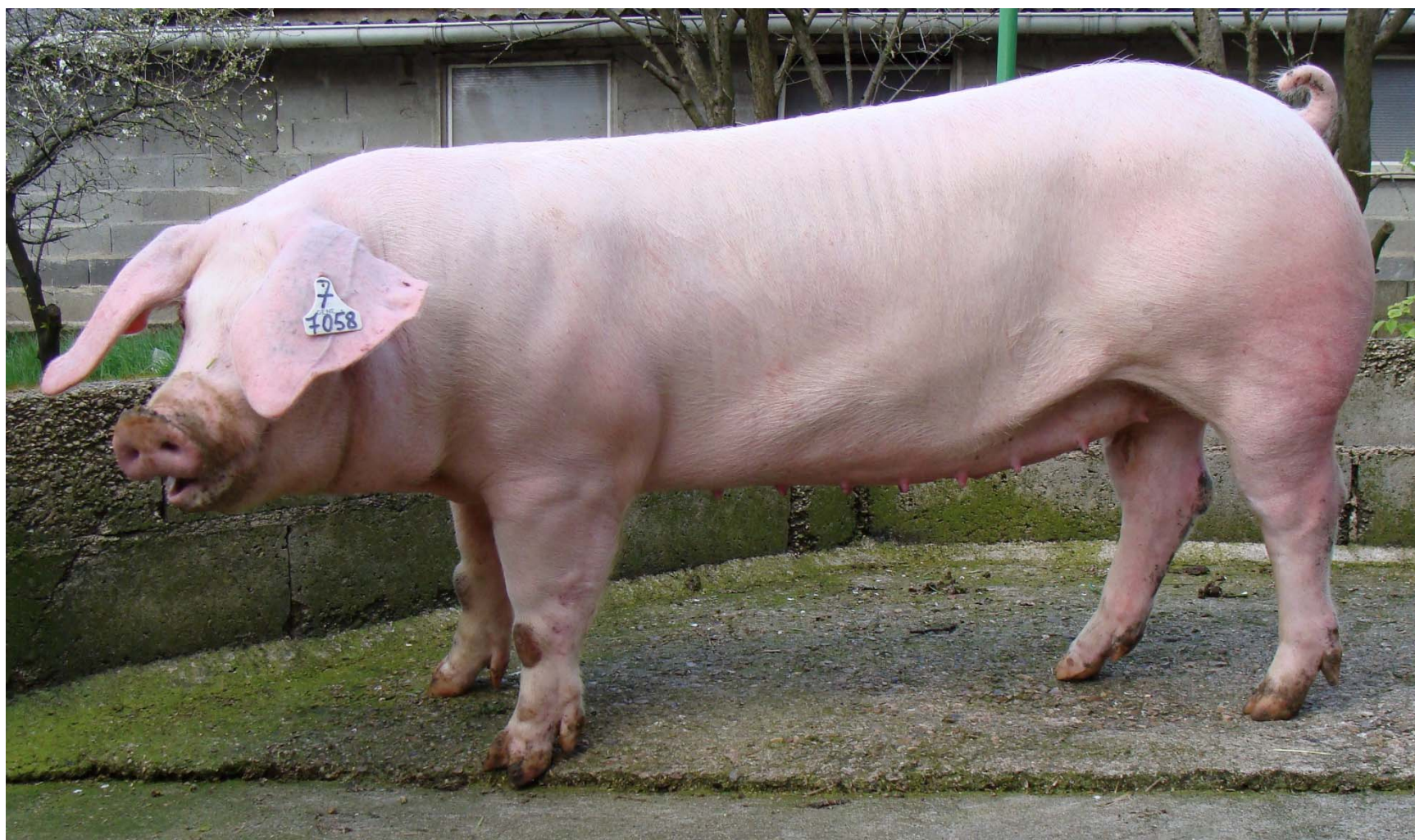
4



5



6



7



8



9



10



Name ANSWER KEY Contestant # _____ County _____

Senior Livestock and Meat Equipment Identification – 2014

INSTRUCTIONS: For each picture, use the columns on the right to choose the number or letter that indicates your answer for each piece of equipment. Use capital letters and write neatly. **Seniors** provide answers for livestock/meat equipment names and equipment use. Each question is worth 5 points (100 points total for Seniors).

	Equipment Name	Equipment Use
1.	<u>36</u>	<u>N</u>
2.	<u>33</u>	<u>I</u>
3.	<u>14</u>	<u>E</u>
4.	<u>47</u>	<u>C</u>
5.	<u>20</u>	<u>G</u>
6.	<u>39</u>	<u>Q</u>
7.	<u>4</u>	<u>H</u>
8.	<u>16</u>	<u>O</u>
9.	<u>61</u>	<u>M</u>
10.	<u>19</u>	<u>L</u>

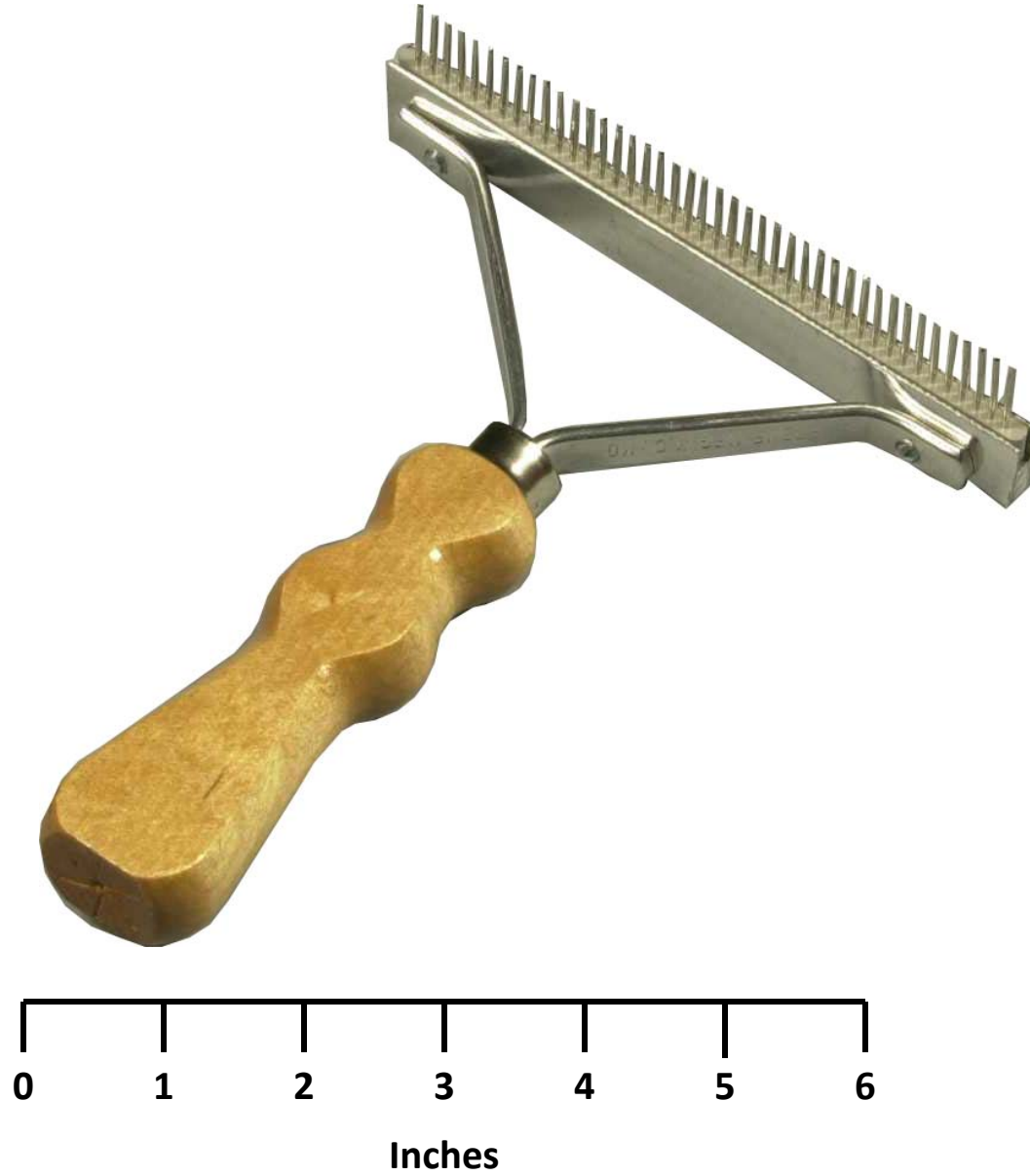
Equipment Names – to be used in answer column 1 by **Seniors**

Livestock Equipment		Meat Equipment
1. All-in-one castrator/docker	26. Lamb tube feeder	43. Backfat ruler
2. Artificial insemination pipettes (Swine)	27. Needle teeth nippers	44. Band saw
3. Bowl waterer	28. Nipple waterer	45. Bone dust scraper
4. Balling gun	29. Nose ring	46. Boning knife
5. Barnes dehorner	30. Nose ring pliers	47. Bowl chopper
6. Cattle clippers	31. Obstetrical (O.B.) chain	48. Dehairing machine
7. Clipper comb	32. Plastic Sleeve	49. Electrical stunner
8. Clipper cutter	33. Ralgro pellet injector	50. Emulsifier
9. Currycomb	34. Ram marking harness	51. Ham net
10. Disposable syringes	35. Rumen magnate	52. Hand saw
11. Drench gun	36. Scotch Comb	53. Hard hat
12. Ear notchers	37. Slap tattoo	54. Loin eye area grid
13. Ear tag	38. SYNOVEX Implant cartridge	55. Meat grinder
14. Elastrator	39. SYNOVEX Implant gun	56. Meat grinder auger
15. Electric branding iron	40. Syringe Needles	57. Meat grinder knife
16. Electric docker	41. Tattoo pliers	58. Meat grinder plate
17. Electric fence wire roller	42. Wood post electric fence insulator	59. Meat grinder stuffing rod
18. Electric sheep shears		60. Meat hook
19. Emascutome (Burdizzo)		61. Meat tenderizer
20. Ewe prolapse retainer		62. Meat trolley
21. Fencing pliers		63. Metal knife scabbard
22. Foot rot shears		64. Rubber apron
23. Freeze branding iron		65. Sharpening steel
24. Hanging Scale		66. Smoke house
25. Hand sheep shears		67. Thermometer
		68. Tumbler
		69. Vacuum sausage stuffer
		70. Whale saw

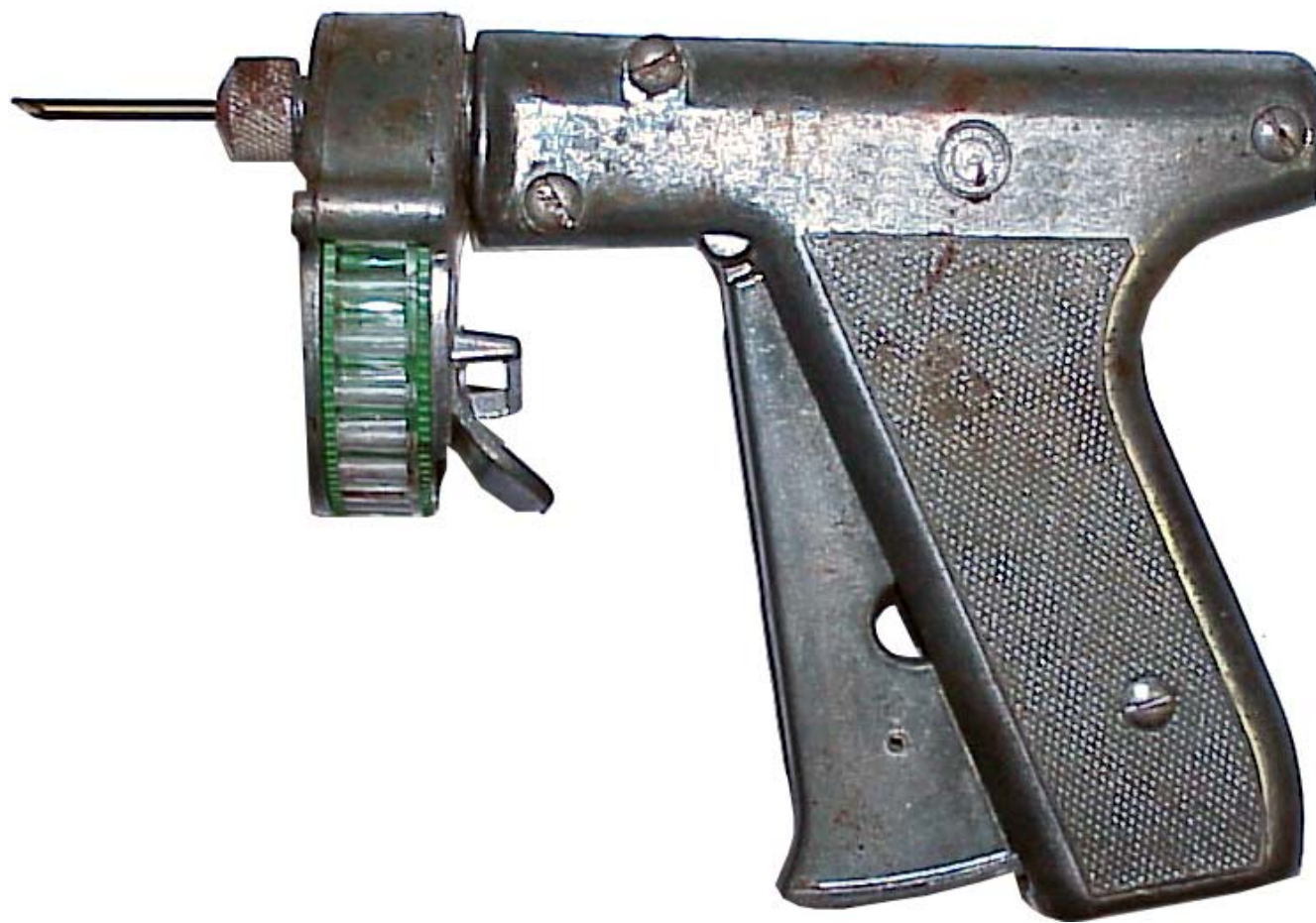
Equipment Uses – to be used in answer column 2 by **Seniors**

