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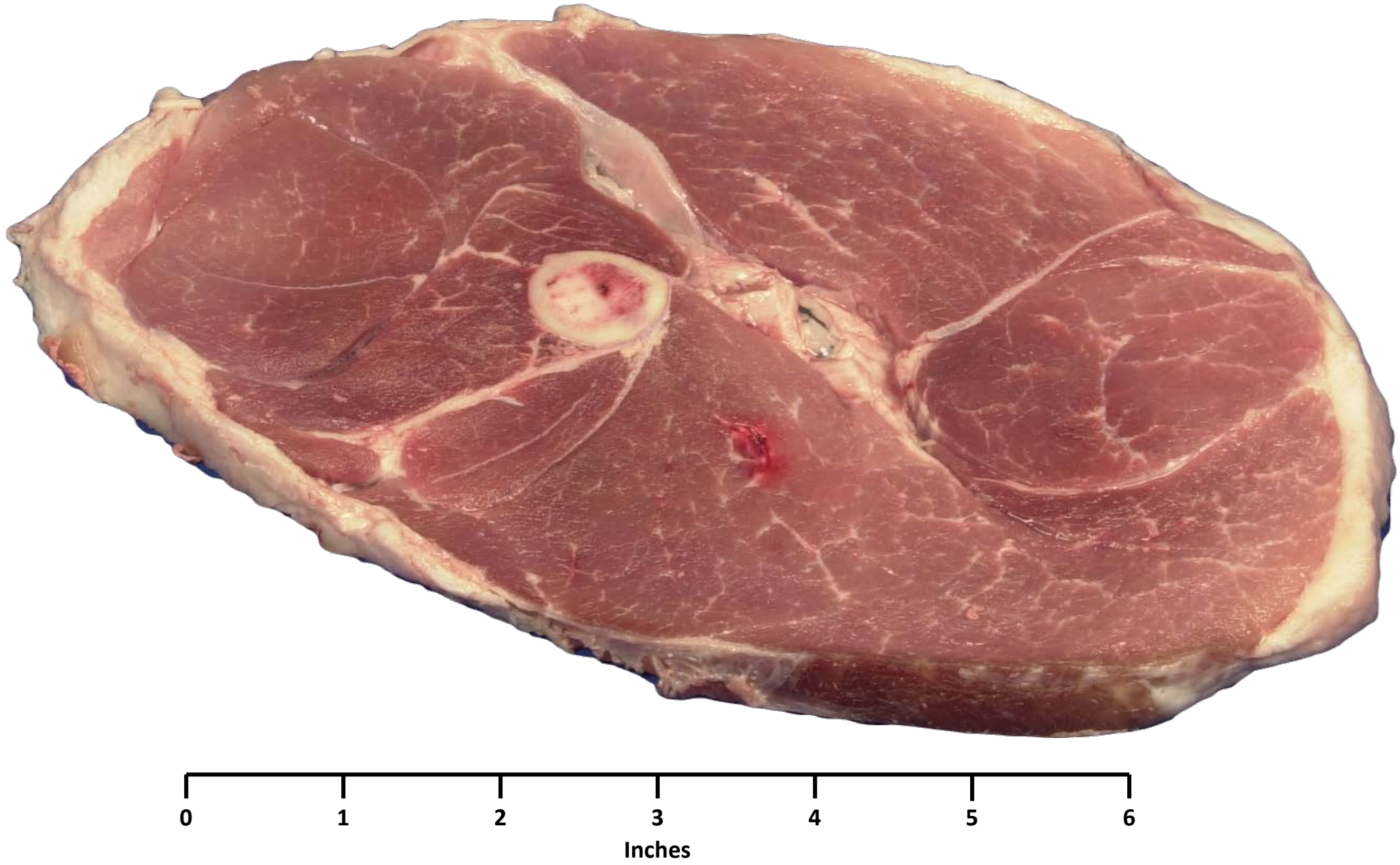


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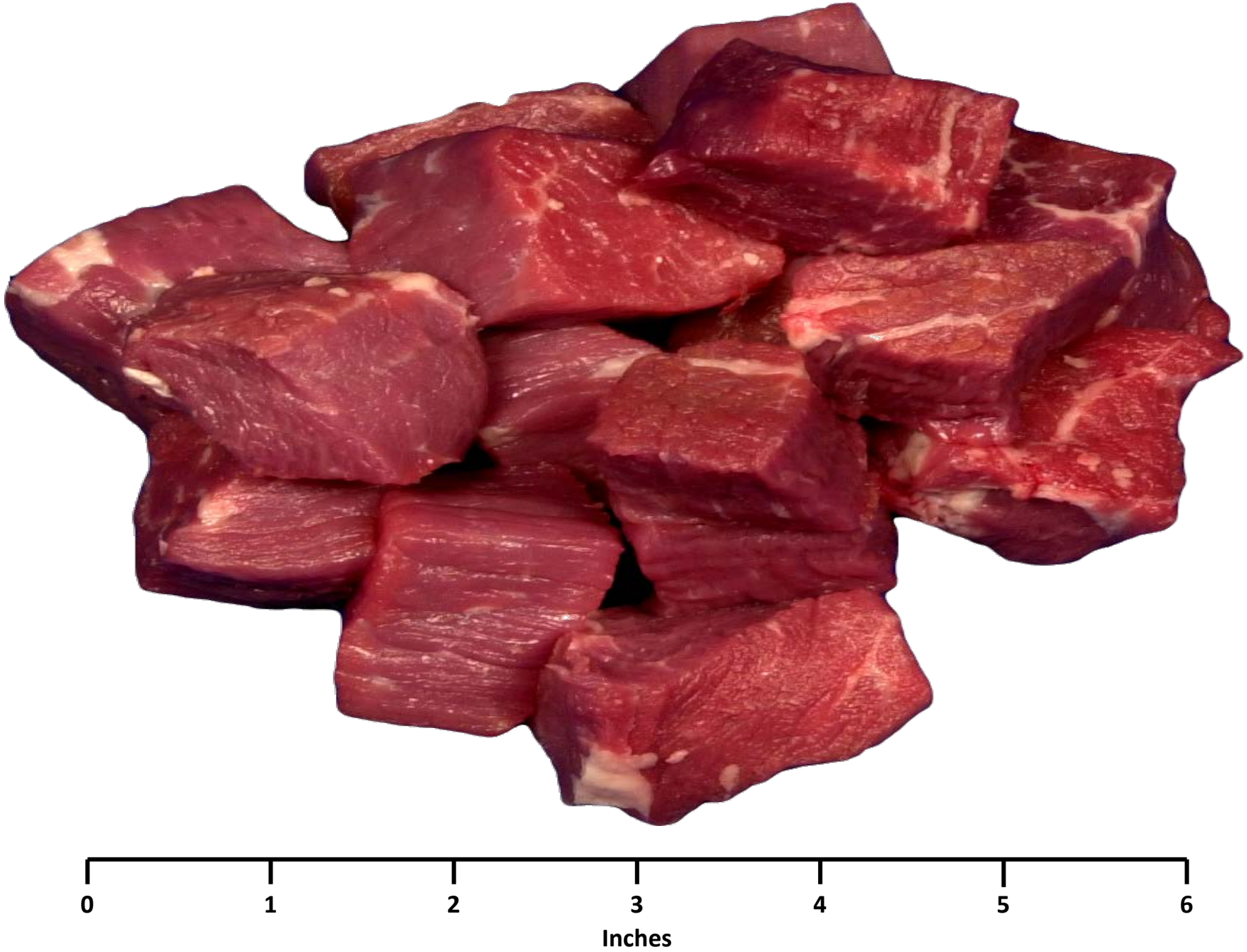

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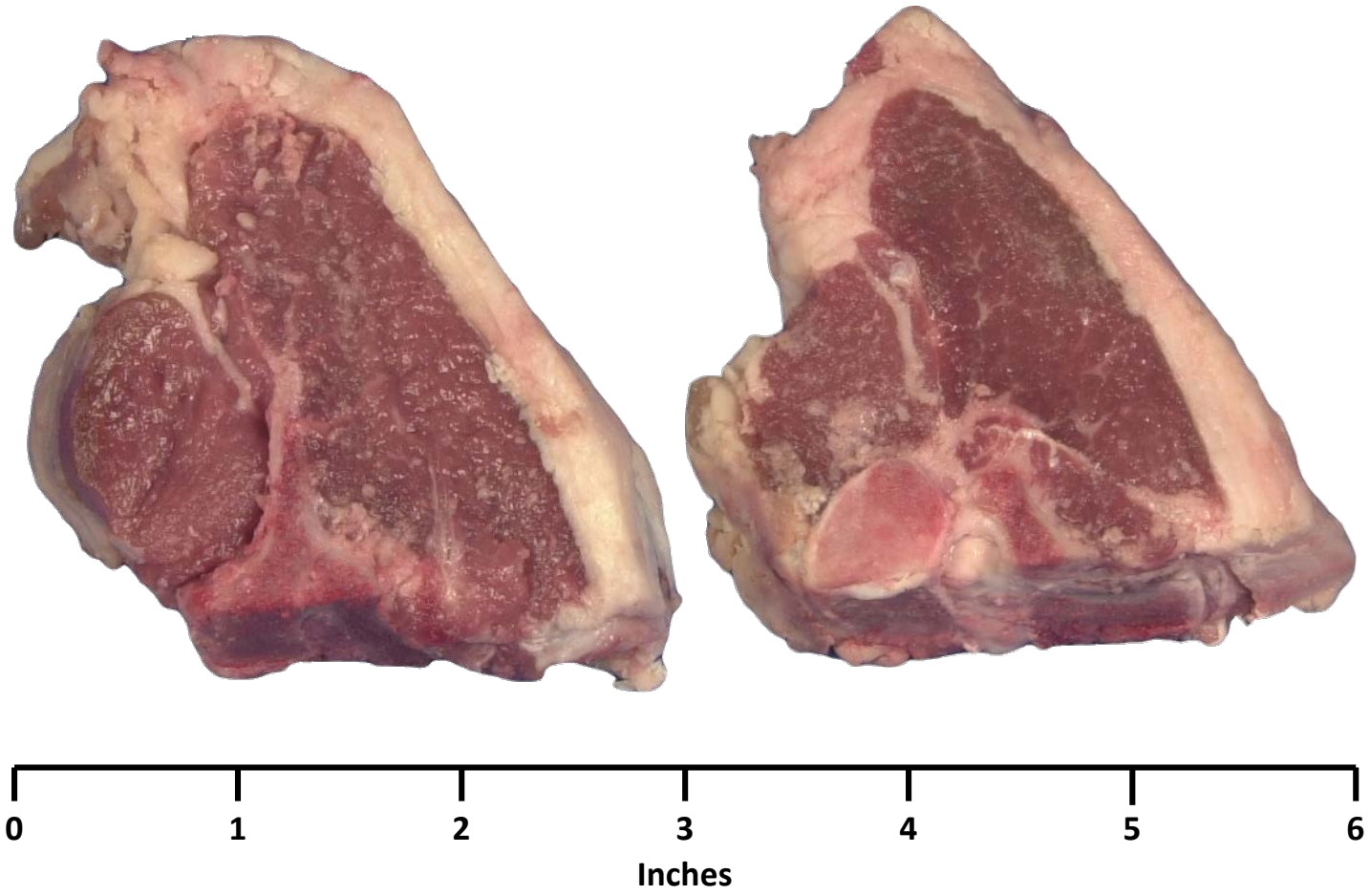