- | | |
|--|--|
| <p>A. Used to pick up meat pieces during fabrication.</p> <p>B. A device placed on rams that shows when a ewe has been serviced.</p> <p>C. Used to chop meat for sausages.</p> <p>D. Used to cut up meat carcasses.</p> <p>E. An instrument used for the bloodless castration (young male calves, lambs, and goats) and docking of tails (young lambs and goats). It is used to place a small rubber ring over the scrotum or tail to shut off circulation.</p> <p>F. Used to shear and groom the wool from sheep. Blade lengths typically range from 3 to 6-½ inches.</p> <p>G. An instrument used to control vaginal prolapse in ewes.</p> <p>H. Used to administer various pills (medications) to cattle and horses. It is placed down the throat to administer the pills.</p> <p>I. Used to inject a RALGRO pellet under the loose skin and above the cartilage on the back side of a beef calf's ear.</p> | <p>J. An automatic waterer used to provide clean, fresh water to pigs.</p> <p>K. Used to remove dirt and loose hair from cattle when grooming.</p> <p>L. An instrument used for the bloodless castration of young male calves, lambs, and goats by severing (crushing) the testicular cord.</p> <p>M. Used to tenderize the less tender cuts of meat.</p> <p>N. Used to comb (groom) the hair on cattle.</p> <p>O. Used to dock the tails of lambs and piglets. It cauterizes as it cuts the tail to eliminate excessive bleeding.</p> <p>P. Used to trim hooves of cattle, sheep, and goats to help prevent foot diseases.</p> <p>Q. Used to inject a SYNOVEX implant under the loose skin and above the cartilage on the back side of a beef calf's ear.</p> |
|--|--|

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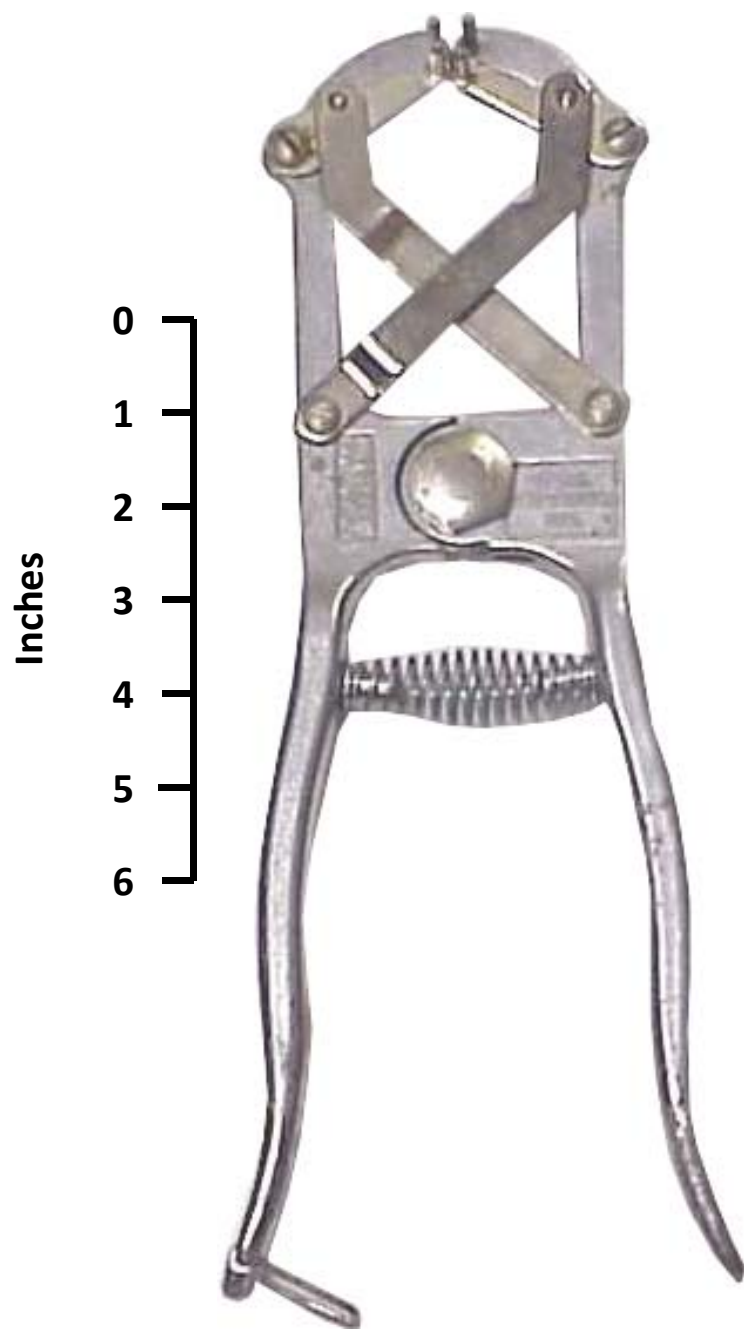
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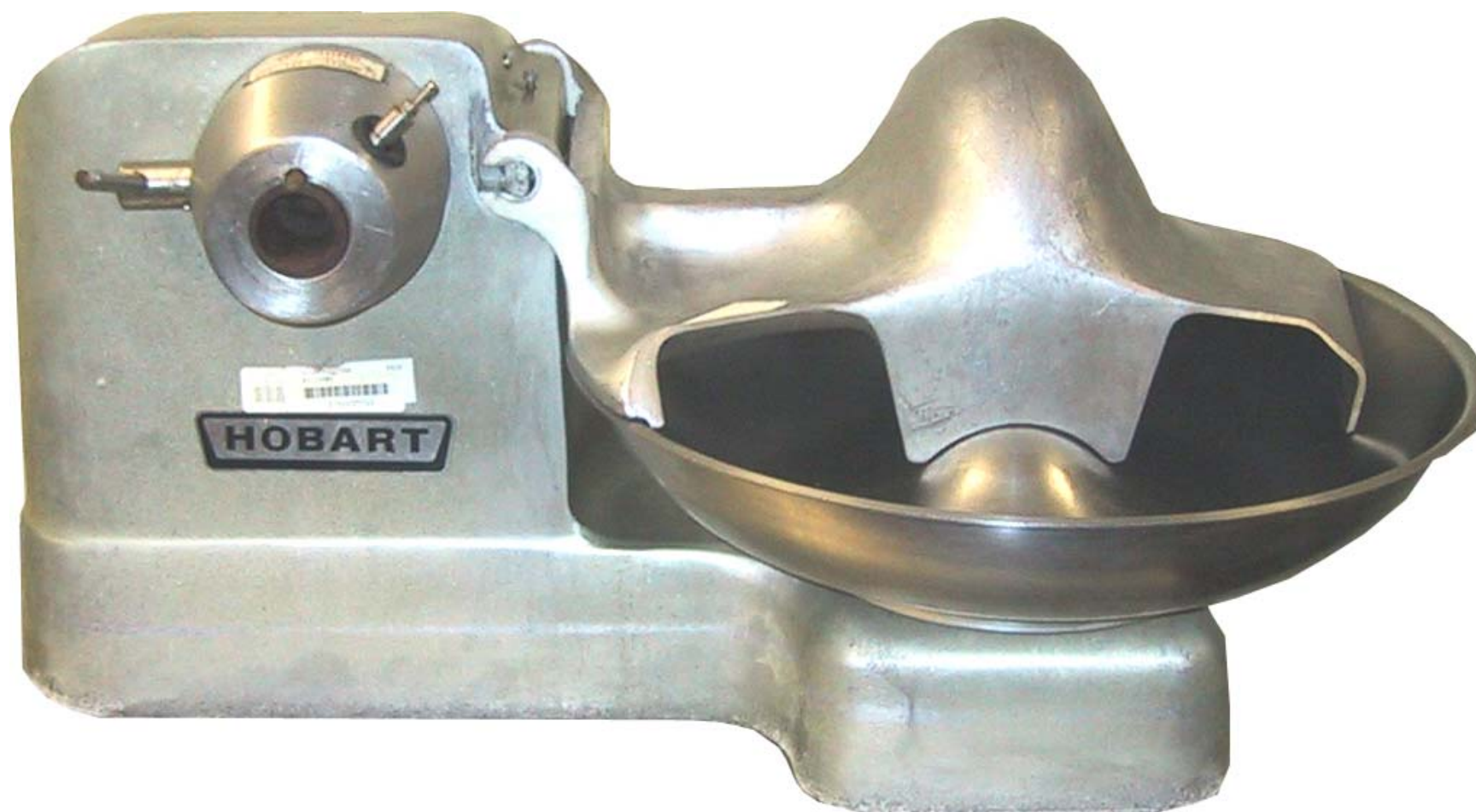
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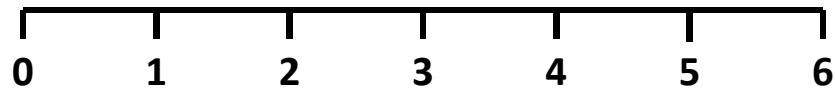
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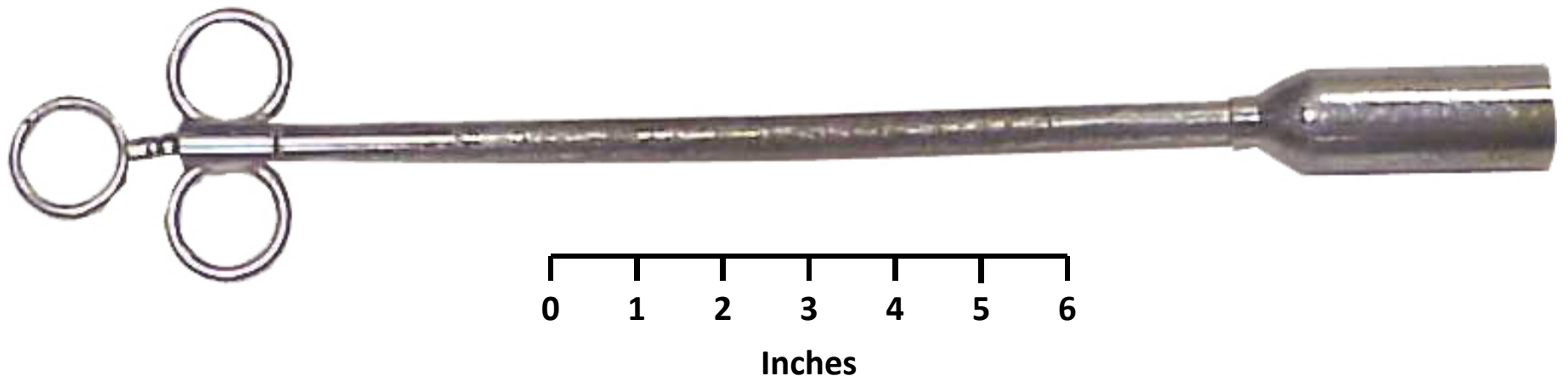
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Inches

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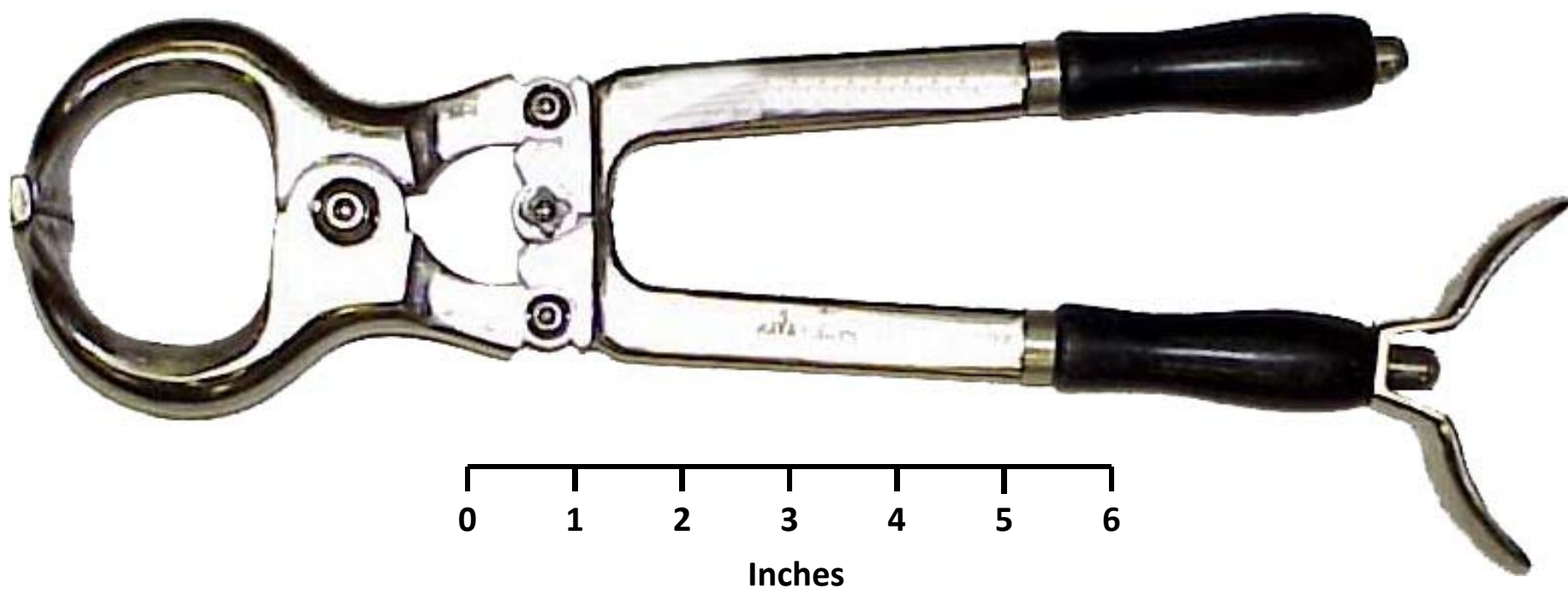