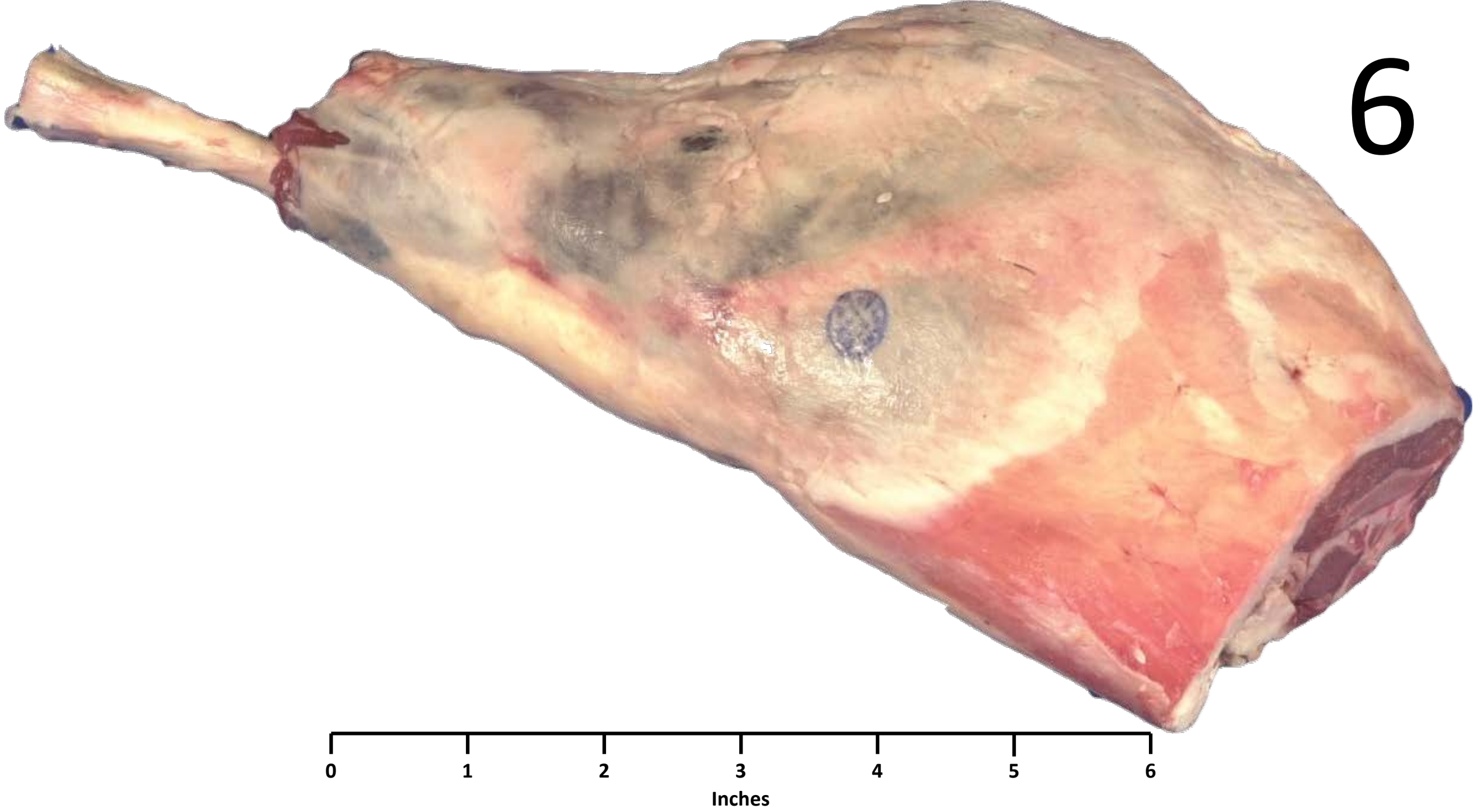
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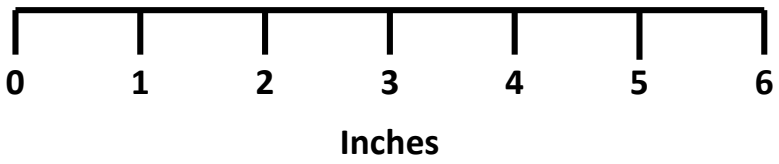

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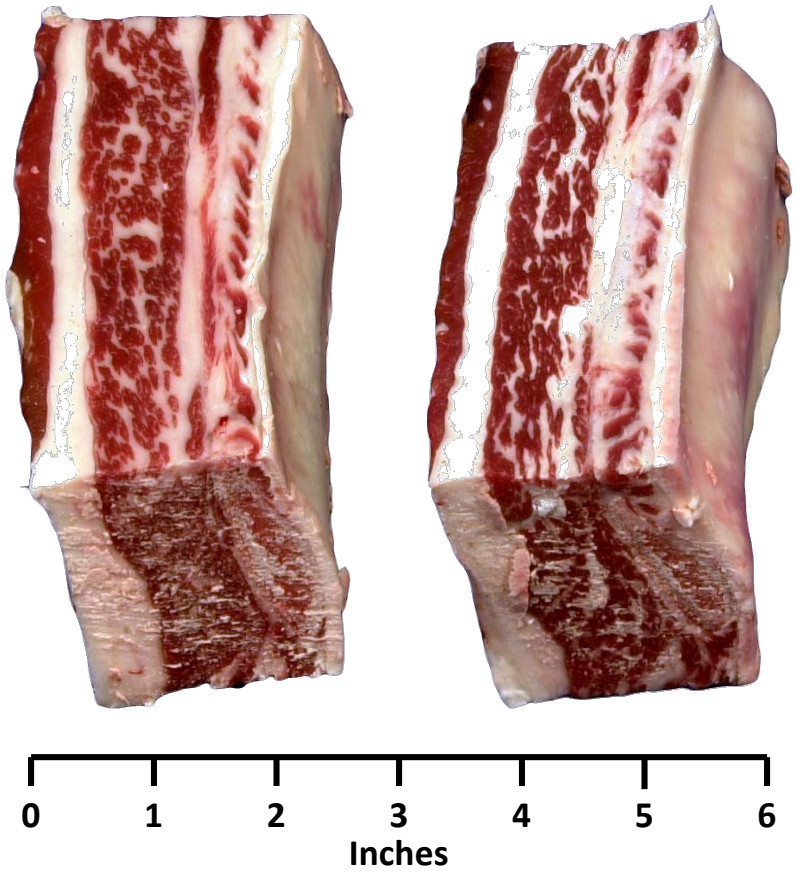


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Inches

Name_____ Contestant #_____County_____

Senior Retail Meat Cut Identification – 2019

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).

	Retail Cut Name	Species of Cut	Wholesale Cut of Origin
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

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

Beef Retail Meat Cuts

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

Lamb Retail Meat Cuts

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

Pork Retail Meat Cuts

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

KEY

Senior Retail Meat Cut Identification – 2019

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).

	Retail Cut Name	Species of Cut	Wholesale Cut of Origin
1.	31	B	F
2.	66	P	R
3.	20	B	D
4.	1	B	I
5.	56	L	L
6.	52	L	K
7.	3	B	A
8.	70	P	T
9.	24	B	E
10.	73	P	T

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

Beef Retail Meat Cuts

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

Lamb Retail Meat Cuts

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

Pork Retail Meat Cuts

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

Name_____ Contestant #_____ County_____

Senior Livestock Feed Identification – 2019

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	Charact-eristics/ Uses
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Feed Names – to be used in answer column 1 by <u>Seniors</u>

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

Feeds Nutrient Groups – to be used in answer column 2 by <u>Seniors</u>

<u>(You may use the letter more than once!!)</u>

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

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

A. These have been passed through a roller to produce a flake. Primarily used in horse feeds or young animals.

B. Shelled corn that has been passed through a roller mill to break it into smaller particles.

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".

D. Bulk density = 5 pounds/bushel

E. Bulk density = 32 pounds/bushel

F. Grown primarily in dry regions of U.S., where there is not enough rain for corn production.

G. A source of nitrogen. Should be fed to ruminants only. Need to be mixed with a feed source that contains energy.

H. Oil is removed. High fiber, palatable feedstuff used as a roughage for cattle. Will increase bulk density in grain mixes.

I. Produced by extracting the sugar from sugar beets and drying the remaining pulp.

J. High in protein, and contains active immunoglobulins.

K. Commonly used source of calcium and phosphorus in livestock feeds.

L. Also referred to as bluestone.

M. Liquid byproduct of the manufacture of sugar from either sugar beets or, more commonly, sugarcane.

N. Primarily used in human food, but can be fed to livestock. Usually processed in some way prior to feeding.

KEY

Senior Livestock Feed Identification – 2019

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	Charact-eristics/ Uses
1.	71	C	N
2.	73	B or C	C
3.	7 or 11	M	L
4.	34	C	M
5.	15	C	B
6.	13	B or C	H
7.	16	C	A
8.	25	C	F
9.	20	B or C	I
10.	68	P	G

Feed Names – to be used in answer column 1 by <u>Seniors</u>

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

Feeds Nutrient Groups – to be used in answer column 2 by <u>Seniors</u>

<u>(You may use the letter more than once!!)</u>

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

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

A. These have been passed through a roller. Primarily used in horse feeds or young animals.

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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".

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E. Bulk density = 32 pounds/bushel

F. Grown primarily in dry regions of U.S., where there is not enough rain for corn production.

G. A source of nitrogen. Should be fed to ruminants only. Need to be mixed with a feed source that contains energy.

H. Oil is removed. High fiber, palatable feedstuff used as a roughage for cattle. Will increase bulk density in grain mixes.

I. Produced by extracting the sugar from sugar beets and drying the remaining pulp.

J. High in protein, and contains active immunoglobulins.

K. Commonly used source of calcium and phosphorus in livestock feeds.

L. Also referred to as bluestone.

M. Liquid byproduct of the manufacture of sugar from either sugar beets or, more commonly, sugarcane.

N. Primarily used in human food, but can be fed to livestock. Usually processed in some way prior to feeding.

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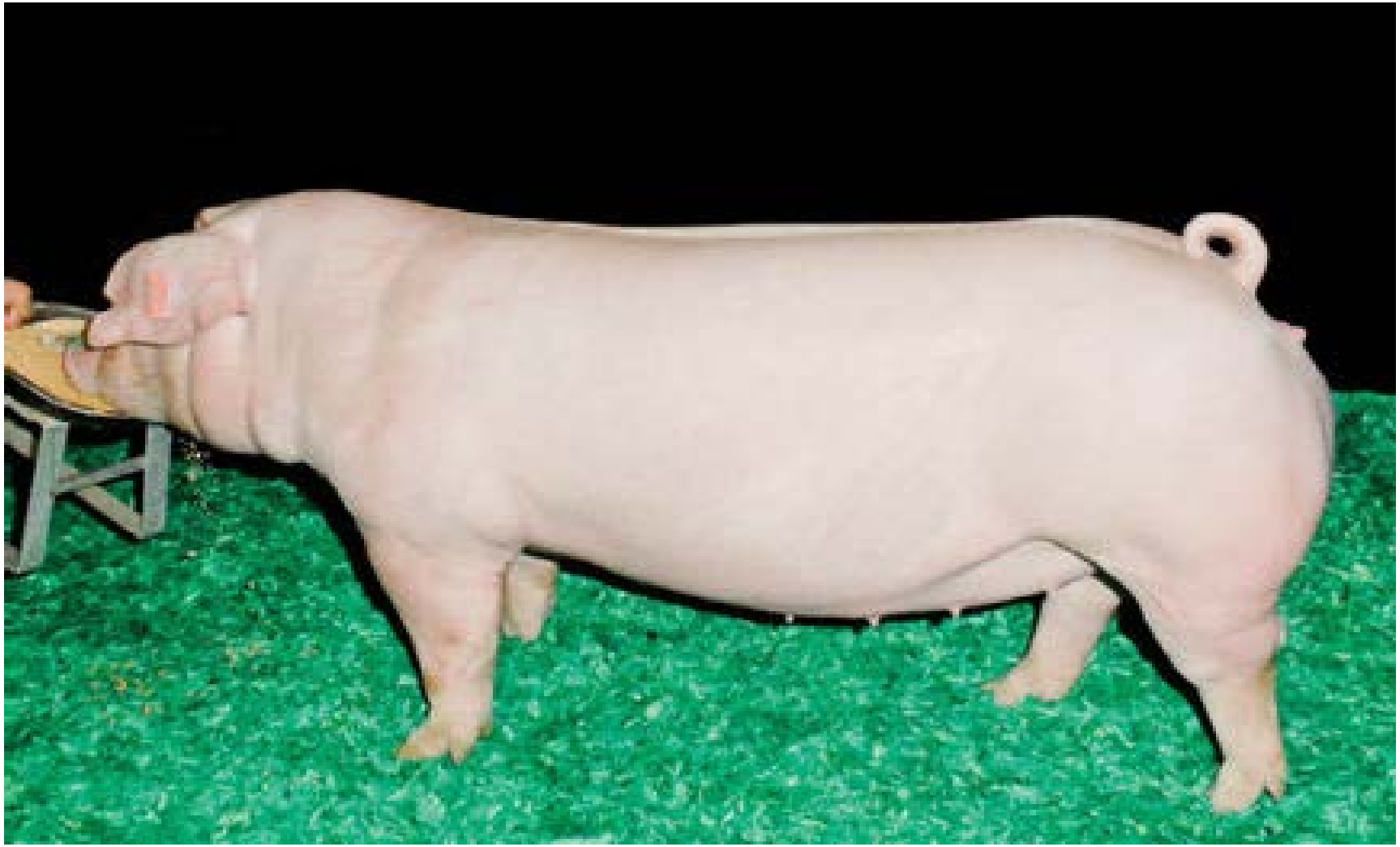


10.

Name_____ Contestant #_____County_____

Senior Livestock Breeds Identification – 2019

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 for each part of the question. (150 points total for Seniors).

	Breed Name	Origin of Breed	Important Traits
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

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 Face Cross	

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

Answers will be used ONLY once, accept for the letter (A)

A. Africa

B. Sussex, England

C. British Isles

D. Developed from the Jersey Red and the Duroc of NY

E. Suffolk, England

F. England

G. Danish descendants

H. Developed in Butler and Warren Counties, OH, US

I. Herefordshire, England

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

Some answers will be used more than once

Beef Cattle Characteristics/Traits

A. Foraging Ability and Docility.
B. Heavily Muscled, Excellent Growth Rate, Late Maturing.
C. Excellent Meat Quality (nicely marbled), Calving Ease, and Hardy.

Goats Characteristics/Traits

D. Meat yield, growth rate, browsing ability, fertility, adaptability to wide Climatic conditions, and extended breeding season.
E. High Butterfat Content, Extended Breeding Season, Multi-Purpose use, (milk, meat and hide).

Sheep Characteristics/Traits

F. Carcass conformation, early maturity, and adaptability to climates.
G. Prolificacy, Wool Production and Mothering Ability.
H. Muscling and leanness, growth rate, and fertility.

Swine Characteristics/Traits

I. Extreme muscling and leanness.
J. Meat Quality (Intramuscular Fat).
K. Excellent rate of gain and feed efficiency.
L. Prolificacy (litter size), milking ability, mothering ability.

KEY

Senior Livestock Breeds Identification – 2019

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 for each part of the question. (150 points total for Seniors).

	Breed Name	Origin of Breed	Important Traits
1.	44	B	F
2.	33	A	G
3.	7	I	A
4.	57	F	L
5.	45	E	H
6.	11	C	C
7.	54	H	I
8.	20	A	D
9.	52	G	L
10.	49	D	J

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

Beef Breeds
1. Angus
2. Brahman
3. Brangus
4. Charolais
5. Chianina
6. Gelbvieh
7. Hereford
8. Limousin
9. Maine Anjou
10. Polled Hereford
11. Red Angus
12. Red Poll
13. Santa Gertrudis
14. Shorthorn
15. Simmental
16. Tarentaise

Goat Breeds
17. Alpine
18. American Cashmere
19. Angora
20. Boer
21. Kiko
22. Lamancha
23. Nubian
24. Oberhasli
25. Pygmy
26. Saanen
27. Spanish
28. Tennessee Fainting
29. Toggenburg

Sheep Breeds
30. Cheviot
31. Columbia
32. Corriedale
33. Dorper
34. Dorset
35. Finnsheep
36. Hampshire
37. Katahdin
38. Merino
39. Montadale
40. Oxford
41. Polled Dorset
42. Rambouillet
43. Romney
44. Southdown
45. Suffolk
46. White Face Cross

Swine Breeds
47. Berkshire
48. Chester White
49. Duroc
50. Hampshire
51. Hereford
52. Landrace
53. Pietrain
54. Poland China
55. Spotted
56. Tamworth
57. Yorkshire

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

Answers will be used ONLY once, accept for the letter (A)

A. Africa

B. Sussex, England

C. British Isles

D. Developed from the Jersey Red and the Duroc of NY

E. Suffolk, England

F. England

G. Danish descendants

H. Developed in Butler and Warren Counties, OH, US

I. Herefordshire, England

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

Answers will be used only once EXCEPT for (L).

Beef Cattle Characteristics/Traits

A. Foraging Ability and Docility.
B. Heavily Muscled, Excellent Growth Rate, Late Maturing.
C. Excellent Meat Quality (nicely marbled), Calving Ease, and Hardy.

Goats Characteristics/Traits

D. Meat yield, growth rate, browsing ability, fertility, adaptability to wide Climatic conditions, and extended breeding season.
E. High Butterfat Content, Extended Breeding Season, Multi-Purpose use, (milk, meat and hide).