0 1 2 3 4 5 6
Inches

9



10



Senior Retail Meat Judging Class 1 – 2014

Name ANSWER KEY Contestant # _____ County _____

Official Placing = 4-1-2-3

Cuts = 2-3-4

(50 points possible)

Contestant Number _____

Placing Score _____

*University of Kentucky
College of Agriculture
Animal Sciences Department*

Contestant's Name

Address

County

Class

Class 1 Boneless Pork Chops

A	1 2 3 4	34
B	1 2 4 3	43
C	1 3 2 4	30
D	1 3 4 2	35
E	1 4 2 3	48
F	1 4 3 2	44
G	2 1 3 4	31
H	2 1 4 3	40
I	2 3 1 4	24
J	2 3 4 1	26
K	2 4 1 3	42
L	2 4 3 1	35
M	3 1 2 4	23
N	3 1 4 2	28
O	3 2 1 4	20
P	3 2 4 1	22
Q	3 4 1 2	30
R	3 4 2 1	27
S	4 1 2 3	50
T	4 1 3 2	46
U	4 2 1 3	47
V	4 2 3 1	40
W	4 3 1 2	39
X	4 3 2 1	36

Senior Retail Meat Judging Class 2 – 2014

Name ANSWER KEY Contestant # _____ County _____

Official Placing = 1-3-4-2

Cuts = 2-3-2

(Placing the meat is worth a possible 50 points and each of the 5 questions is worth 10 points for 50 possible points – Grand Total of 100 possible points)

Contestant Number _____

Placing Score _____

*University of Kentucky
College of Agriculture
Animal Sciences Department*

Contestant's Name

Address

County

Class

Class 2 T-Bone Steaks

A	1 2 3 4	43
B	1 2 4 3	40
C	1 3 2 4	448
D	1 3 4 2	50
E	1 4 2 3	42
F	1 4 3 2	47
G	2 1 3 4	36
H	2 1 4 3	33
I	2 3 1 4	34
J	2 3 4 1	29
K	2 4 1 3	28
L	2 4 3 1	26
M	3 1 2 4	46
N	3 1 4 2	48
O	3 2 1 4	39
P	3 2 4 1	34
Q	3 4 1 2	43
R	3 4 2 1	36
S	4 1 2 3	37
T	4 1 3 2	47
U	4 2 1 3	30
V	4 2 3 1	28
W	4 3 1 2	40
X	4 3 2 1	33

[Turn over and answer the 5 questions on the back of this page]

QUESTIONS

- 1) Which steak has the smallest tenderloin? 3
- 2) Which steak has the least amount of fat over the top loin? 1
- 3) Between 2 and 3, which steak has the least amount of bone? 3
- 4) Which is the thinnest steak? 2
- 5) Which steak will have the most plate loss? 4

Senior Hay Judging Class – 2014

Name ANSWER KEY Contestant # _____ County _____

Official Placing = 4-3-2-1

Cuts = 2-4-7

(50 points possible)

Contestant Number _____

Placing Score _____

*University of Kentucky
College of Agriculture
Animal Sciences Department*

Contestant's Name

Address

County

Class

Hay Judging Class

A	1 2 3 4	7
B	1 2 4 3	9
C	1 3 2 4	11
D	1 3 4 2	17
E	1 4 2 3	15
F	1 4 3 2	19
G	2 1 3 4	14
H	2 1 4 3	16
I	2 3 1 4	25
J	2 3 4 1	38
K	2 4 1 3	29
L	2 4 3 1	40
M	3 1 2 4	22
N	3 1 4 2	28
O	3 2 1 4	29
P	3 2 4 1	42
Q	3 4 1 2	41
R	3 4 2 1	48
S	4 1 2 3	28
T	4 1 3 2	32
U	4 2 1 3	35
V	4 2 3 1	46
W	4 3 1 2	43
X	4 3 2 1	50

[Turn over for Scenario and Forage Analysis Information]

Scenario:

You are backgrounding a load of feeder heifers with an average weight of 400 pounds. The calves have been purchased from a local stockyard and have not been vaccinated or weaned. Rank the four hay samples in the order that you would utilize them as the most cost effective source of forage for these feeder heifers. A commercial preconditioning feed will be feed for the first 3 weeks of the backgrounding period in addition to the hay that you choose. Ultimately the hay you choose will be the main source of feed until spring grass arrives.

Nutrient Requirements for 400 pound feeder heifers to gain 1.5 pounds per day.

Dry Matter: 10.7 pounds per day
Crude Protein: 12.1%
Total Digestible Nutrients 64%

Forage Analysis

	Hay Lot #1 Mixed Grass	Hay Lot #2 Grass/Legume Mixture	Hay Lot #3 1 st Cutting Orchardgrass	Hay Lot # 4 2 nd Cutting Orchardgrass
Dry matter	88.9%	88.6%	87.9%	88.6%
Crude protein	7.4%	15.2%	12.7%	13.5%
Acid detergent fiber (ADF)	49.9%	41.5%	44.8%	44.2%
Neutral detergent fiber (NDF)	69.2%	61.4%	67.5%	67.2%
Total digestible nutrients (TDN)	50.0%	66.5%	64.6%	65.5%
Price per ton	\$80	\$145	\$100	\$110

Name ANSWER KEY Contestant # _____ County _____

Senior Individual Quality Assurance – 2014

You are the manager of a 10,000 head contract wean-to-finish operation. Recently, you noticed a large percentage of the pigs had reduced feed intakes, had developed a persistent cough and began running temperatures. Your veterinarian has prescribed **Pulmotil 90** for treatment. Use the **Pulmotil 90** label and your knowledge of quality assurance management to answer the **10 questions** below relating to quality assurance. **Circle your answers.** (10 questions worth 5 points per question for 50 total points)

1. **Pulmotil 90 is labeled for what other species of farm animal(s)?**

A.) Cattle

C.) Turkeys

B.) Sheep

D.) Horses

2. **What is the active ingredient in Pulmotil 90?**

A.) Sulfamethazine

C.) Tilmicosin

B.) Oxytetracycline

D.) Ground corn cobs

3. **What is the best way to fully understand how to properly use Pulmotil 90?**

A.) Carefully read and follow the entire medication insert for Pulmotil 90

B.) Follow your veterinarians instructions

C.) Carefully read and follow the entire medication label for Pulmotil 90

D.) All are correct

4. **What is the appropriate amount of Pulmotil 90 that is recommend for use in pigs?**

A.) 568-757grams per ton of feed

C.) 12.5 mg per kg per head per day

B.) 181-363 grams per ton of feed

D.) 90.7 grams per pound

5. **How is Pulmotil 90 to administered to your pigs?**

A.) On the skin (topically)

C.) In the nose (intranasally)

B.) Under the skin (subcutaneously)

D.) In the feed

6. Which of the following is not a true statement?

- A.) Swine intended for human consumption must not be slaughtered within 7 days of the last treatment of this drug product.
- B.) This drug product is not approved for use in calves intended to be processed for veal.
- C.) Cattle intended for human consumption must not be slaughtered within 28 days of the last treatment of this drug product.
- D.) This drug product is not approved for use in male dairy cattle 20 months of age or older.**
- E.) All of the statements are true.

7. What is the maximum length of time Pulmotil 90 can be given to pigs?

- A.) 7 days before expected outbreak
- B.) 21 days**
- C.) 14 days
- D.) 45 days

8. If your veterinarian instructed you to provide add 3.5 pounds of Pulmotil 90 to each ton of feed, how many grams of tilmicodin would be in the mixed feed?

- A.) 317.5 grams per ton**
- B.) 400.5 grams per ton
- C.) 317.5 grams per pound
- D.) 200.5 grams per ton

9. Treatment with Pulmotil 90 should not be at the same time or following the administration of what?

- A.) Tilmicodin phosphate
- B.) Penicillin
- C.) Neutrophils
- D.) Injectable macrolide**

10. What class of drug product is Pulmotil 90?

- A.) Prescription
- B.) Swine Practitioners Approved
- C.) Veterinary Feed Directive**
- D.) Over-the-counter

For Use in Swine and Cattle Feeds Only

Pulmotil® 90 tilmicosin

Net Weight:
10 kg (22.0 lb)

Type A Medicated Article

Do not feed undiluted.

CAUTION: Federal law limits this drug to use under the professional supervision of a licensed veterinarian. Animal feed bearing or containing this veterinary feed directive drug shall be fed to animals only by or upon a lawful veterinary feed directive issued by a licensed veterinarian in the course of the veterinarian's professional practice.

Active Drug Ingredient: Tilmicosin (as tilmicosin phosphate) 90.7 g per lb (200 g per kg)

Inert Ingredients: Ground corncobs.

Description: Pulmotil® is a formulation of the antibiotic tilmicosin. Tilmicosin is produced semi-synthetically and is in the macrolide class of antibiotics. Each kilogram of Type A Medicated Article contains 200 grams (0.44 lbs) of tilmicosin adsorbed onto ground corncobs.

Indications:

Swine: For the control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae* and *Pasteurella multocida*.

Cattle: For the control of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* in groups of beef and non-lactating dairy cattle, where active BRD has been diagnosed in at least 10% of the animals in the group.

Feeding Directions:

Swine: Tilmicosin is to be fed continuously at 181 grams to 363 grams per ton (200 ppm to 400 ppm) of Type C medicated feed as the sole ration for a 21-day period, beginning approximately 7 days before an anticipated disease outbreak.

Cattle: Tilmicosin is to be fed continuously for a single, 14 day period at 568 grams to 757 grams (626 ppm to 834 ppm) per ton on a 100% dry matter basis of Type C medicated feed as the sole ration to provide 12.5 mg tilmicosin/kg/head/day.

IMPORTANT: Must be thoroughly mixed in swine or cattle feeds before use.

Mixing Directions:

For Incorporation into Swine Feeds: Thoroughly mix Pulmotil Type A medicated article with feed to provide a Type B medicated feed containing up to 36,300 grams tilmicosin per ton or to provide a complete Type C medicated feed containing 181 to 363 g tilmicosin per ton. Do not use in any feeds containing bentonite. Bentonite in feeds may affect the efficacy of tilmicosin.

Starting concentration of Pulmotil 90 Type A Medicated Article ^a	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type B Medicated Feed	
grams per pound	pounds	grams per ton	grams per pound
90.7	400	36,300	18.1
	300	27,200	13.6
	200	18,100	9.1

Starting concentration of Pulmotil 90 Type A Medicated Article ^a	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type C Medicated Feed	
grams per pound	pounds	grams per ton	
90.7	4	363	
	3	272	
	2	181	

^aPulmotil 90 contains 90.7 g tilmicosin phosphate per pound

For Incorporation into Cattle Feeds: Thoroughly mix Pulmotil Type A medicated article with feed to provide a Type B medicated feed containing up to 36,300 grams tilmicosin per ton on a 100% dry matter basis or to provide a complete Type C medicated feed containing 568 to 757 g tilmicosin per ton on a 100% dry matter basis. Complete Type C medicated feeds should not be pelleted. Do not use in any feeds containing bentonite, cottonseed meal, or cottonseed hulls. Bentonite, cottonseed meal, or cottonseed hulls in feeds may affect the efficacy of tilmicosin.

Starting concentration of Pulmotil 90 Type A Medicated Article ^a	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type B Medicated Feed ^b	
grams per pound	pounds	grams per ton	grams per pound
90.7	400	36,300	18.1
	200	18,100	9.1
	100	9,070	4.5

Starting concentration of Pulmotil 90 Type A Medicated Article ^a	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type C Medicated Feed ^b	
grams per pound	pounds	grams per ton	
90.7	8.35	757	
	6.26	568	

^aPulmotil 90 contains 90.7 g tilmicosin phosphate per pound

^b100% dry matter basis

CAUTION:

Do not allow horses or other equines access to feeds containing tilmicosin. The safety of tilmicosin has not been established in cattle or male swine intended for breeding purposes. To assure both food safety and responsible use in cattle, the treatment of cattle with this medicated feed is required to be initiated within the first 45 days of the production period. The treatment should not occur concurrent with or following administration of an injectable macrolide, or within 3 days following administration of a non-macrolide injectable BRD therapy.

Swine: Feed containing tilmicosin shall not be fed to pigs for more than 21 days during each phase of production without ceasing administration for reevaluation of antimicrobial use by a licensed veterinarian before re-initiating a further course of therapy with an appropriate antimicrobial. Veterinary Feed Directive (VFD) expiration date for swine must not exceed 90 days from the time of issuance. VFDs for tilmicosin phosphate shall not be refilled.

Cattle: Use only in cattle fed in confinement for slaughter. Tilmicosin medicated feed treatment has not been evaluated in cattle with severe clinical disease. Cattle with severe clinical illness should be evaluated for individual treatment with an alternative non-macrolide therapy. The expiration date for a tilmicosin Veterinary Feed Directive (VFD) for cattle must not exceed 45 days from the time of issuance. VFDs for tilmicosin phosphate shall not be refilled.

WARNINGS:

RESIDUE WARNING: Swine: Swine intended for human consumption must not be slaughtered within 7 days of the last treatment of this drug product.