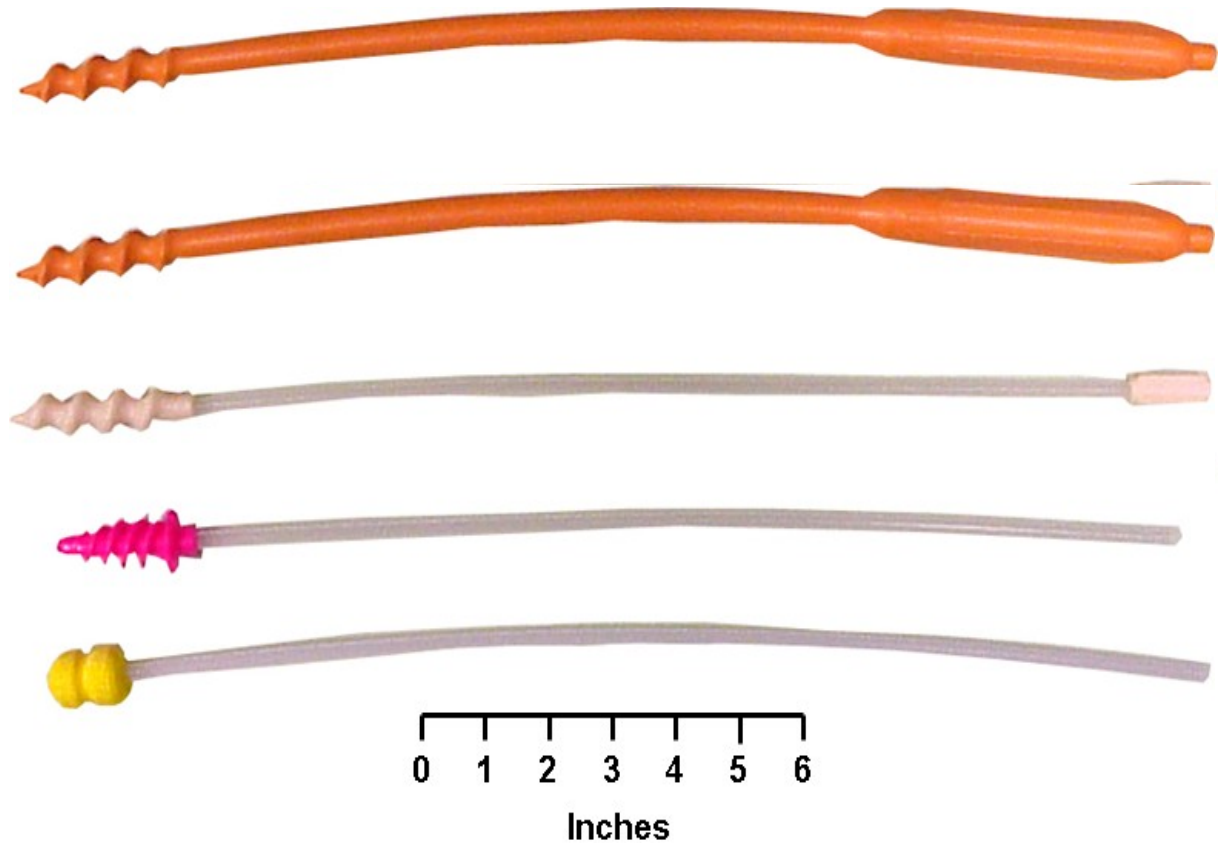
Sheep Characteristics/Traits

F. Carcass conformation, early maturity, and adaptability to climates.
G. Meat qualities, High production rate (Fertility), Reproduction (Twins), Weight gain, Carcass quality, can be white or have a black head.
H. Muscling and leanness, growth rate, and fertility.

Swine Characteristics/Traits

I. Meat Quality (Intramuscular Fat).
J. Excellent rate of gain and feed efficiency.
K. ?
L. Prolificacy (litter size), milking ability, mothering ability.

1



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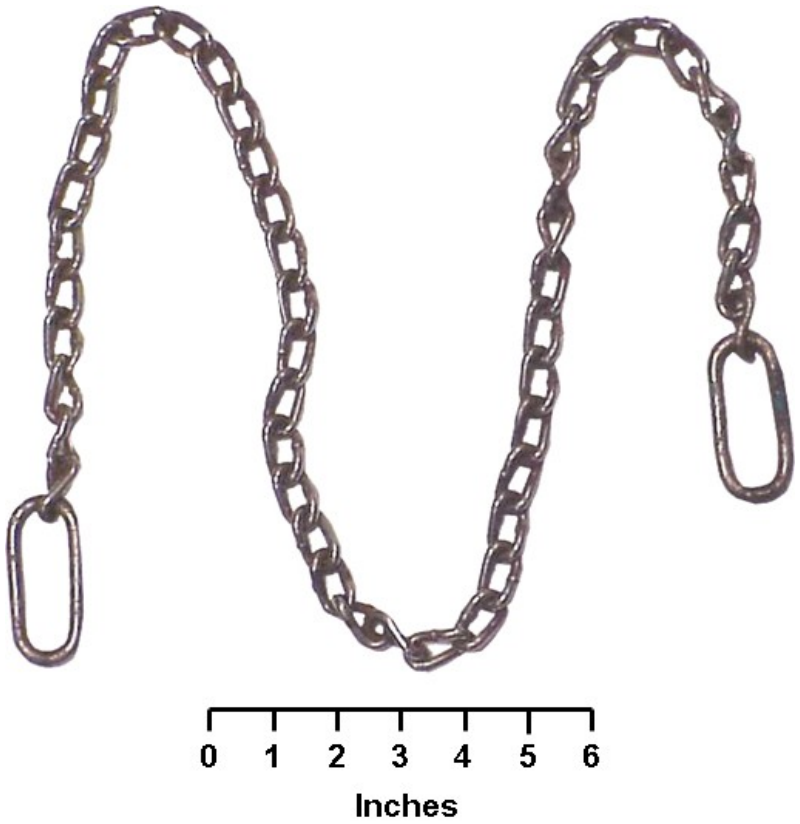

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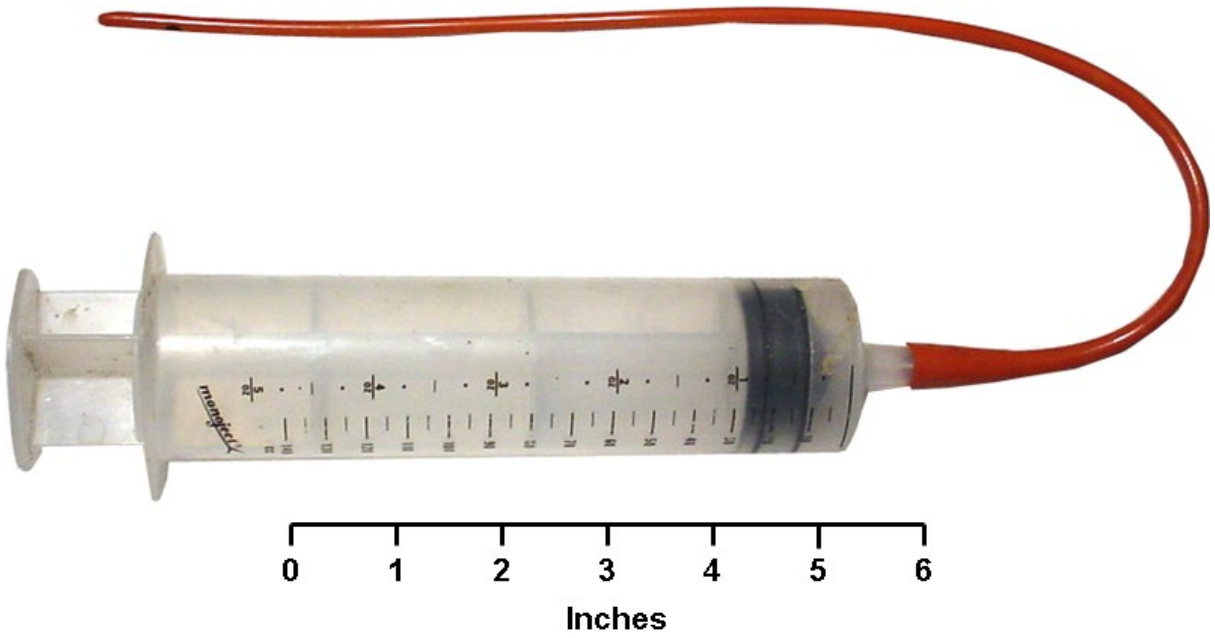


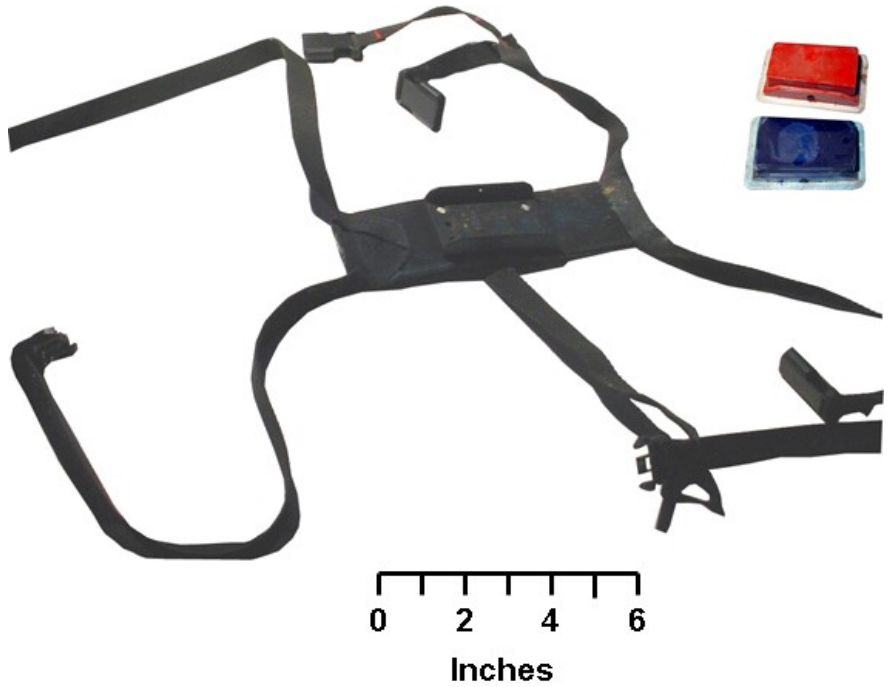
6

7


INSTRUCCIONES: Retire la película que cubre la punta de la barra todos los días antes de marcar. Marca sobre cuero, pellejo y piel, secos y mojados.
48615 61025 2
PART NO. 61025
ALL-WEATHER®
PAINTSTIK®
LIVESTOCK MARKER
MARQUEUR À BÉTAIL
MARCADOR PARA GANADO
NET WT. 3¼ oz.