RESIDUE WARNING: Cattle: Cattle intended for human consumption must not be slaughtered within 28 days of the last treatment with this drug product.

This drug product is not approved for use in female dairy cattle 20 months of age or older. Use in these cattle may cause drug residues in milk. This drug product is not approved for use in calves intended to be processed for veal. A withdrawal period has not been established in pre-ruminating calves.

User Safety Warnings: Avoid inhalation, oral exposure and direct contact with skin or eyes. Operators mixing and handling Pulmotil 90 should use protective clothing, impervious gloves, goggles and a NIOSH-approved dust mask. Wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse thoroughly with water. If irritation persists, seek medical attention. Not for human consumption. Keep out of reach of children. The Material Safety Data Sheet contains more detailed occupational safety information. To report adverse effects in users, to obtain more information, or to obtain a Material Safety Data Sheet, call 1-800-428-4441.

Clinical Pharmacology: Oral dosing of tilmicosin phosphate to swine at 181 to 363 g/ton of feed results in serum tilmicosin levels, which do not correlate with efficacy. Lung concentrations of tilmicosin are significantly higher than serum. Following 7 consecutive days of administering tilmicosin-medicated feeds to swine, the concentration of tilmicosin in respiratory tissues, phagocytic cells, and nasal secretions was significantly higher than that of plasma or serum. Lung levels are achieved within 2 days after beginning feeding and plateau by 4 days. Using *in-vitro* incubation techniques, the ratio of intracellular to extracellular concentrations of tilmicosin for neutrophils, monocyte-macrophages and alveolar macrophages were 69, 19 and 17, respectively, after four hours of incubation. Although lower levels of accumulation were observed *in-vivo*, swine alveolar macrophages have been shown *in-vitro* and *in-vivo* to concentrate large amounts of tilmicosin; these cells may be important for *in-vivo* distribution of the drug and may serve as an important reservoir for tilmicosin in lung tissue.

Oral dosing of tilmicosin phosphate to cattle to target a dose of 12.5 mg/kg body weight resulted in serum tilmicosin concentrations above the analytical limit of quantification (0.5 ng/mL) within 12 hours following treatment administration.

The relationship of serum tilmicosin concentration to lung tilmicosin concentration has not been determined following oral administration of tilmicosin.

Toxicology: The cardiovascular system is the target of toxicity in laboratory and domestic animals given tilmicosin by oral or parenteral routes. Primary cardiac effects are increased heart rate (tachycardia) and decreased contractility (negative inotropy). Given orally, the median lethal dose is 800 mg/kg in fasted rats and 2250 mg/kg in non-fasted rats. No compound-related lesions were found at necropsy. Results of genetic toxicology studies were all negative. Results of teratology and reproduction studies in rats were all negative. The no effect level in dogs after daily oral doses for up to one year is 4 mg/kg of body weight. Tilmicosin was included in the diet of 18 adult horses for a period of 14 days at dose levels of 400, 1200 and 2000 ppm. Some horses at both the low and high dose levels demonstrated gastrointestinal disturbance with more severe colic evident at the higher levels. One horse died after consuming the 2000 ppm diet. A study was conducted in cattle administered oral tilmicosin at 12.5, 25.0 or 37.5 mg/kg for 42 days or administered 12.5 mg/kg of oral tilmicosin for 14 days followed by 20 mg/kg injection of tilmicosin or saline (volume equivalent). Cardiac lesions observed (one animal in the 12.5 mg/kg for 42 days treatment group; one animal in the 12.5 mg/kg for 14 days followed by tilmicosin injection treatment group) were not considered clinically significant as no other abnormalities were seen and the affected animals were clinically normal.

To report adverse effects, access medical information or obtain additional product information, call 1-800-428-4441.

Storage Information:

Store at less than or equal to 25°C (77°F). Excursions to 40°C (104°F) are acceptable. Avoid excessive moisture.

Restricted Drug (California) - Use Only as Directed
NADA # 141-064, Approved by FDA

Manufactured For:
Elanco Animal Health
A Division of Eli Lilly and Company
Indianapolis, IN 46285, USA

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Senior Quiz – 2014

Carefully circle the correct answer to each of the questions below. (Each question is worth 2 points each for a total of 50 points)

- 1.) The external opening of a doe's reproductive tract is called the _____.
 - a. Urethra
 - b. Infundibulum
 - c. Vulva
 - d. Cervix
- 2.) The hormone that brings females into heat and prepares her for breeding is called _____.
 - a. Luteinizing hormone
 - b. Follicle stimulating hormone
 - c. Estrogen
 - d. Prostaglandin
- 3.) What essential nutrient do sheep require the greatest amount of?
 - a. Water
 - b. Protein
 - c. Vitamins
 - d. Minerals
- 4.) What is the average gestation length in goats?
 - a. 130 days
 - b. 150 days
 - c. 6 months
 - d. 160 days
- 5.) Triticale is a cross between _____ and _____.
 - a. Wheat and barley
 - b. Barley and corn
 - c. Wheat and rye
 - d. Barley and rye
- 6.) What mineral should not be included in diets for sheep?
 - a. Phosphorus
 - b. Magnesium
 - c. Molybdenum
 - d. Copper
- 7.) Which of the following is not considered to be an essential amino acid for pigs?
 - a. Glutamine
 - b. Lysine
 - c. Threonine
 - d. Methionine
- 8.) Which of the following is a ruminant?
 - a. Cow
 - b. Ram
 - c. Buck
 - d. All of the above

- 9.) What is the average length of the estrous cycle in a heifer?
- a. 7 days
 - b. 14 days
 - c. 21 days
 - d. 28 days
- 10.) What is the average length of gestation in cattle?
- a. 114 days
 - b. 150 days
 - c. 244 days
 - d. 283 days
- 11.) Which one of the following hormones maintains pregnancy in farm animals?
- a. Estrogen
 - b. Progesterone
 - c. Prostaglandin
 - d. Testosterone
- 12.) Which of the following is a quality grade for beef?
- a. Prime
 - b. Unacceptable
 - c. Choice
 - d. Both a. and c.
- 13.) Which management practices are performed on baby piglets?
- a. Dock tails
 - b. Clip needle teeth
 - c. Give iron injection
 - d. All of the above
- 14.) Which of the following should not be fed to pigs?
- a. Hominy feed
 - b. Cottonseed meal
 - c. Urea
 - d. Both b. and c.
- 15.) The North American International Livestock Exposition is located where?
- a. Houston
 - b. Louisville
 - c. Denver
 - d. Kansas City
- 16.) Which of the following is not fed to livestock primarily for energy?
- a. Canola meal
 - b. Molasses
 - c. Steam flaked corn
 - d. Soybean hulls
- 17.) Which of the following is not a high priced wholesale cut in lambs?
- a. Breast
 - b. Rack
 - c. Loin
 - d. Leg
- 18.) Which of the following pig breeds is known as the “mother breed”?
- a. Landrace
 - b. Yorkshire
 - c. Chester White
 - d. Hampshire

- 19.) The marketing ad “The Other White Meat” refers to which species?
- a. Beef
 - b. Pork**
 - c. Lamb
 - d. Chevron
- 20.) The female reproductive organ where the embryo develops is called the _____.
- a. Ovary
 - b. Oviduct
 - c. Cervix
 - d. Uterus**
- 21.) Which of the following is not a correct term for lamb carcasses?
- a. Easter Lamb
 - b. Spring Lamb
 - c. New Year Lamb**
 - d. Genuine Spring Lamb
- 22.) Which of the following is considered a by-product feed?
- a. Corn Gluten Feed
 - b. Soybean Hull Pellets
 - c. Distillers Dried Grains
 - d. All of these are by-product feeds**
- 23.) Which of the following is not a wool term?
- a. Britch
 - b. Grease
 - c. Cotted
 - d. Mottled**
- 24.) Obtaining immunity by absorbing immunoglobulins from colostrum is called _____.
- a. Partial immunity
 - b. Passive immunity**
 - c. Active immunity
 - d. Postpartum immunity
- 25.) Where is the hormone testosterone produced?
- a. Testicle**
 - b. Ovary
 - c. Brain
 - d. Pancreas

County ANSWER KEY

Team Members _____

Senior Team Quality Assurance Exercise – 2014

You are a beef producer and operate a 500-head feedlot that typically feeds calves from about 600 pounds to finished weight for market. As a practical way to keep track of steers that have been injured or treated for illness, you sort them into one pen that you keep designated as a hospital or “sick” pen. There are five (5) steers in the sick pen that have reached finish weight and have fully recovered their problems. You want to send as many of these steers as possible to market on Monday, February 17, 2014, and need to make sure any withdrawal times are over. Using the five (5) medication inserts provided, answer the questions below and finish filling in the table of treatment records on the reverse side of this page. Once the table is filled in, list the steers that can be sold tomorrow and those that should be held until a later date. A calendar is provided for your use as well. (Each answer is worth 7 points each for a total of 210 points)

NOTES ON TREATMENTS:

- Assume you accurately followed the directions on the medication insert.
- Assume the treatment date given in the treatment records is the last date of treatment
- If a range of recommended dosage is given on the medication insert, assume you gave the highest dosage recommended

- 1) Which medication is a modified live virus? BOVI-SHIELD GOLD 5
- 2) When giving Tylan 200, what is the largest amount that should be administered in one site? 10 ml
- 3) Which of the medications could also be given to sheep? NONE
- 4) Which of the medications is approved for use in a 3-yr old lactating dairy cow? EXCENEL
- 5) Which of the medications has to be rehydrated before use? BOVI-SHIELD GOLD 5

TREATMENT RECORD

Treatment Date & Time	Steer Treated (Tag #)	Steer Weight	Condition Being Treated	Medication Given	Route Given ^a	Amount Given	Required Withdrawal Period (days)	Date & Time Withdrawal Complete
Jan. 30, 2014 9:00 a.m.	# 57	1200 lbs	Pneumonia	Tylan 200	IM	48 mL	21 days	Feb. 20, 2014 9:00 a.m.
Dec. 2, 2013 10:00 a.m.	# 49	1210 lbs	Roundworms	Dectomax	SC or IM	11 mL	35 days	Jan. 6, 2014 10:00 a.m.
Dec. 24, 2013 2:30 p.m.	# 76	1175 lbs	Bovine Viral Diarrhea Virus	Bovi-Shield Gold 5	IM	2 mL	21 days	Jan. 14, 2014 2:30 p.m.
Jan. 14, 2014 8:00 a.m.	# 28	1250 lbs	Foot Rot	Draxxin	SC	13.75 mL	18 days	Feb. 1, 2014 8:00 a.m.
Feb. 10, 2014 12:00 noon	# 50	1150 lbs	Bovine Respiratory Disease	Excenel	IM or SC	23 mL	3 days	Feb. 13, 2014 12:00 noon

Intramuscular = IM
 Subcutaneous = SC
 Intravenous = IV
 Topical = T
 Added to feed = F

Steers That Can be Sold Tomorrow

49

76

28

50

Steers to Hold Until a Later Date

57

CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
December 1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	January 1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	February 1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	March 1

For Animal Use only
BOVI-SHIELD® GOLD 5
Reg. No. 3675 Act 36/1947
Namibia reg. no. NSR 1339

For use by or under the control of a veterinarian only

INDICATIONS:

Bovi-Shield® GOLD 5 is recommended for vaccination of healthy cattle as an aid in preventing disease caused by infectious bovine rhinotracheitis virus (IBRV), bovine viral diarrhoea virus (BVD Type 1 and 2), parainfluenza₃ virus (PI₃) and bovine respiratory syncytial virus (BRSV).

Bovi-Shield® GOLD 5 may be administered to pregnant cattle provided they were vaccinated with Bovi-Shield® FP4+L5 vaccine within the past 12 months. It may also be administered to calves nursing pregnant cows provided their dams were vaccinated within the past 12 months with Bovi-Shield® FP 4+L5.

STORAGE INSTRUCTIONS:

The vaccine should be stored at temperatures between 2°C and 7°C, and must be protected from light. Do not freeze.

COMPOSITION:

Bovi-Shield® GOLD 5 is a freeze-dried preparation of modified live virus strains of IBR, BVD (Type 1 and 2), PI₃ and BRS viruses, plus a sterile diluent used to re-hydrate the freeze-dried vaccine. Viral antigens are propagated on established cell lines.

WARNING:

Do not vaccinate within 21 days before slaughter. Keep out of reach of children and uninformed persons.

For veterinary use only.

Contains gentamicin as a preservative.

Do not use in pregnant cows, abortion can result, unless they were vaccinated strictly according to the instructions. As with many vaccines, anaphylaxis may occur after use.

This vaccine has been shown to be efficacious in healthy animals. A protective immune response may not be elicited:

- if animals are incubating an infectious disease,
- are malnourished or parasitized,
- are stressed due to shipment or environmental conditions,
- are otherwise immuno-compromised,
- or the vaccine is not administered in accordance with label directions.

Although this vaccine has been extensively tested under a large variety of conditions, failure thereof may ensue as a result of a wide range of reasons. If this is suspected, seek veterinary advice and notify the registration holder.

PRECAUTIONS:

Do not use in pregnant cows, unless they were vaccinated with Bovi-Shield® FP 4+L5 within the past 12 months.

Use the entire contents when first opened.

Do not use in calves nursing pregnant cows unless their dams were vaccinated within the past 12 months with Bovi-Shield® FP 4+L5. Sterilized syringes and needles should be used to administer the vaccine. Do not sterilize with chemicals because traces of disinfectant may inactivate the vaccine. Burn containers and all unused contents. If vaccination results in anaphylaxis, initial antidote of adrenalin, or equivalent is recommended, and should be followed with appropriate supportive therapy.