INSTRUCCIONES: Retire la película que cubre la punta de la barra todos los días antes de marcar. Marca sobre cuero, pellejo y piel, secos y mojados.
48615 61024 6
PART NO. 61024
ALL-WEATHER®
PAINTSTIK®
LIVESTOCK MARKER
MARQUEUR À BÉTAIL
MARCADOR PARA GANADO
NET WT. 3¼ oz.

8



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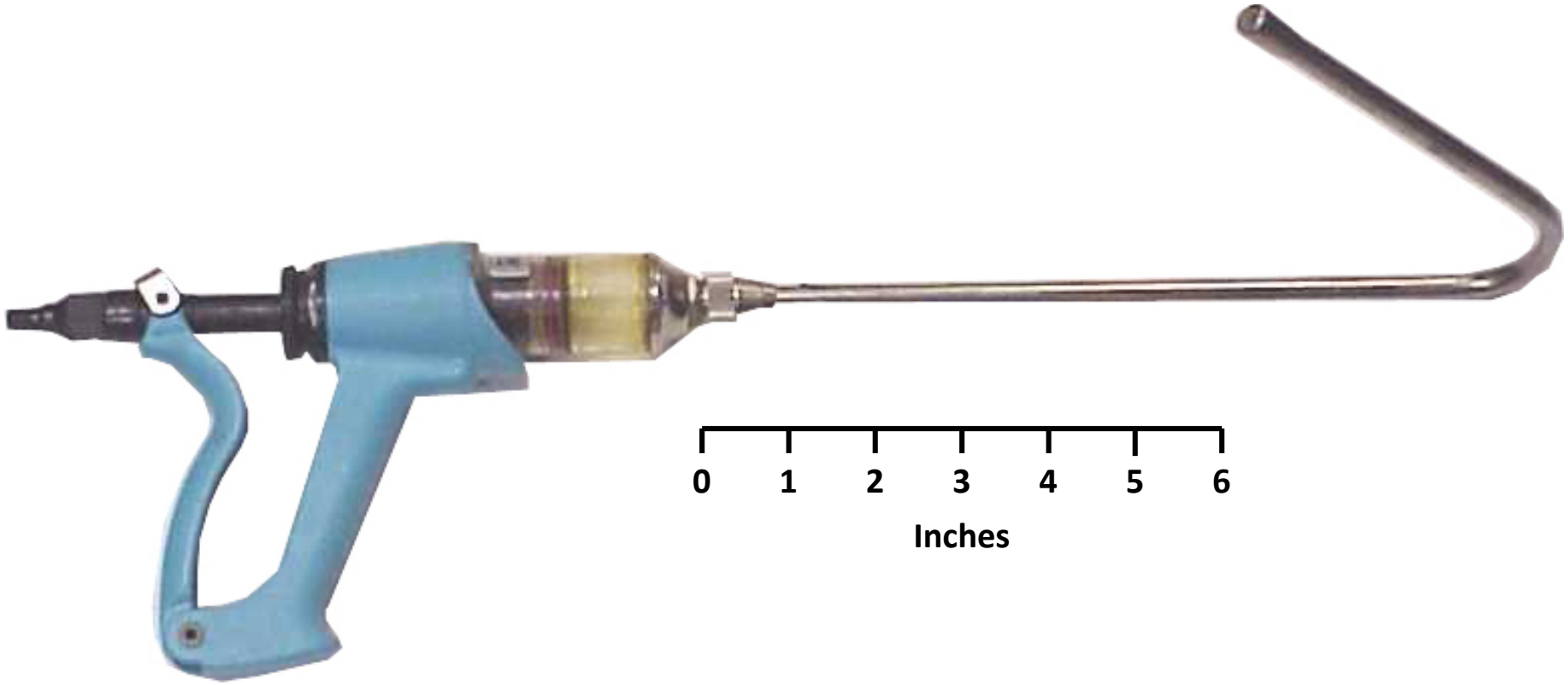

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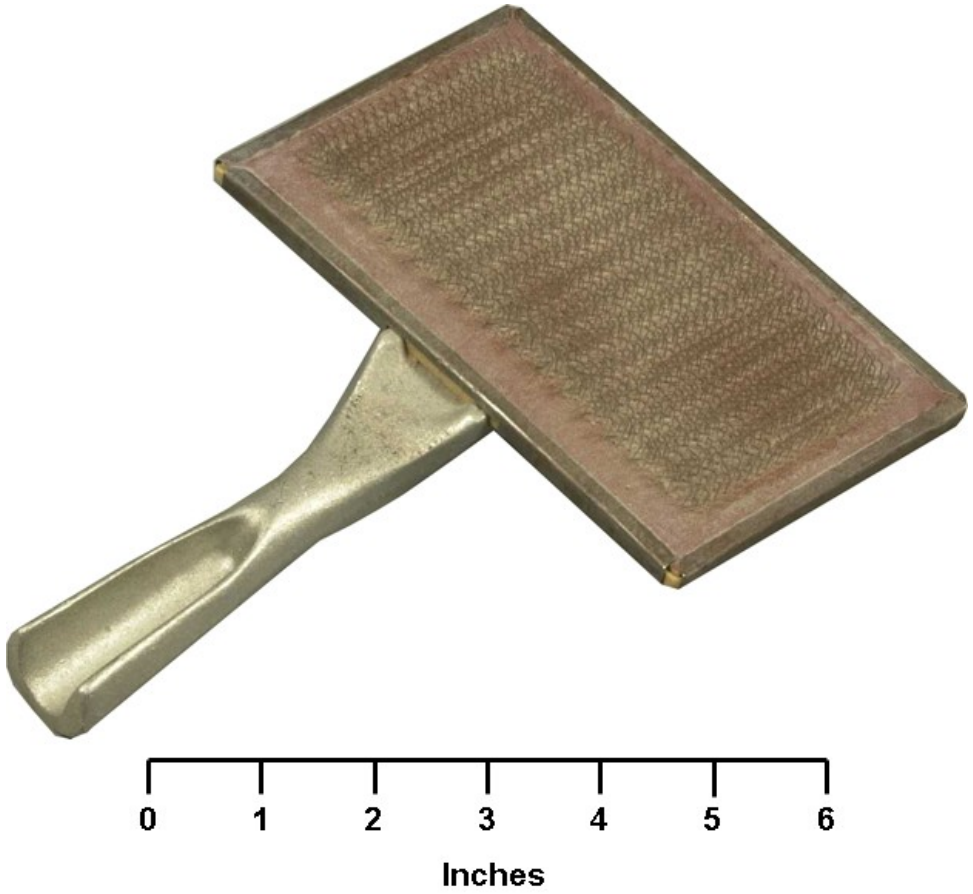

Name_____ Contestant #_____County_____

Senior Livestock and Meat Equipment Identification – 2019

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.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

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

Livestock Equipment

1. All Weather Paintstik.
2. Artificial insemination pipettes (Swine)
3. Bowl waterer
4. Balling gun
5. Barnes dehorner
6. Cattle clippers
7. Clipper comb
8. Clipper cutter
9. Currycomb
10. Disposable syringes
11. Drench gun
12. Ear notchers
13. Ear tag
14. Elastrator
15. Electric branding iron
16. Electric docker
17. Electric fence wire roller
18. Electric sheep shears
19. Emasculatome (Burdizzo)
20. Ewe prolapse retainer
21. Fencing pliers
22. Foot rot shears
23. Freeze branding iron
24. Hanging Scale
25. Hand sheep shears
26. Lamb tube feeder
27. Needle teeth nippers
28. Nipple waterer
29. Nose ring
30. Nose ring pliers
31. Obstetrical (O.B.) chain
32. Plastic Sleeve
33. Ralgro pellet injector
34. Ram marking harness
35. Rumen magnate
36. Scotch Comb
37. Semen Storage Tank
38. Slap tattoo
39. SYNOVEX Implant cartridge
40. SYNOVEX Implant gun
41. T-Post Electric Fence Insulator
42. Water Heater
43. Wood post electric fence insulator
44. Wool Card

Meat Equipment

45. Backfat ruler
46. Band saw
47. Bone dust scraper
48. Boning knife
49. Bowl chopper
50. Dehairing machine
51. Electrical stunner
52. Emulsifier
53. Ham net
54. Hand saw
55. Hard hat
56. Loin eye area grid
57. Meat grinder
58. Meat grinder auger
59. Meat grinder knife
60. Meat grinder plate
61. Meat grinder stuffing rod
62. Meat hook
63. Meat tenderizer
64. Meat trolley
65. Metal knife scabbard
66. Rubber apron
67. Sharpening steel
68. Smoke house
69. Thermometer
70. Tumbler
71. Vacuum sausage stuffer
72. Whale saw

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

A. A non-rusting, electric fence insulator that fits snugly around the web and flange of T-posts.

B. A device placed on rams that shows when a ewe has been serviced.

C. Used to chop meat for sausages.

D. Used to store frozen semen until it is ready to be used. Holds liquid nitrogen to keep the semen frozen.

E. An instrument used for the bloodless castration (young male calves, lambs, and goats) and docking of tails (young lambs and goats).