DOSAGE AND DIRECTIONS FOR USE:

Vaccination of healthy cattle is recommended.

Aseptically rehydrate the freeze-dried vaccine with the sterile diluent provided, shake well and administer 2 ml intramuscularly, in the muscular region of the neck.

Primary Vaccination: Administer a single 2 ml dose to healthy cattle, followed by a second dose of **Bovi-Shield® GOLD 5**, 3–4 weeks later.

Revaccination: Annual revaccination with a single dose is recommended.

PRESENTATION:

Bovi-Shield® GOLD 5 is marketed in clear, sterile, sealed, 10 and 50 dose vials. A 10 dose vial is rehydrated with 20 ml sterile diluent and a 50 dose vial with 100 ml sterile diluent.

REGISTRATION HOLDER:

Pfizer Laboratories (Pty) Ltd
Registration No. 1954/000781/07
85 Bute Lane, Sandton, 2196
P O Box 783720, Sandton, 2146
For more information phone: 011- 3206000

Bovi-Shield® Gold and the Pfizer Logo are registered trademarks.

DECTOMAX[®] INJECTABLE SOLUTION

Pfizer Animal Health

(doramectin)

Antiparasitic

1% injectable solution for cattle and swine 10 mg/mL

PRODUCT DESCRIPTION: Dectomax injectable solution is a ready-to-use, colorless to pale yellow, sterile solution containing 1% w/v doramectin (10 mg/mL). In cattle, Dectomax is formulated to deliver the recommended dosage (200 mcg/kg of body weight) when given by subcutaneous (SC) or intramuscular (IM) injection at the rate of 1 mL/110 lb of body weight. In swine, Dectomax is formulated to deliver the recommended dosage (300 mcg/kg of body weight) when given by IM injection at the rate of 1 mL/75 lb of body weight.

PRODUCT CHARACTERISTICS: Dectomax injectable solution is a highly active, broad-spectrum parasiticide for parenteral administration to cattle and swine. It contains doramectin, a novel fermentation-derived macrocyclic lactone discovered by Pfizer Inc. Doramectin is isolated from fermentations of selected strains derived from the soil organism *Streptomyces avermitilis*.

A primary mode of action of macrocyclic lactones is to modulate chloride ion channel activity in the nervous system of nematodes and arthropods. Macrocyclic lactones bind to receptors that increase membrane permeability to chloride ions. This inhibits the electrical activity of nerve cells in nematodes and muscle cells in arthropods and causes paralysis and death of the parasites. In mammals, the neuronal receptors to which macrocyclic lactones bind are localized within the central nervous system (CNS), a site reached by only negligible concentrations of doramectin.

One dose of Dectomax injectable solution effectively treats and controls a wide range of roundworm and arthropod parasites that impair the health and productivity of cattle and swine. Studies have demonstrated the safety margin of Dectomax injection in cattle and swine. In USA trials, no toxic signs were seen in cattle given up to 25 times the recommended dose, or in swine given up to 10 times the recommended dose. Studies also demonstrated safety in neonatal calves and piglets treated with up to 3 times the recommended dose. In males (bulls and boars) and females (cows and sows during folliculogenesis, implantation, organogenesis, and through gestation), a dose 3 times the recommended dose had no effect on breeding performance.

PRODUCT INDICATIONS: *Cattle:* Dectomax injectable solution is indicated for the treatment and control of the following harmful species of gastrointestinal roundworms, lungworms, eyeworms, grubs (see PRECAUTIONS), sucking lice (see PRECAUTIONS), and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Gastrointestinal Roundworms (adults and fourth stage larvae) - *Ostertagia ostertagi* (including inhibited larvae), *O. lyrata*, *Haemonchus placei*, *Trichostrongylus axei*, *T. colubriformis*, *T. longispicularis*¹, *Cooperia oncophora*, *C. pectinata*¹, *C. punctata*, *C. surnabada* (syn. *mcmasteri*), *Bunostomum phlebotomum*¹, *Strongyloides papillosus*¹,

Oesophagostomum radiatum, *Trichuris* spp.¹

Lungworms (adults and fourth stage larvae) - *Dictyocaulus viviparus*

Eyeworms (adults) - *Thelazia* spp.

Grubs (parasitic stages) - *Hypoderma bovis*, *H. lineatum*

Sucking Lice - *Haematopinus eurysternus*, *Linognathus vituli*, *Solenopotes capillatus*

Mange Mites - *Psoroptes bovis*, *Sarcoptes scabiei*

¹adults

Dectomax injectable solution has been proved to effectively control infections and to protect cattle from reinfection with *Cooperia oncophora* and *Haemonchus placei* for 14 days, *Ostertagia ostertagi* for 21 days, and *C. punctata*, *Oesophagostomum radiatum*, and *Dictyocaulus viviparus* for 28 days after treatment.

Swine: Dectomax injectable solution is indicated for the treatment and control of the following species of gastrointestinal roundworms, lungworms, kidney worms, sucking lice (see PRECAUTIONS), and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Gastrointestinal Roundworms (adults and fourth stage larvae) - *Ascaris suum*, *Oesophagostomum dentatum*, *Oesophagostomum quadrispinulatum*¹, *Strongyloides ransomi*¹, *Hyostrongylus rubidus*¹

Lungworms (adults) - *Metastrongylus* spp. Kidney Worms (adults) - *Stephanurus*

dentatus

Mange Mites (adults and immature stages) - *Sarcoptes scabiei* var. *suis*

Sucking Lice (adults and immature stages) - *Haematopinus suis*

¹adults

DOSAGE: *Cattle:* Administer Dectomax injectable solution at the recommended dosage of 200 mcg doramectin per kg (91 mcg/lb) of body weight. Each mL contains 10 mg of doramectin, sufficient to treat 110 lb (50 kg) of body weight.

Body Weight (lb)	Dose (mL)
110	1
220	2
330	3
440	4
550	5
660	6
770	7
880	8
990	9
1,100	10

Swine: Administer Dectomax injectable solution at the recommended dosage of 300 mcg doramectin per kg (136 mcg/lb) of body weight. Each mL contains 10 mg of doramectin, sufficient to treat 75 lb (34 kg) of body weight.

Body Weight (lb)	Dose (mL)
15	0.2
30	0.4
45	0.6
60	0.8
75	1.0
150	2.0
225	3.0
300	4.0
375	5.0
450	6.0

RECOMMENDED TREATMENT PROGRAM FOR SWINE: To effectively initiate control of mange and sucking lice in swine, it is important to treat all animals in the herd. After initial treatment, use Dectomax regularly as follows:

Breeding Animals:

Sows: Treat 7-14 days prior to farrowing to minimize exposure of piglets to mites and sucking lice.

Gilts: Treat 7-14 days prior to breeding. Treat 7-14 days prior to farrowing.

Boars: Treat a minimum of 2 times per year.

Feeder Pigs: Treat any new feeder pigs upon arrival at farm or before placement in clean quarters.

Weaners, Growers, Finishers: Weaners and grow-out/finisher pigs should be treated before placement in clean quarters.

For effective mange elimination, care must be taken to prevent reinfestation from exposure to untreated animals or contaminated facilities. **ADMINISTRATION:** Dry, sterile equipment and aseptic procedures should be used when withdrawing and administering Dectomax. For multiple treatments either automatic injection equipment or an aspirating needle should be used.

Cattle: Administer Dectomax injectable solution by the SC or IM route. Injections should be made using a 16 gauge needle for adult cattle or an 18 gauge needle for young animals. Needles 1/2-3/4" in length are suggested for SC administration. A 1-1/2" needle is suggested for IM administration. SC injections should be administered under the loose skin in front of or behind the shoulder. IM injections should be administered into the muscular region of the neck. Beef Quality Assurance guidelines recommend SC administration as the preferred route.



Swine: Administer Dectomax injectable solution by the IM route. Inject in the neck region using an 18 gauge x 1" needle for young animals; a 16 gauge x 1-1/2" needle for sows and boars. To accurately meter doses administered to piglets, use of a tuberculin syringe and 20 gauge x 1" needle is recommended.



WARNINGS: Not for human use. Keep out of reach of children. The material safety data sheet (MSDS) contains more detailed occupational safety information. To report adverse effects in users, to obtain more information, or to obtain an MSDS, call 1-800-366-5288.

RESIDUE WARNINGS: *Cattle:* Do not slaughter for human consumption within 35 days of treatment. Not for use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in preparturient calves. Do not use in calves to be processed for veal. *Swine:* Do not slaughter for human consumption within 24 days of treatment.

PRECAUTIONS: Dectomax has been developed specifically for use in cattle and swine only. This product should not be used in other animal species as severe adverse reactions, including fatalities in dogs, may result.

For SC injection in cattle only. For IM injection in swine and cattle. This product is approved for the treatment and control of sucking lice. For treatment of biting lice in cattle, use of Dectomax Pour-On is recommended.

Dectomax is highly effective against all stages of cattle grubs. However, proper timing of treatment is important. For most effective results, cattle should be treated as soon as possible after the end of the heel fly (warble) season.

Destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions including the possibility of fatalities.

Killing *H. lineatum* when it is in the tissue surrounding the gullet may cause bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. These reactions are not specific to treatment with Dectomax, but can occur with any successful treatment of grubs. Cattle should be treated either before or after these stages of grub development.

Consult your veterinarian concerning the proper time for treatment.

Cattle treated with Dectomax after the end of the heel fly season may be re-treated with Dectomax during the winter for internal parasites, mange mites, or sucking lice, without danger of grub-related reactions. A planned parasite control program is recommended.

ENVIRONMENTAL SAFETY: Studies indicate that when doramectin comes in contact with the soil, it readily and tightly binds to the soil and becomes inactive over time. Free doramectin may adversely affect fish and certain aquatic organisms. Do not permit water runoff from feedlots to enter streams or ponds. Do not contaminate water by direct application or by the improper disposal of drug containers. Dispose of containers in an approved landfill.

As with other avermectins, doramectin is excreted in the dung of treated animals and can inhibit the reproduction and growth of pest and beneficial insects that use dung as a source of food and for reproduction. The magnitude and duration of such effects are species and life-cycle specific. When used according to label directions, the product is not expected to have an adverse impact on populations of dung-dependent insects.

Store Below 30°C (86°F)

HOW SUPPLIED: Dectomax is available in 100-mL, 200-mL, and 500-mL multi-dose, rubber-capped glass vials. NADA #141-061, Approved by FDA

Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism. Not for human use

Restricted Drug (CA) Use only as directed.

Laboratórios Pfizer Ltda. - Animal Health Division, Av. Monteiro Lobato, 2270, Guarulhos, São Paulo, Brasil CNPJ nº 46,070,868/0001-69

Licenciado no Ministério da Agricultura sob o nº 4,055/92, em 14/08/92 Licensed in the Ministry of Agriculture under

nº 4,055/92, on 08/14/92 Distributed by: Pfizer Animal Health, Div. of Pfizer Inc, NY, NY 10017 79-5199-00-8

July 2005 Made in Brazil

NAC No.: 36900094

EXCENEL[®] RTU STERILE SUSPENSION

by Zoetis

brand of ceftiofur hydrochloride sterile suspension

For intramuscular and subcutaneous use in cattle and intramuscular use in swine. This product may be used in lactating dairy cattle.

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

DESCRIPTION

EXCENEL RTU Sterile Suspension is a ready to use formulation that contains the hydrochloride salt of ceftiofur, which is a broad spectrum cephalosporin antibiotic.

Each mL of this ready-to-use sterile suspension contains ceftiofur hydrochloride equivalent to 50 mg ceftiofur, 0.50 mg phospholipon, 1.5 mg sorbitan monooleate, 2.25 mg sterile water for injection, and cottonseed oil.

Structure:

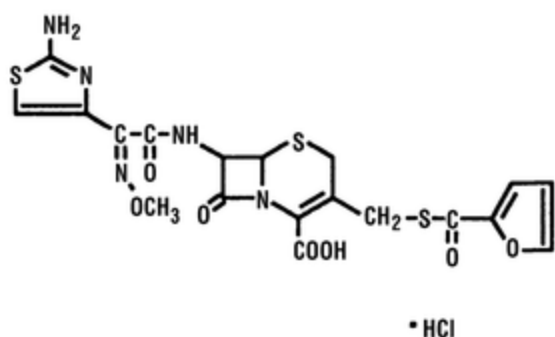


Figure 1.

Chemical Name of Ceftiofur Hydrochloride: 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl) (methoxyimino)-acetyl]amino]-3-[[[(2-furanyl-carbonyl) thio] methyl]-8-oxo-,hydrochloride salt [6R-[6 α ,7 β (Z)]]-

INDICATIONS

Swine: EXCENEL RTU Sterile Suspension is indicated for treatment/control of swine bacterial respiratory disease (swine bacterial pneumonia) associated with *Actinobacillus* (*Haemophilus*) *pleuropneumoniae*, *Pasteurella multocida*, *Salmonella choleraesuis* and *Streptococcus suis*.

Cattle: EXCENEL RTU Sterile Suspension is indicated for treatment of the following bacterial diseases:

- Bovine respiratory disease (BRD, shipping fever, pneumonia) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni*.
- Acute bovine interdigital necrobacillosis (foot rot, pododermatitis) associated with *Fusobacterium necrophorum* and *Bacteroides melaninogenicus*.
- Acute metritis (0 to 14 days post-partum) associated with bacterial organisms susceptible to ceftiofur.

DOSAGE AND ADMINISTRATION

Shake well before using.

Swine: Administer intramuscularly at a dosage of 1.36 to 2.27 mg ceftiofur equivalents/lb (3.0 to 5.0 mg/kg) BW (1 mL of sterile suspension per 22 to 37 lb BW). Treatment should be repeated at 24 h intervals for a total of three consecutive days.

Cattle:

- For bovine respiratory disease and acute interdigital necrobacillosis: administer by intramuscular or subcutaneous administration at the dosage of 0.5 to 1.0 mg ceftiofur equivalents/lb (1.1 to 2.2 mg/kg) BW (1 to 2 mL sterile suspension per 100 lb BW). Administer daily at 24 h intervals for a total of three consecutive days. Additional treatments may be administered on Days 4 and 5 for animals which do not show a satisfactory response (not recovered) after the initial three treatments.

In addition, for BRD only, administer intramuscularly or subcutaneously 1.0 mg ceftiofur equivalents/lb (2.2 mg/kg) BW every other day on Days 1 and 3 (48 h interval). Do not inject more than 15 mL per injection site.

Selection of dosage level (0.5 to 1.0 mg/lb) and regimen/duration (daily or every other day for BRD only) should be based on an assessment of the severity of disease, pathogen susceptibility and clinical response.

- For acute post-partum metritis: administer by intramuscular or subcutaneous administration at the dosage of 1.0 mg ceftiofur equivalents/lb (2.2 mg/kg) BW (2 mL sterile suspension per 100 lb BW). Administer at 24 h intervals for five consecutive days. Do not inject more than 15 mL per injection site.

CONTRAINDICATIONS

As with all drugs, the use of EXCENEL RTU Sterile Suspension is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS

NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN.

Penicillins and cephalosporins can cause allergic reactions in sensitized individuals. Topical exposures to such antimicrobials, including ceftiofur, may elicit mild to severe allergic reactions in some individuals. Repeated or prolonged exposure may lead to sensitization. Avoid direct contact of the product with the skin, eyes, mouth, and clothing.

Persons with a known hypersensitivity to penicillin or cephalosporins should avoid exposure to this product.

In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. If allergic reaction occurs (e.g., skin rash, hives, difficult breathing), seek medical attention.

The material safety data sheet contains more detailed occupational safety information. To obtain a material safety data sheet (MSDS) please call 1-800-733-5500. To report any adverse event please call 1-800-366-5288.

RESIDUE WARNINGS:

Swine: When used according to label indications, dosage, and route of administration, treated swine must not be slaughtered for 4 days following the last treatment. Use of dosages in excess of those indicated or by unapproved routes of administration may result in illegal residues in edible tissues.

Cattle: When used according to label indications, dosage and route of administration, treated cattle must not be slaughtered for 3 days following the last treatment. When used according to label indications, dosage and route of administration, a milk discard time is not required. Uses of dosages in excess of those indicated or by unapproved routes of administration, such as intramammary, may result in illegal residues in edible tissues and/or milk. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal.

PRECAUTIONS

The effects of ceftiofur on cattle and swine reproductive performance, pregnancy, and lactation have not been determined.

Swine: Areas of discoloration associated with the injection site at time periods of 11 days or less may result in trim-out of edible tissues at slaughter. The safety of ceftiofur has not been demonstrated for pregnant swine or swine intended for breeding.

Cattle: Following intramuscular or subcutaneous administration in the neck, areas of discoloration at the site may persist beyond 11 days resulting in trim loss of edible tissues at slaughter. Following intramuscular administration in the rear leg, areas of discoloration at the injection site may persist beyond 28 days resulting in trim loss of edible tissues at slaughter.



Antibiotic 100 mg of tulathromycin/mL

For subcutaneous injection in beef and non-lactating dairy cattle and intramuscular injection in swine only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

CAUTION

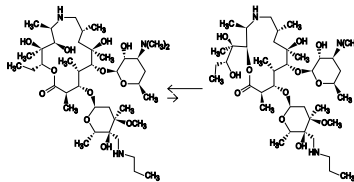
Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

DESCRIPTION

DRAXXIN Injectable Solution is a ready-to-use sterile parenteral preparation containing tulathromycin, a semi-synthetic macrolide antibiotic of the subclass trimolide. Each mL of DRAXXIN contains 100 mg of tulathromycin as the free base in a 50% propylene glycol vehicle, monothioglycol (5 mg/mL), with citric and hydrochloric acids added to adjust pH.

DRAXXIN consists of an equilibrated mixture of two isomeric forms of tulathromycin in a 9:1 ratio. Structures of the isomers are shown below.

Figure 1.



The chemical names of the isomers are [2R,3S,4R,5R,8R,10R,11R,12S,13S,14R]-13-[[2,6-dideoxy-3-C-methyl-3-O-methyl-4-C-[[propylamino)methyl]-α-L-ribo-hexopyranosyl]oxy]-2-ethyl-3,4,10-trihydroxy-3,5,8,10,12,14-hexamethyl-11-[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]oxy]-1-oxa-6-azacyclotetradecan-15-one and [2S,3S,6R,8R,9R,10S,11S,12R]-11-[[2,6-dideoxy-3-C-methyl-3-O-methyl-4-C-[[propylamino)methyl]-α-L-ribohexopyranosyl]oxy]-2-[[1R,2R]-1,2-dihydroxy-1-methylbutyl]-8-hydroxy-3,6,8,10,12-pentamethyl-9-[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]oxy]-1-oxa-4-azacyclotetradecan-13-one, respectively.

INDICATIONS

Beef and Non-lactating Dairy Cattle

BRD – DRAXXIN Injectable Solution is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*; and for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*.

IBK – DRAXXIN Injectable Solution is indicated for the treatment of infectious bovine keratoconjunctivitis (IBK) associated with *Moraxella bovis*.

Foot Rot – DRAXXIN Injectable Solution is indicated for the treatment of bovine foot rot (interdigital necrobacillosis) associated with *Fusobacterium necrophorum* and *Porphyromonas levi*.

Swine

DRAXXIN Injectable Solution is indicated for the treatment of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Bordetella bronchiseptica*, *Haemophilus parasuis*, and *Mycoplasma hyopneumoniae*; and for the control of SRD associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, and *Mycoplasma hyopneumoniae* in groups of pigs where SRD has been diagnosed.

DOSAGE AND ADMINISTRATION

Cattle

Inject subcutaneously as a single dose in the neck at a dosage of 2.5 mg/kg (1.1 mL/100 lb) body weight (BW). Do not inject more than 10 mL per injection site.

Table 1. DRAXXIN Cattle Dosing Guide

Animal Weight (Pounds)	Dose Volume (mL)
100	1.1
200	2.3
300	3.4
400	4.5
500	5.7
600	6.8
700	8.0
800	9.1
900	10.2
1000	11.4

Swine

Inject intramuscularly as a single dose in the neck at a dosage of 2.5 mg/kg (0.25 mL/22 lb) BW. Do not inject more than 2.5 mL per injection site.

Table 2. DRAXXIN Swine Dosing Guide

Animal Weight (Pounds)	Dose Volume (mL)
15	0.2
30	0.3
50	0.6
70	0.8
90	1.0
110	1.3
130	1.5
150	1.7
170	1.9
190	2.2
210	2.4
230	2.6
250	2.8
270	3.1
290	3.3

CONTRAINDICATIONS

The use of DRAXXIN Injectable Solution is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS

FOR USE IN ANIMALS ONLY.

NOT FOR HUMAN USE.

KEEP OUT OF REACH OF CHILDREN.

NOT FOR USE IN CHICKENS OR TURKEYS.

RESIDUE WARNINGS

Cattle

Cattle intended for human consumption must not be slaughtered within 18 days from the last treatment. Do not use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Swine

Swine intended for human consumption must not be slaughtered within 5 days from the last treatment.

PRECAUTIONS

Cattle

The effects of DRAXXIN on bovine reproductive performance, pregnancy, and lactation have not been determined. Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

Swine

The effects of DRAXXIN on porcine reproductive performance, pregnancy, and lactation have not been determined. Intramuscular injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

ADVERSE REACTIONS

Cattle

In one field study, two calves treated with DRAXXIN at 2.5 mg/kg BW exhibited transient hypersalivation. One of these calves also exhibited transient dyspnea, which may have been related to pneumonia.

Swine

In one field study, one out of 40 pigs treated with DRAXXIN at 2.5 mg/kg BW exhibited mild salivation that resolved in less than four hours.

CLINICAL PHARMACOLOGY

At physiological pH, tulathromycin (a weak base) is approximately 50 times more soluble in hydrophilic than hydrophobic media. This solubility profile is consistent with the extracellular pathogen activity typically associated with the macrolides. Markedly higher tulathromycin concentrations are observed in the lungs as compared to the plasma. The extent to which lung concentrations represent free (active) drug was not examined. Therefore, the clinical relevance of these elevated lung concentrations is undetermined.

Although the relationship between tulathromycin and the characteristics of its antimicrobial effects has not been characterized, as a class, macrolides tend to be primarily bacteriostatic, but may be bactericidal against some pathogens. They also tend to exhibit concentration independent killing; the rate of bacterial eradication does not change once serum drug concentrations reach 2 to 3 times the minimum inhibitory concentration (MIC) of the targeted pathogen. Under these conditions, the time that serum concentrations remain above the MIC becomes the major determinant of antimicrobial activity. Macrolides also exhibit a post-antibiotic effect (PAE), the duration of which tends to be both drug and pathogen dependent. In general, by increasing the macrolide concentration and the exposure time, the PAE will increase to some maximal duration. Of the two variables, concentration and exposure time, drug concentration tends to be the most powerful determinant of the duration of PAE.

Tulathromycin is eliminated from the body primarily unchanged via biliary excretion.

1 Carlson C. Pharmacodynamics of macrolides, azalides, and streptogramins: effect on extracellular pathogens. *Clin Infect Dis* 1996;22:26-32.

2 Nightingale CJ. Pharmacokinetics and pharmacodynamics of newer macrolides. *Pediatr Infect Dis J* 1997;16:438-443.

Cattle

Following subcutaneous administration into the neck of feeder calves at a dosage of 2.5 mg/kg BW, tulathromycin is rapidly and nearly completely absorbed. Peak plasma concentrations generally occur within 15 minutes after dosing and product relative bioavailability exceeds 90%. Total systemic clearance is approximately 170 mL/hr/kg. Tulathromycin distributes extensively into body tissues, as evidenced by volume of distribution values of approximately 11 L/kg in healthy ruminating calves. This extensive volume of distribution is largely responsible for the long elimination half-life of this compound [approximately 2.75 days in the plasma (based on quantifiable terminal plasma drug concentrations) versus 8.75 days for total lung concentrations (based on data from healthy animals)]. Linear pharmacokinetics are observed with subcutaneous doses ranging from 1.27 mg/kg BW to 5.0 mg/kg BW. No pharmacokinetic differences are observed in castrated male versus female calves.

3 Clearance and volume estimates are based on intersubject comparisons of 2.5 mg/kg BW administered by either subcutaneous or intravenous injection.

Swine

Following intramuscular administration to feeder pigs at a dosage of 2.5 mg/kg BW, tulathromycin is completely and rapidly absorbed (T_{max} ~0.25 hr). Subsequently, the drug rapidly distributes into body tissues, achieving a volume of distribution exceeding 15 L/kg. The free drug is rapidly cleared from the systemic circulation ($CL_{systemic}$ = 187 mL/hr/kg). However, it has a long terminal elimination half-life (60 to 90 hours) owing to its extensive volume of distribution. Although pulmonary tulathromycin concentrations are substantially higher than concentrations observed in the plasma, the clinical significance of these findings is undetermined. There are no gender differences in swine tulathromycin pharmacokinetics.

MICROBIOLOGY

Cattle

Tulathromycin has demonstrated *in vitro* activity against *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*, four pathogens associated with BRD; for *Moraxella bovis* associated with IBK; and against *Fusobacterium necrophorum* and *Porphyromonas levi* associated with bovine foot rot.

The MICs of tulathromycin against indicated BRD and IBK pathogens were determined using methods recommended by the Clinical and Laboratory Standards Institute (CLSI, M31-A2). The MICs against foot rot pathogens were also determined using methods recommended by the CLSI (M11-A6). All MIC values were determined using the 9:1 isomer ratio of this compound.

BRD – The MICs of tulathromycin were determined for BRD isolates obtained from calves enrolled in therapeutic and at-risk field studies in the U.S. in 1999. In the therapeutic studies, isolates were obtained from pre-treatment nasopharyngeal swabs from all study calves and from lung swabs or lung tissue of saline-treated calves that died. In the at-risk studies, isolates were obtained from nasopharyngeal swabs of saline-treated non-responders and from lung swabs or lung tissue of saline-treated calves that died. The results are shown in Table 3.

IBK – The MICs of tulathromycin were determined for *Moraxella bovis* isolates obtained from calves enrolled in IBK field studies in the U.S. in 2004. Isolates were obtained from pre-treatment conjunctival swabs of calves with clinical signs of IBK enrolled in the DRAXXIN and saline-treated groups. The results are shown in Table 3.

Foot Rot – The MICs of tulathromycin were determined for *Fusobacterium necrophorum* and *Porphyromonas levi* obtained from cattle enrolled in foot rot field studies in the U.S. and Canada in 2007. Isolates were obtained from pretreatment interdigital biopsies and swabs of cattle with clinical signs of foot rot enrolled in the DRAXXIN and saline-treated groups. The results are shown in Table 3.

Table 3. Tulathromycin minimum inhibitory concentration (MIC) values* for indicated pathogens isolated from field studies evaluating BRD and IBK in the U.S. and from foot rot field studies in the U.S. and Canada.