F. Used to card (comb or rake) the wool on sheep prior to shearing.

G. An instrument used to control vaginal prolapse in ewes.

H. Device used to deposit boar semen into reproductive tract of a gilt or sow.

I. Used for temporary identification of livestock.

J. An automatic waterer used to provide clean, fresh water to pigs.

K. Used to keep water tanks from freezing.

L. An instrument used for the bloodless castration of young male calves, lambs, and goats by severing (crushing) the testicular cord.

M. Used to clip off the 4 pairs of very sharp teeth found in baby pigs.

N. Used to help pull unborn calves from cows that are experiencing calving problems (dystocia).

O. A device used to effectively feed newborn lambs the ewe's colostrum.

P. Used to administer precise amounts of liquid medications to cattle, goats, sheep and horses.

KEY

Senior Livestock and Meat Equipment Identification – 2019

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	Equipment Name	Equipment Use
1.	2	H
2.	41	A
3.	31	N
4.	37	D
5.	26	O
6.	42	K
7.	1	I
8.	34	B
9.	11	P
10.	44	F

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MERCK ANIMAL HEALTH
Intervet Inc.
2 GIRALDA FARMS, MADISON, NJ, 07940

Customer Service:	800-521-5767
Order Desk:	800-648-2118
Technical Service (Companion Animal):	800-224-5318
Technical Service (Livestock):	800-211-3573
Fax:	973-937-5557
Website:	www.merck-animal-health-usa.com

BO-SE®

℞

Intervet/Merck Animal Health

PRODUCT INFORMATION

(SELENIUM, VITAMIN E)

Injection

FOR VETERINARY USE ONLY

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

DESCRIPTION BO-SE (selenium, vitamin E) is an emulsion of selenium-tocopherol for the prevention and treatment of white muscle disease (Selenium-Tocopherol Deficiency) syndrome in calves, lambs, and ewes, and as an aid in the prevention and treatment of Selenium-Tocopherol Deficiency in sows and weanling pigs.

PHARMACOLOGY It has been demonstrated that selenium and tocopherol exert physiological effects and that these effects are intertwined with sulfur metabolism. Additionally, tocopherol appears to have a significant role in the oxidation process, thus suggesting an interrelationship between selenium and tocopherol in overcoming sulfur-induced depletion and restoring normal metabolism. Although oral ingestion of adequate amounts of selenium and tocopherol would seemingly restore normal metabolism, it is apparent that the presence of sulfur and, perhaps, other factors interfere during the digestive process with proper utilization of selenium and tocopherol. When selenium and tocopherol are injected, they bypass the digestive process and exert their full metabolic effects promptly on cell metabolism.

INDICATIONS BO-SE (selenium, vitamin E) is recommended for the prevention and treatment of white muscle disease (Selenium-Tocopherol Deficiency) syndrome in calves, lambs, and ewes. Clinical signs are: stiffness and lameness, diarrhea and unthriftiness, pulmonary distress and/or cardiac arrest. In sows and weanling pigs, as an aid in the prevention and treatment of diseases associated with Selenium-Tocopherol deficiency, such as hepatic necrosis, mulberry heart disease, and white muscle disease. Where known deficiencies of selenium and/or vitamin E exist, it is advisable, from the prevention and control standpoint, to inject the sow during the last week of pregnancy.

CONTRAINDICATIONS DO NOT USE IN PREGNANT EWES. Deaths and abortions have been reported in pregnant ewes injected with this product.

WARNINGS Anaphylactoid reactions, some of which have been fatal, have been reported in animals administered BO-SE Injection. Signs include excitement, sweating, trembling, ataxia, respiratory distress, and cardiac dysfunction.
Discontinue use 30 days before the treated calves are slaughtered for human consumption. Discontinue use 14 days before the treated lambs, ewes, sows, and pigs are slaughtered for human consumption. Selenium-Vitamin E preparations can be toxic when improperly administered.

PRECAUTIONS Selenium-Tocopherol Deficiency (STD) syndrome produces a variety and complexity of symptoms often interfering with a proper diagnosis. Even in selenium deficient areas there are other disease conditions which produce similar clinical signs. It is imperative that all these conditions be carefully considered prior to treatment of STD syndrome. Serum selenium levels, elevated SGOT, and creatine levels may serve as aids in arriving at a diagnosis of STD, when associated with other indices. Selenium is toxic if administered in excess. A fixed dose schedule is therefore important (read package insert for each selenium-tocopherol product carefully before using).

ADVERSE REACTIONS Reactions, including acute respiratory distress, frothing from the nose and mouth, bloating, severe depression, abortions, and deaths have occurred in pregnant ewes. No known treatment exists because at this time the cause of the reaction is unknown.

DOSAGE AND ADMINISTRATION Inject subcutaneously or intramuscularly. Calves: 2.5-3.75 mL per 100 pounds of body weight depending on the severity of the condition and the geographical area. Lambs 2 weeks of age and older: 1 mL per 40 pounds of body weight (minimum, 1 mL). Ewes: 2.5 mL per 100 pounds of body weight. Sows: 1 mL per 40 pounds of body weight. Weanling pigs: 1 mL per 40 pounds of body weight (minimum, 1 mL). Not for use in newborn pigs.

STORAGE Store between 2° and 30°C (36° and 86°F). Protect from freezing.
HOW SUPPLIED 100 mL sterile, multiple dose vial, NDC 0061-0807-05.
NADA #12-635, Approved by FDA.
October 1998

Made in Germany.
141329 R1
CPN: 1047025.3

Name_____Contestant#_____County_____

Senior Individual Quality Assurance – 2019

You have a small show pig swine operation. Your herd consists of 10 sows. As you sell most of your pigs to local 4-H/FFA members and the non-show pigs to an individual who wants to feed out a few each year, it is important to raise and wean off healthy pigs. In a previous farrowing period you had trouble with weak pigs and after a vet visit it was decided to plan a course of action including BO-SE. The problem seemed to be corrected after the next farrowing period, so you have continued with the same program. Use the **partial BO-SE 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. **Abortions and Deaths have occurred when used to inject?**

   A.) Weaned lambs
   C.) Bred Sows
   B.) Weaned pigs
   D.) Pregnant ewes

2. **How is BO-SE administered to cattle, sheep or swine?**

   A.) On the skin (topically)
   C.) In the nose (intranasal)
   B.) Intramuscular
   D.) In the feed

3. **When and adverse reaction occurs from using BO-SE what should you do?**

   A.) Give another shot of BO-SE
   C.) No known treatment
   B.) Give 3 CC of Penicillin
   D.) Drench with water

4. **If you have a group of pigs averaging 60 pounds apiece, what dosage would you use?**

   A.) 1 ½ mL
   C.) 2 mL
   B.) ¼ mL
   D.) 6 mL

5. **What is the best way to fully understand how to properly use BO-SE?**

   A.) Follow your veterinarians instructions and/or the label insert for **BO-SE**

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

   C.) Only take the advice of your neighbor down the road

   D.) All are correct

6. **New born pigs are given a shot of _____?**

   A.) BO-SE B.) Water C.) Iron D.) PG 600 (used to bring sows in heat)

7. **What is the closest to the correct dosage for a 420 pound Sow?**

   A.) 2 mL B.) 7.5 mL C.) 10 mL D.) 13.75 mL

8. **When injecting BO-SE we should not give it in the _____?**

   A.) Loin B.) Neck C.) Under skin on Neck D.) Both B and C

9. **If you give a show lamb an injection of BO-SE on July 1, when would it be safe to harvest for food?**

   A.) July 2 C.) July 16

   B.) August 1 D.) August 6

10. **BO-SE should not be stored at _____?**

    A.) 2 degrees C and 30 degrees C C.) 36 degrees F and 86 degrees F

    B.) 100 degrees F D.) Both A and C

KEY

Senior Individual Quality Assurance – 2019

You have a small show pig swine operation. Your herd consists of 10 sows. As you sell most of your pigs to local 4-H/FFA members and the non-show pigs to an individual who wants to feed out a few each year, it is important to raise and wean off healthy pigs. In a previous farrowing period you had trouble with weak pigs and after a vet visit it was decided to plan a course of action including BO-SE. The problem seemed to be corrected after the next farrowing period, so you have continued with the same program. Use the **partial BO-SE label** and your knowledge of quality assurance management to answer the **10 questions** below relating to quality assurance.
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10. **BO-SE should not be stored at _____?**

A.) 2 degrees C and 30 degrees C C.) 36 degrees F and 86 degrees F

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Senior Quiz KEY– 2019

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.) What is the proportion (percentage) of an animal's carcass weight relative to its live weight?

a. Shrink
b. Dressing loss
c. Break even cost
d. Dressing percentage

2.) How many total goat and lamb wethers are born in the United States each year?

a. 0
b. 10,000
c. 100,000
d. 1,000,000

3.) The average weight that was gained by an animal for each day of its life?

a. Average daily gain (ADG)
b. Weight gain
c. Weight per day of age (WDA)
d. Feed per pound of gain (F/G)

4.) We look at what factors when figuring Yield Grades on Cattle?

a. Kidney, Pelvic and Heart fat
b. Ribeye Area
c. Preliminary YG
d. All of these

5.) Which of these is the least desirable, lowest quality roughage?

a. Alfalfa
b. Timothy
c. Clover
d. Fescue

6.) What does EPDs stand for in the livestock industry?

a. Every Perfect Day
b. Expected Progeny Differences
c. Exceptional Pig Duroc
d. Ewes, Pigs and Dogs

7.) A paragraph describing what to look for when judging a class of livestock is called a(n)?

a. Scenario
b. Rhinitis
c. Problem paragraph
d. Extra reading

8.) What is the most important thing to provide livestock?

a. Show Feed
b. Vitamins
c. Water
d. Salt

9.) CAB is an example of a(n)?

a. Organic
c. Cheap products
b. Boxes of meat
d. Branded Product or niche market

10.) What is the most acceptable weight on market cattle?

a. 75 – 125
c. 750 – 925
b. 1250 – 2250
d. 1150 - 1375

11.) When would it be recommended to give Farrow Sure B to sows after farrowing?