Indicated pathogen	Date isolated	No. of isolates	MIC ₉₀ ** (µg/mL)	MIC ₅₀ ** (µg/mL)	MIC range (µg/mL)
<i>Mannheimia haemolytica</i>	1999	642	2	2	0.5 to 64
<i>Pasteurella multocida</i>	1999	221	0.5	1	0.25 to 64
<i>Histophilus somni</i>	1999	36	4	4	1 to 4
<i>Mycoplasma bovis</i>	1999	43	0.125	1	≤0.063 to >64
<i>Moraxella bovis</i>	2004	55	0.5	0.5	0.25 to 1
<i>Fusobacterium necrophorum</i>	2007	116	2	64	≤0.25 to >128
<i>Porphyromonas levi</i>	2007	103	8	128	≤0.25 to >128

* The correlation between *in vitro* susceptibility data and clinical effectiveness is unknown.

** The lowest MIC to encompass 50% and 90% of the isolates, respectively.

Swine

In vitro activity of tulathromycin has been demonstrated against *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Bordetella bronchiseptica*, *Haemophilus parasuis*, and *Mycoplasma hyopneumoniae*.

The MICs of tulathromycin against indicated SRD pathogens were determined using methods recommended by the Clinical and Laboratory Standards Institute (CLSI, M31-A and M31-A3). MICs for *Haemophilus parasuis* were determined using Veterinary Fastidious Medium and were incubated up to 48 hours at 35 to 37° C in a CO₂-enriched atmosphere. All MIC values were determined using the 9:1 isomer ratio of this compound. Isolates obtained in 2000 and 2002 were from lung samples from saline-treated pigs and non-treated sentinel pigs enrolled in Treatment of SRD field studies in the U.S. and Canada. Isolates obtained in 2007 and 2008 were from lung samples from saline-treated and DRAXXIN-treated pigs enrolled in the Control of SRD field study in the U.S. and Canada. The results are shown in Table 4.

Table 4. Tulathromycin minimum inhibitory concentration (MIC) values* for indicated pathogens isolated from field studies evaluating SRD in the U.S. and Canada.

Indicated pathogen	Date isolated	No. of isolates	MIC ₉₀ ** (µg/mL)	MIC ₅₀ ** (µg/mL)	MIC range (µg/mL)
<i>Actinobacillus pleuropneumoniae</i>	2000-2002	135	16	32	16 to 32
	2007-2008	88	16	16	4 to 32
<i>Haemophilus parasuis</i>	2000-2002	31	1	2	0.25 to > 64
<i>Pasteurella multocida</i>	2000-2002	55	1	2	0.5 to > 64
	2007-2008	40	1	2	≤0.03 to 2
<i>Bordetella bronchiseptica</i>	2000-2002	42	4	8	2 to 8

* The correlation between *in vitro* susceptibility data and clinical effectiveness is unknown.

** The lowest MIC to encompass 50% and 90% of the most susceptible isolates, respectively.

EFFECTIVENESS

Cattle

BRD – In a multi-location field study, 314 calves with naturally occurring BRD were treated with DRAXXIN. Responses to treatment were compared to saline-treated controls. A cure was defined as a calf with normal attitude/activity, normal respiration, and a rectal temperature of ≤104°F on Day 14. The cure rate was significantly higher (P<0.05) in DRAXXIN-treated calves (78%) compared to saline-treated calves (24%). There were two BRD-related deaths in the DRAXXIN-treated calves compared to nine BRD-related deaths in the saline-treated calves.

Fifty-two DRAXXIN-treated calves and 27 saline-treated calves from the multi-location field BRD treatment study had *Mycoplasma bovis* identified in cultures from pre-treatment nasopharyngeal swabs. Of the 52 DRAXXIN-treated calves, 37 (71.2%) calves were categorized as cures and 15 (28.8%) calves were categorized as treatment failures. Of the 27 saline-treated calves, 4 (14.8%) calves were categorized as cures and 23 (85.2%) calves were treatment failures.

In another multi-location field study with 399 calves at high risk of developing BRD, administration of DRAXXIN resulted in a significantly reduced incidence of BRD (11%) compared to saline-treated calves (59%). Effectiveness evaluation was based on scored clinical signs of normal attitude/activity, normal respiration, and a rectal temperature of ≤104°F on Day 14. There were no BRD-related deaths in the DRAXXIN-treated calves compared to two BRD-related deaths in the saline-treated calves. Fifty saline-treated calves classified as non-responders in this study had *Mycoplasma bovis* identified in cultures of post-treatment nasopharyngeal swabs or lung tissue.

Two induced infection model studies were conducted to confirm the effectiveness of DRAXXIN against *Mycoplasma bovis*. A total of 166 calves were inoculated intratracheally with field strains of *Mycoplasma bovis*. When calves became pyrexia and had abnormal respiration scores, they were treated with either DRAXXIN (2.5 mg/kg BW) subcutaneously or an equivalent volume of saline. Calves were observed for signs of BRD for 14 days post-treatment, then were euthanized and necropsied. In both studies, mean lung lesion percentages were statistically significantly lower in the DRAXXIN-treated calves compared with saline-treated calves (11.3% vs. 28.9%, P=0.0001 and 15.0% vs. 30.7%, P<0.0001).

IBK – Two field studies were conducted evaluating DRAXXIN for the treatment of IBK. In the first study, 106 calves in 2001 naturally-infected calves. The primary clinical endpoint of these studies was cure rate, defined as a calf with no clinical signs of IBK and no corneal ulcer, assessed on Days 5, 9, 13, 17, and 21. Time to improvement, defined as the first day on which a calf had no clinical signs of IBK for both eyes, provided that those scores were maintained at the next day of observation, was assessed as a secondary variable. At all time points, in both studies, the cure rate was significantly higher (P<0.05) for DRAXXIN-treated calves compared to saline-treated calves. Additionally, time to improvement was significantly less (P<0.0001) in both studies for DRAXXIN-treated calves compared to saline-treated calves.

Foot Rot – The effectiveness of DRAXXIN for the treatment of bovine foot rot was evaluated in 170 cattle in two field studies. Cattle diagnosed with bovine foot rot were enrolled and treated with a single subcutaneous dose of DRAXXIN (2.5 mg/kg BW) or an equivalent volume of saline. Cattle were clinically evaluated 7 days after treatment for treatment success, which was based on defined decreases in lesion, swelling, and lameness scores. In both studies, the treatment success percentage was statistically significantly higher in DRAXXIN-treated calves compared with saline-treated calves (60% vs. 8%, P<0.0001 and 83.3% vs. 50%, P=0.0088).

Swine

In a multi-location field study to evaluate the treatment of naturally occurring SRD, 266 pigs were treated with DRAXXIN. Responses to treatment were compared to saline-treated controls. Success was defined as a pig with a normal attitude, normal respiration, and a rectal temperature of <104°F on Day 7. The treatment success rate was significantly greater (P<0.05) in DRAXXIN-treated pigs (70.5%) compared to saline-treated pigs (46.1%). *M. hyopneumoniae* was isolated from 106 saline-treated and non-treated sentinel pigs in this study.

Two induced infection model studies were conducted to confirm the effectiveness of DRAXXIN against *M. hyopneumoniae*. Ten days after inoculation intranasally and intratracheally with a field strain of *M. hyopneumoniae*, 144 pigs were treated with either DRAXXIN (2.5 mg/kg BW) intramuscularly or an equivalent volume of saline. Pigs were euthanized and necropsied 10 days posttreatment. The mean percentage of gross pneumonic lung lesions was statistically significantly lower (P<0.0001) for DRAXXIN-treated pigs than for saline-treated pigs in both studies (8.52% vs. 23.62% and 11.31% vs. 26.42%).

The effectiveness of DRAXXIN for the control of SRD was evaluated in a multi-location national infection field study. When at least 15% of the study candidates showed clinical signs of SRD, all pigs were enrolled and treated with DRAXXIN (226 pigs) or saline (227 pigs). Responses to treatment were evaluated on Day 7. Success was defined as a pig with normal attitude, normal respiration, and rectal temperature of < 104° F. The treatment success rate was significantly greater (P < 0.05) in DRAXXIN-treated pigs compared to saline-treated pigs (59.2% vs. 41.2%).

ANIMAL SAFETY

Cattle

Safety studies were conducted in feeder calves receiving a single subcutaneous dose of 25 mg/kg BW, or 3 weekly subcutaneous doses of 2.5, 7.5, or 12.5 mg/kg BW. In all groups, transient indications of pain after injection were seen, including head shaking and pawing at the ground. Injection site swelling, discoloration of the subcutaneous tissues at the injection site and corresponding histopathologic changes were seen in animals in all dosage groups. These lesions showed signs of resolving over time. No other drug-related lesions were observed macroscopically or microscopically.

An exploratory study was conducted in feeder calves receiving a single subcutaneous dose of 10, 12.5, or 15 mg/kg BW. Macroscopically, no lesions were observed. Microscopically, minimal to mild myocardial degeneration was seen in one of six calves administered 12.5 mg/kg BW and two of six calves administered 15 mg/kg BW.

A safety study was conducted in calves 13 to 27 days of age receiving 2.5 mg/kg BW or 7.5 mg/kg BW once subcutaneously. With the exception of minimal to mild injection site reactions, no drug-related clinical signs or other lesions were observed macroscopically or microscopically.

Swine

Safety studies were conducted in pigs receiving a single intramuscular dose of 25 mg/kg BW, or 3 weekly intramuscular doses of 2.5, 7.5, or 12.5 mg/kg BW. In all groups, transient indications of pain after injection were seen, including restlessness and excessive vocalization. Tremors occurred briefly in one animal receiving 7.5 mg/kg BW. Discoloration and edema of injection site tissues and corresponding histopathologic changes were seen in animals at all dosages and resolved over time. No other drug-related lesions were observed macroscopically or microscopically.

STORAGE CONDITIONS

Store at or below 25°C (77°F).

HOW SUPPLIED

DRAXXIN Injectable Solution is available in the following package sizes:

50 mL vial, 100 mL vial, 250 mL vial, 500 mL vial

U.S. Patents: See US 6,329,345; US 6,420,536; US 6,514,945; US 6,583,274;

US 6,777,393

NADA 141-244, Approved by FDA



Distributed by:
Pfizer Animal Health
Division of Pfizer Inc, NY, NY 10017

To report a suspected adverse reaction call **1-800-366-5288**.

To request a material safety data sheet call **1-800-733-5500**.

For additional DRAXXIN product information call
1-888-DRAXXIN or go to **www.DRAXXIN.com**



Made in France.

Tylan® 200

Injection

250 mL

Tylosin

For Use In Cattle and Swine Only

200 mg per mL

An Antibiotic

Indications: In Beef Cattle and Non-lactating Dairy Cattle, Tylan 200 Injection is indicated for use in the treatment of bovine respiratory complex (shipping fever, pneumonia) usually associated with *Pasteurella multocida* and *Arcanobacterium pyogenes*; foot rot (necrotic pododermatitis) and calf diphtheria caused by *Fusobacterium necrophorum* and metritis caused by *Arcanobacterium pyogenes*.

In Swine, Tylan 200 Injection is indicated for use in the treatment of swine arthritis caused by *Mycoplasma hyosynoviae*; swine pneumonia caused by *Pasteurella* spp.; swine erysipelas caused by *Erysipelothrix rhusiopathiae*; swine dysentery associated with *Treponema hyodysenteriae* when followed by appropriate medication in the drinking water and/or feed.

Each mL contains 200 mg of tylosin activity (as tylosin base) in 50 percent propylene glycol with 4 percent benzyl alcohol and water for injection.

ADMINISTRATION AND DOSAGE:

Tylan 200 Injection is administered intramuscularly.

BEEF CATTLE AND NON-LACTATING DAIRY CATTLE – Inject intramuscularly 8 mg per pound of body weight one time daily (1 mL per 25 pounds). Treatment should be continued 24 hours following remission of disease signs, not to exceed 5 days. Do not inject more than 10 mL per site.

SWINE – Inject intramuscularly 4 mg per pound of body weight (1 mL per 50 pounds) twice daily. Treatment should be continued 24 hours following remission of disease signs, not to exceed 3 days. Do not inject more than 5 mL per site.

Read accompanying directions fully before use.

CAUTION:

Do not mix Tylan 200 Injection with other injectable solutions as this may cause a precipitation of the active ingredients.

WARNINGS:

NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN.

Adverse reactions, including shock and death may result from overdosage in baby pigs.

Do not attempt injection into pigs weighing less than 25 pounds (0.5 mL) with the common syringe. It is recommended that Tylan 50 Injection be used in pigs weighing less than 25 pounds.

Do not administer to horses or other equines. Injection of tylosin in equines has been fatal.

RESIDUE WARNING: Swine:

Swine intended for human consumption must not be slaughtered within 14 days of the last use of this drug product.

RESIDUE WARNING: Cattle:

Cattle intended for human consumption must not be slaughtered within 21 days of the last use of this drug product. This drug product is not approved for use in female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows. This product is not approved for use in calves intended to be processed for veal. A withdrawal period has not been established in pre-ruminating calves.

If tylosin medicated drinking water is used as a follow-up treatment for swine dysentery, the animal should thereafter receive feed containing 40 to 100 grams of tylosin per ton for 2 weeks to assure depletion of tissue residues.

Store at or below 25°C (77°F).

Elanco, Tylan and the diagonal bar are trademarks owned or licensed by Eli Lilly and Company, its subsidiaries or affiliates.

Restricted Drug (California) - Use Only as Directed.

NADA 12-965, Approved by FDA

To report adverse effects, access medical information, or obtain additional product information, call 1-800-428-4441.

Manufactured for:

Elanco Animal Health

A Division of Eli Lilly and Company
Indianapolis, IN 46285, USA

Tylan® 200

Injectable

250 mL

(tilosina)

Para uso exclusivo en ganado vacuno y cerdos

200 mg por ml

Un antibiótico

Indicaciones: En ganado vacuno y vacas lecheras no lactantes, Tylan 200 inyectable se indica para el tratamiento del complejo respiratorio bovino (fiebre de embarque, neumonía), generalmente asociado con *Pasteurella multocida* y *Arcanobacterium pyogenes*, piñet (pododermatitis necrótica), difteria de los terneros provocada por *Fusobacterium necrophorum* y metritis provocada por *Arcanobacterium pyogenes*.

En cerdos, Tylan 200 inyectable se indica para el tratamiento de artritis en cerdos provocada por *Mycoplasma hyosynoviae*, neumonía porcina causada por *Pasteurella* spp., erisipelas porcinas provocadas por *Erysipelothrix rhusiopathiae*, disentería porcina asociada con *Treponema hyodysenteriae* cuando es tratada con el medicamento apropiado a través del alimento y/o el agua para beber.

Cada ml contiene 200 mg de actividad de tilosina (como tilosina base) en propilenglicol al 50 por ciento, alcohol bencílico al 4 por ciento y agua para inyección.

POSOLÓGIA Y ADMINISTRACIÓN:

Tylan 200 inyectable se administra por vía intramuscular.

GANADO VACUNO Y VACAS LECHERAS NO LACTANTES – Inyectar por vía intramuscular 8 mg por libra de peso corporal una vez al día (1 ml cada 25 libras). El tratamiento debe continuarse durante 24 horas luego de la remisión de los signos de la enfermedad sin extenderse más de 5 días. No aplicar más de 10 ml por lugar de inyección.

CERDOS – Inyectar por vía intramuscular 4 mg por libra de peso corporal (1 ml cada 50 libras) dos veces al día. El tratamiento debe continuarse durante 24 horas luego de la remisión de los signos de la enfermedad sin extenderse más de 3 días. No aplicar más de 5 ml por lugar de inyección.

Leer todas las instrucciones adjuntas antes de usar.

PRECAUCIÓN:

No mezclar la inyección Tylan 200 con otras soluciones inyectables ya que esto puede ocasionar la precipitación de los principios activos.

ADVERTENCIAS:

ESTE PRODUCTO NO DEBE UTILIZARSE EN SERES HUMANOS. MANTENER FUERA DEL ALCANCE DE LOS NIÑOS.

Pueden ocurrir reacciones adversas, incluidos shock y muerte, en caso de sobredosis en crías de cerdos. No administrar la inyección a cerdos que pesen menos de 25 libras (0.5 ml) con la jeringa común. Se recomienda usar la inyección Tylan 50 en cerdos que pesen menos de 25 libras. No administrar a caballos u otros equinos. La inyección de tilosina en equinos ha resultado mortal.

ADVERTENCIA ACERCA DE RESIDUOS: Ganado porcino:

el ganado porcino previsto para consumo humano no se debe faenar durante los 14 días posteriores al último uso de este producto farmacológico.

ADVERTENCIA ACERCA DE RESIDUOS: Ganado bovino:

el ganado bovino previsto para consumo humano no se debe faenar durante los 21 días posteriores al último uso de este producto farmacológico. Este producto farmacológico no está aprobado para su uso en ganado bovino lechero hembra de 20 meses de edad o más, incluidas las vacas lecheras secas. El uso en este ganado bovino puede producir residuos farmacológicos en la leche y/o en los terneros nacidos de estas vacas. Este producto no está aprobado para el uso en terneros que se procesarán para carne de ternera. No se ha establecido un período de retiro del fármaco en terneros prerrumiantes.

Si se suministra agua para beber con tilosina como tratamiento de seguimiento para la disentería porcina, el animal debe recibir posteriormente alimento que contenga entre 40 y 100 gramos de tilosina por tonelada durante 2 semanas para garantizar la depleción de los residuos de tejidos.

Almacenar a 25 °C (77 °F) o menos.

Elanco, Tylan y la barra diagonal son marcas registradas propiedad de o licenciadas a Eli Lilly and Company o sus filiales.

Medicamento restringido (California). Usar únicamente según las instrucciones.

NADA 12-965, Aprobado por la FDA

Para informar efectos adversos, obtener información médica o información adicional sobre el producto, llame al 1-800-428-4441.

Fabricado por:

Elanco Animal Health

Una división de Eli Lilly and Company
Indianapolis, IN 46285, USA

County_____ANSWER KEY_____

Team Members _____

Senior Team Breeding Exercise – 2014

Your group is a genetic and marketing consultant for Bluegrass Cattle Company, a progressive registered Angus and Simmental seedstock operation that maintains 200 purebred Angus females and 100 purebred Simmental females in South Central Kentucky. The cowherd is managed much like any progressive commercial herd in the area. Due to this fact, the primary market for this operation is the sale of balanced trait Angus and Simmental bulls to progressive commercial beef operations across the southeast.

Nearly your entire customer base sells feeder cattle through preconditioned feeder cattle sales (e.g., the Kentucky CPH-45 Feeder Cattle Sales). Therefore, these bulls need to produce calves that will be moderate size at birth, grow fast, wean heavy, and continue to grow efficiently through a 45 day backgrounding period without becoming overly fleshy. Also many of your customers raise their own replacement females so efficient mature size, optimum milking ability, and longevity are also important. Most of the commercial cowherds you sell bulls to are made up of a mixture of Angus, Hereford, Red Angus, Gelbvieh, and Charolais genetics. Labor and feed resources of most of the commercial operations that you sell bulls to is average to limited.

Your job assignment is to use the EPD data provided to select three (3) Angus bulls and two (2) Simmental bulls to purchase semen from for use at Bluegrass Cattle Company. Answer the questions below and on the back side of this sheet , and then explain to the Contest Official why your group chose the 5 bulls that you did.

[There are 13 answers to the questions worth 10 points each for a total of 130 possible points and your discussion with the Official is worth 70 possible points for a grand total of 200 possible points.]

1.) What **three (3)** Angus Bulls did you select?

Lancer

Stockman

Traveler

New Design

Extra

2.) What **two (2)** Simmental Bulls did you select?

Macho

Dream On

Buck

Big Sky

Six Shooter

3.) Which Angus Bull would mostly like sire the calves that would have the most desirable USDA Yield Grade carcasses?

Lancer

Stockman

Traveler

New Design

Extra

- 4.) Which Simmental Bull would most likely sire the calves that would have the most desirable USDA Quality Grade carcasses?

Macho **Dream On** **Buck** **Big Sky** **Six Shooter**

- 5.) Which Simmental Bull should sire the easiest keeping daughters?

Macho **Dream On** **Buck** **Big Sky** **Six Shooter**

- 6.) Which Simmental Bull would be the least desirable bull to breed to heifers?

Macho **Dream On** **Buck** **Big Sky** **Six Shooter**

- 7.) Which Angus Bull would most likely sire the heaviest muscled feeder cattle?

Lancer **Stockman** **Traveler** **New Design** **Extra**

- 8.) Which Angus Bull would most likely sire the smallest framed finished cattle and replacement females?

Lancer **Stockman** **Traveler** **New Design** **Extra**

- 9.) Which Simmental Bull's daughters would most likely have the lowest number of assisted births?

Macho **Dream On** **Buck** **Big Sky** **Six Shooter**

- 10.) Which Angus Bull will likely sire daughters that will be the hardest to maintain in a limited resource environment?

Lancer **Stockman** **Traveler** **New Design** **Extra**

EPDs for Angus Bulls

Bulls	Expected Progeny Differences (EPDs)										
	<i>Calving Ease Direct</i>	<i>Birth Weight</i>	<i>Weaning Weight</i>	<i>Yearling Weight</i>	<i>Yearling Height</i>	<i>Calving Ease Maternal</i>	<i>Milk</i>	<i>Carcass Weight</i>	<i>Marbling</i>	<i>Rib Eye Area</i>	<i>Fat</i>
Lancer	+ 12	– 2.5	+ 45	+ 65	+ 0.1	+ 10	+ 20	+ 4.5	+ 0.27	+ 0.15	+ 0.001
Stockman	– 4	+ 5.5	+ 50	+ 90	+ 1.5	+ 2	+ 35	+ 5.0	+ 0.12	+ 0.40	– 0.009
Traveler	+ 4	+ 3.5	+ 35	+ 67	– 1.1	+ 4	+ 15	+ 0.1	+ 0.19	+ 0.12	+ 0.005
New Design	+ 9	+ 1.5	+ 44	+ 74	+ 0.3	+ 10	+ 22	+ 7.0	+ 0.28	+ 0.17	+ 0.003
Extra	+ 10	+ 1.0	+ 48	+ 70	– 0.5	+ 9	+ 18	+ 4.0	+ 0.30	+ 0.20	+ 0.001
Breed Averages	+ 5	+ 1.7	+ 47	+ 84	+ 0.3	+ 6	+ 23	+ 5.0	+ 0.43	+ 0.36	– 0.010

EPDs for Simmental Bulls

Bulls	Expected Progeny Differences (EPDs)												
	<i>Calving Ease</i>	<i>Birth Weight</i>	<i>Weaning Weight</i>	<i>Yearling Weight</i>	<i>Maternal Calving Ease</i>	<i>Milk</i>	<i>Maternal Weaning Weight</i>	<i>Stayability</i>	<i>Carcass Weight</i>	<i>Yield Grade</i>	<i>Marbling</i>	<i>Rib Eye Area</i>	<i>Backfat</i>
Macho	– 1.3	+ 3.0	+ 69	+ 96	+ 8.0	+ 21	+ 43	+ 12	– 2.5	– 0.3	+ 0.07	+ 0.70	+ 0.00
Dream On	+ 5.5	– 0.5	+ 63	+ 92	+ 9.0	+ 20	+ 56	+ 10	– 2.7	+ 0.1	+ 0.09	+ 0.50	+ 0.02
Buck	+ 7.0	– 1.0	+ 65	+ 90	+ 9.5	+ 20	+ 57	+ 19	– 3.0	– 0.1	+ 0.10	+ 0.55	+ 0.01
Big Sky	+ 11.6	– 3.0	+ 48	+ 57	+ 12.2	+ 13	+ 59	+ 17	– 7.8	+ 0.3	+ 0.29	– 0.18	+ 0.05
Six Shooter	+ 10.2	– 2.8	+ 69	+ 95	+ 9.8	+ 25	+ 64	+ 17	– 3.5	– 0.5	+ 0.16	+ 0.60	+ 0.01
Breed Averages	+ 9.0	+ 2.3	+ 62	+ 91	+ 8.1	+ 23	+ 54	+ 19	– 2.0	+ 0.26	+ 0.09	+ 0.60	– 0.06

County_____ANSWER KEY_____

Team Members _____

Senior Team Feeding Exercise – 2014

You are the manager of a progressive commercial beef cattle operation that utilizes Simmental and SimAngus Bulls on a herd of commercial Angus females to produce top-notch replacement heifers. You need a cost effective supplemental ration to meet the needs of your mature cowherd that is moderate framed (1200 pounds) and above average in milking ability. The herd has just finished calving in a tight 45 day calving season. The cows are currently on free choice fescue hay that tested 10% protein and 50% TDN. They are eating about 2% of their body weight per day of this hay. The cows have access to a high quality vitamin/mineral supplement and a free choice water system.

Your job assignment is to use the list of available supplements and nutrient requirements for a 1200 pound cow provided to choose one or two supplements to feed. Answer the questions below and on the back side of this sheet, and then explain to the Contest Official the basis for your decision.

[There are 8 questions worth 10 points each for a total of 80 possible points and your discussion with the Official is worth 120 possible points for a grand total of 200 possible points.]

1.) What stage of production are these cows currently in?

Mid Gestation

Late Gestation

Early Lactation

2.) Approximately how many pounds of hay are these cows consuming on a per cow per day basis?

10 pounds

20 pounds

24 pounds

30 pounds

3.) Which nutrient is this hay most deficient in?

Protein

TDN (energy)

4.) Of the supplements that are 20% or higher in protein, which is the most expensive to feed on a cost per pound of protein basis?

Corn Gluten

Protein Block

Distillers Dried Grains

Soybean Meal

5.) In terms of dollars per ton, which is the cheapest supplement?

Cracked Corn

Soyhulls

Corn Gluten

Protein Block

Distillers Dried Grains

Soybean Meal

6.) If the hay costs \$30 per roll and a roll weighs 1000 lbs, what is the hay feeding cost per cow per day?

\$0.72 per cow per day

7.) Which supplement or supplements did you choose and how much did you feed of each?

Full Credit Answers

3 lbs Distillers Dried Grains + 3 lbs Cracked Corn

– OR –

5 lbs Distillers Dried Grains

Partial Credit Answers

7 lbs Soyhulls

– OR –

7 lbs Corn Gulten

8.) Excluding hay costs, how much does your supplement cost per cow per day?

Full Credit Answers

3 lbs Distillers Dried Grains + 3 lbs Cracked Corn = \$0.63/cow/day

– OR –

5 lbs Distillers Dried Grains = \$0.65/cow/day

Partial Credit Answers

7 lbs Soyhulls = \$0.70/cow/day

– OR –

7 lbs Corn Gulten = \$0.70/cow/day

Supplements Available

<i>Supplement</i>	<i>Protein%</i>	<i>TDN% (energy)</i>	<i>Maximum intake (lbs)</i>	<i>Price (\$) per pound as fed</i>
Cracked Corn	8	90	6	\$0.08
Soyhulls	11	80	10	\$0.10
Corn Gluten	22	80	8	\$0.10
Protein Block	30	90	1.5	\$0.30
Distillers Dried Grains	30	100	6	\$0.13
Soybean Meal	50	90	4	\$0.30

Nutrient Requirements

1200 pound cow – 20 pounds milk

Stage of Production	Dry Matter Intake		TDN (Energy)		Protein	
	% Body Weight	Pounds	% Body Weight	Pounds	% Body Weight	Pounds
Mid Gestation	1.9	23	47	11	7	1.6
Late Gestation	2.1	25	55	14	9	2.3
Early Lactation	2.3	28	60	17	11	3.1