a. First 48 hours
c. 3-4 weeks
b. 48 days after she is rebred
d. 4 days

12.) What is <u>most important</u> when selecting breeding animals to be used as replacements?

a. Color and breed
c. Bone and foot size
b. Structural and reproductive soundness
d. Muscle

13.) Which breed of swine would you select for mothering ability?

a. Pietran
c. Duroc
b. Hampshire
d. Landrace

14.) What Yield Grade would you expect a beef animal with extra fat cover and light muscled to receive?

a. 1 or 2
c. High Choice
b. Select
d. 4 or 5

15.) What is the most popular production sheep in the state of Kentucky?

a. Katahdin
c. Merino
b. Texel
d. Finn

16.) What is the common dressing percent for sheep?

a. 50
c. 70
b. 60
d. 80

17.) At a show you might use which of the following?

a. Brush
c. Soap
b. Blower
d. All of the above

18.) On average how many pounds of grain does it take to get one pound of gain on a market swine?

a. ½ - 1
b. 2.5 - 3
c. 6 - 7
d. 10

19.) Corn Distillers Dried Grain W/ Solubles is considered a(n)?

a. Vitamin
b. Protein
c. Mineral
d. Oil

20.) What mineral should not be included in sheep diets?

a. Phosphorous
b. Copper
c. Water
d. Salt

21.) Which of these is a ruminant?

a. Cow
b. Ram
c. Buck
d. All of these

22.) What is the gestation length in swine?

a. 114 days
b. 150 days
c. 244 days
d. 283 days

23.) The female reproductive organ where the embryo develops is called the _____?

a. Ovary
b. Oviduct
c. Cervix
d. Uterus

24.) Where is the hormone testosterone produced?

a. Testicle
b. Ovary
c. Brain
d. Pancreas

25.) The Kentucky Department of Ag is located in?

a. Bowling Green
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Name_____ Contestant #_____County_____

Senior Quiz – 2019

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Senior Retail Meat Judging Class 1 – 2019

Name_____ Contestant #_____ County_____

Placing is worth a possible 50 points

Contestant Number _____

Placing Score _____

University of Kentucky
College of Agriculture
Animal Sciences Department

Contestant's Name

_____

_____

Address

_____

_____

County

_____

Class: 1: Ribeyes

A	1 2 3 4	
B	1 2 4 3	
C	1 3 2 4	
D	1 3 4 2	
E	1 4 2 3	
F	1 4 3 2	
G	2 1 3 4	
H	2 1 4 3	
I	2 3 1 4	
J	2 3 4 1	
K	2 4 1 3	
L	2 4 3 1	
M	3 1 2 4	
N	3 1 4 2	
O	3 2 1 4	
P	3 2 4 1	
Q	3 4 1 2	
R	3 4 2 1	
S	4 1 2 3	
T	4 1 3 2	
U	4 2 1 3	
V	4 2 3 1	
W	4 3 1 2	
X	4 3 2 1	

Senior Retail Meat Judging Class 1 – 2019

KEY

2-3-4-1

Cuts: 3-2-3

Placing is worth a possible 50 points

Contestant Number _____

Placing Score _____

University of Kentucky
College of Agriculture
Animal Sciences Department

Contestant's Name

_____

_____

Address

_____

_____

County

_____

Class 1: Ribeyes

A	1 2 3 4	**34**
B	1 2 4 3	**32**
C	1 3 2 4	**31**
D	1 3 4 2	**26**
E	1 4 2 3	**27**
F	1 4 3 2	**24**
G	2 1 3 4	**42**
H	2 1 4 3	**40**
I	2 3 1 4	**47**
J	2 3 4 1	**50**
K	2 4 1 3	**43**
L	2 4 3 1	**48**
M	3 1 2 4	**36**
N	3 1 4 2	**31**
O	3 2 1 4	**44**
P	3 2 4 1	**47**
Q	3 4 1 2	**34**
R	3 4 2 1	**42**
S	4 1 2 3	**30**
T	4 1 3 2	**27**
U	4 2 1 3	**38**
V	4 2 3 1	**43**
W	4 3 1 2	**32**
X	4 3 2 1	**40**

Senior Retail Meat Judging Class 2 – 2019

Name_____ Contestant #_____ County_____

(Placing 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 2: Pork Chops

A	1 2 3 4	
B	1 2 4 3	
C	1 3 2 4	
D	1 3 4 2	
E	1 4 2 3	
F	1 4 3 2	
G	2 1 3 4	
H	2 1 4 3	
I	2 3 1 4	
J	2 3 4 1	
K	2 4 1 3	
L	2 4 3 1	
M	3 1 2 4	
N	3 1 4 2	
O	3 2 1 4	
P	3 2 4 1	
Q	3 4 1 2	
R	3 4 2 1	
S	4 1 2 3	
T	4 1 3 2	
U	4 2 1 3	
V	4 2 3 1	
W	4 3 1 2	
X	4 3 2 1	

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

QUESTIONS

1) **Which chop has the most exposed lean? _____**

2) **Which chop has the least amount of marbling and most pale color? _____**

3) **Which chop has the most bone to lean ratio? _____**

4) **Between 1 and 3, which chop has the larger tenderloin? _____**

5) **Which chop has the least amount of tail? _____**

Senior Retail Meat Judging Class 2 – 2019

KEY

4-3-2-1

Cuts: 5-2-2

(Placing 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 2: Pork Chops

A	1 2 3 4	**21**
B	1 2 4 3	**26**
C	1 3 2 4	**23**
D	1 3 4 2	**30**
E	1 4 2 3	**33**
F	1 4 3 2	**35**
G	2 1 3 4	**23**
H	2 1 4 3	**28**
I	2 3 1 4	**27**
J	2 3 4 1	**36**
K	2 4 1 3	**37**
L	2 4 3 1	**41**
M	3 1 2 4	**27**
N	3 1 4 2	**34**
O	3 2 1 4	**29**
P	3 2 4 1	**38**
Q	3 4 1 2	**43**
R	3 4 2 1	**45**
S	4 1 2 3	**42**
T	4 1 3 2	**44**
U	4 2 1 3	**44**
V	4 2 3 1	**48**
W	4 3 1 2	**48**
X	4 3 2 1	**50**

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

QUESTIONS

1) **Which chop has the most exposed lean? ____4____**

2) **Which chop has the least amount of marbling and most pale color? ___1____**

3) **Which chop has the most bone to lean ratio? ____2____**

4) **Between 1 and 3, which chop has the larger tenderloin? ____3____**

5) **Which chop has the least amount of tail? ____4____**

Senior Hay Judging Class – 2019

Name_____ Contestant #_____ County_____

(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	
B	1 2 4 3	
C	1 3 2 4	
D	1 3 4 2	
E	1 4 2 3	
F	1 4 3 2	
G	2 1 3 4	
H	2 1 4 3	
I	2 3 1 4	
J	2 3 4 1	
K	2 4 1 3	
L	2 4 3 1	
M	3 1 2 4	
N	3 1 4 2	
O	3 2 1 4	
P	3 2 4 1	
Q	3 4 1 2	
R	3 4 2 1	
S	4 1 2 3	
T	4 1 3 2	
U	4 2 1 3	
V	4 2 3 1	
W	4 3 1 2	
X	4 3 2 1	

[Turn over for Scenario and Forage Analysis Information]

Scenario:
You have a dozen Doe kids that you will be keeping to make replacements. Even though you supplement with a pound of grain per head per day, your hay will be the main source of protein and nutrients since you dry lot your goat herd 80 percent of the year. Since you are focused on selling show projects you feel it is very important to provide a quality feed source to your project.

Forage Analysis

	Hay Lot #1 2016 Late Cut Grass Mixture	Hay Lot #2 2018 2nd Cutting Orchardgrass	Hay Lot #3 2016 Late Cut Grass Mixture	Hay Lot # 4 2018 2nd Cutting Orchardgrass
Dry matter	88.9%	88.6%	88.9%	88.6%
Crude protein	7.4%	12.7%	8.5%	12.6%
Acid detergent fiber (ADF)	49.9%	44.6%	49.7%	44.8%
Neutral detergent fiber (NDF)	69.2%	67.5%	69.4%	67.3%
Total digestible nutrients (TDN)	50.0%	65.5%	52.0%	64.6%
Price per ton	$80	$105	$85	$110

Senior Hay Judging Class – 2019

Official: 2-4-3-1 Cuts: 3-6-2

(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	**23**
B	1 2 4 3	**29**
C	1 3 2 4	**14**
D	1 3 4 2	**11**
E	1 4 2 3	**26**
F	1 4 3 2	**17**
G	2 1 3 4	**34**
H	2 1 4 3	**40**
I	2 3 1 4	**36**
J	2 3 4 1	**44**
K	2 4 1 3	**48**
L	2 4 3 1	**50**
M	3 1 2 4	**16**
N	3 1 4 2	**13**
O	3 2 1 4	**27**
P	3 2 4 1	**35**
Q	3 4 1 2	**21**
R	3 4 2 1	**32**
S	4 1 2 3	**34**
T	4 1 3 2	**25**
U	4 2 1 3	**45**
V	4 2 3 1	**47**
W	4 3 1 2	**27**
X	4 3 2 1	**38**

[Turn over for Scenario and Forage Analysis Information]

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)), parainfluenza$_3$ virus (PI$_3$) 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), PI$_3$ 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

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:

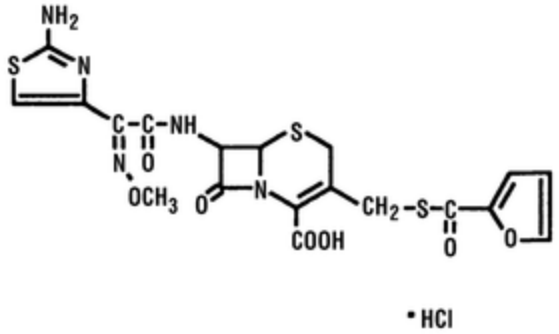


Figure 1.

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-[6α,7β(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.

Draxxin®
(tulathromycin)
Injectable Solution

Antibiotic
100 mg of tulathromycin/mL

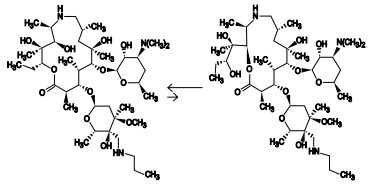
For subcutaneous injection in beef and non-lactating dairy cattle and intramuscular injection in swine only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

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 triamilide. Each mL of DRAXXIN contains 100 mg of tulathromycin as the free base in a 50% propylene glycol vehicle, monothioglycerol (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-azacyclopentadecan-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-azacyclotridecan-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 levii*.

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.[1] 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.[2] 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 Carbon C. Pharmacodynamics of macrolides, azalides, and streptogramins: effect on extracellular pathogens. *Clin Infect Dis* 1998;**27**:28-32.

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.[3] 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 hour). 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 levii* 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 levii* 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_{50}** (µg/mL)	MIC_{90}** (µg/mL)	MIC range (µg/mL)
Mannheimia haemolytica	1999	642	2	2	0.5 to 64
Pasteurella multocida	1999	221	0.5	1	0.25 to 64
Histophilus somni	1999	36	4	4	1 to 4
Mycoplasma bovis	1999	43	0.125	1	≤ 0.063 to > 64
Moraxella bovis	2004	55	0.5	0.5	0.25 to 1
Fusobacterium necrophorum	2007	116	2	64	≤ 0.25 to >128
Porphyromonas levii	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_{50}** (µg/mL)	MIC_{90}** (µg/mL)	MIC range (µg/mL)
Actinobacillus pleuropneumoniae	2000-2002 2007-2008	135 88	16 16	32 16	16 to 32 4 to 32
Haemophilus parasuis	2000-2002	31	1	2	0.25 to > 64
Pasteurella multocida	2000-2002 2007-2008	55 40	1 1	2 2	0.5 to > 64 ≤0.03 to 2
Bordetella bronchiseptica	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 ($P \leq 0.05$) 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 pyrexic 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 associated with *Moraxella bovis* in 200 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 ($P \leq 0.05$) 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 natural 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**

TAKE TIME OBSERVE LABEL DIRECTIONS

Made in France.

79-9949-00-3
December 2009
87 1207 2

County_____

Team Members _____

_____

Senior Team Quality Assurance Exercise – 2019

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 18, 2019, 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? _____

2) When giving Tylan 200, what's the largest amount that should be administered in one site? ____mL

3) Which of the medications should not be given to swine? _____

4) Which of the medications is approved for use in a 3-yr old lactating dairy cow? _____

5) Which of the medications has to be rehydrated before use? _____

[OVER]

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, 2019 9:00 a.m.	# 27	1200 lbs	Pneumonia	Tylan 200				
Dec. 2, 2018 10:00 a.m.	# 94	1210 lbs	IBRV	Bovi-Shield Gold 5				
Dec. 24, 2018 2:30 p.m.	# 75	1325 lbs	Bovine Respiratory Syncytial Virus	Bovi-Shield Gold 5				
Jan. 14, 2019 8:00 a.m.	# 16	1250 lbs	Foot Rot	Draxxin				
Feb. 16, 2019 7:00 a.m.	# 33	1150 lbs	Bovine Respiratory Disease	Excenel				

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

Example: Feb. 16, 2019 9 a.m.

Steers That Can be Sold Tomorrow

Steers to Hold Until a Later Date

CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
December 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	2

KEY

Senior Team Quality Assurance Exercise – 2019

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 18, 2019, 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's the largest amount that should be administered in one site? **10** mL

3) Which of the medications should not be given to swine? _____**BOVI-SHIELD GOLD 5**_____

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**_____

[OVER]

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, 2019 9:00 a.m.	# 27	1200 lbs	Pneumonia	Tylan 200	IM	48 mL	21 days	Feb. 20, 2019 9:00 a.m.
Dec. 2, 2018 10:00 a.m.	# 94	1210 lbs	IBRV	Bovi-Shield Gold 5	IM	2 mL	21 days	Dec. 23, 2018 10:00 a.m.
Dec. 24, 2018 2:30 p.m.	# 75	1325 lbs	Bovine Respiratory Syncytial Virus	Bovi-Shield Gold 5	IM	2 mL	21 days	Jan. 14, 2019 2:30 p.m.
Jan. 14, 2019 8:00 a.m.	# 16	1250 lbs	Foot Rot	Draxxin	SC	13.75 mL Will Accept 13.5 - 14 mL	18 days	Feb. 1, 2019 8:00 a.m.
Feb. 16, 2019 7:00 a.m.	# 33	1150 lbs	Bovine Respiratory Disease	Excenel	IM and SC	23 mL	3 days	Feb. 19, 2019 7:00 a.m.

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

Example: Feb. 16, 2019 9 a.m.

Steers That Can be Sold Tomorrow	Steers to Hold Until a Later Date
94	27
75	33
16	

CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
December 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	2

Elanco™ AH0206

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).

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

Elanco™ AH0206

Tylan® 200 Inyectable™

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 multicoda* y *Arcanobacterium pyogenes*, pietín (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.

POSOLOGÍA 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.

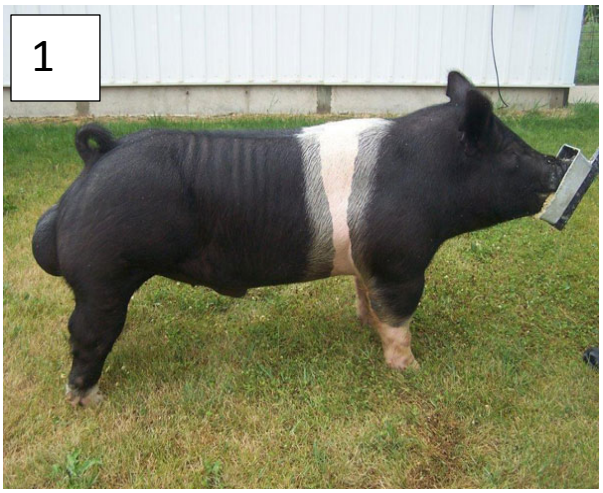
Si se suministra agua para beber con tilosina como tratamiento de seguimiento para la disentería porcina, el animal debe recibir posteriormente alimento que contenga entre 40 y 100 gramos de tilosina por tonelada durante 2 semanas para garantizar la depleción de los residuos de tejidos.

Almacenar a 25 °C (77 °F) o menos.

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

Boar Choices



County_____KEY_____

Team Members_____

Senior Team Breeding Exercise – 2019

You are a genetic advisor for a large scale pork operation in KY/TN. Your job is to select and purchase three boars to go into the company's boar stud. Semen from these three boars will be collected and distributed to breeding units connected to the company. One of the three boars must be a maternal sire and one must be a terminal sire. You have a budget of $8,000.00 to use to purchase these three boars.

From the terminal side growth and performance is important, while on the maternal side production must improve. These boars must have the structural integrity to survive in the confinement setting.

Please study the data and look over the pictures of the boars and decide who you will select to place in the company boar stud. Your employer also said, that your last choices of boars were over budget and did not produce enough semen to meet the needs of the farm units. Choose wisely, answer the questions below then discuss your choices with the Contest Official. Please include the positives of why you chose the three boars that you did, and the reasons for not choosing at least two of the other boars.

There are 10 questions worth 10 points each for a total of 100 possible points and your discussion with the Contest Official is worth 100 possible points for a grand total of 200 points.

Questions: (Circle Your Answers)

1.) Which Hampshire boar is expressive but round muscled, pinched in his ham/loin and needs more center body?

1 2 3 4 5 (6) 7 8

2.) Which boar would you choose as a maternal sire?

1 2 3 4 5 6 7 (8)

3.) Between the down eared boars, which boar is the smallest testicled?

1 2 3 4 5 6 (7) 8

4.) Between the black belted boars, which boar is wrinkle hided?

1 2 3 4 5 6 7 8

5.) Which boar visually appears to already be the most adapted to confinement?

1 **2** 3 4 5 6 7 8

6.) Which boar does not fit well into the $8,000 budget?

1 2 3 **4** 5 6 7 8

7.) Which boar appears to be the crossbred?

1 2 3 **4** 5 6 7 8

8.) Which two boars are potential littermates?

1 2 3 4 **5** 6 7 8

9.) Which boar am I describing, tall fronted, frail featured and the smallest footed?

1 2 **3** 4 5 6 7 8

10.) Between the three Duroc boars, which boar is rugged designed, and stout featured?

1 **2** 3 4 5 6 7 8

Boar Prices:

1. **$2,750**
2. **$1,750**
3. **$800**
4. **$6,500**
5. **$2,500**
6. **$1,000**
7. **$850**
8. **$3,500**

Data on Boars expressed in EPDs:

Boar#	NBA	WTE	DAYS	BF	LBS	SPI	MLI	TSI
1	+0.17	-0.15	-3.52	-0.02	+1.15	110	115	112
2	+0.28	-0.19	-3.6	-0.02	+1.41	109	114	115
3	-0.12	+0.12	-1.9	-0.2	+0.95	102	102	101
4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	+0.17	-0.15	-3.52	-0.02	+1.45	110	115	112
6	-0.35	+0.25	+1.5	-0.35	+0.56	92	92	98
7	-0.15	+0.12	-1.8	-0.01	+0.91	101	101	101
8	+0.35	-0.21	-3.65	-0.02	+1.3	111	116	109

County_____

Team Members_____

_____

Senior Team Breeding Exercise – 2019

You are a genetic advisor for a large scale pork operation in KY/TN. Your job is to select and purchase three boars to go into the company's boar stud. Semen from these three boars will be collected and distributed to breeding units connected to the company. One of the three boars must be a maternal sire and one must be a terminal sire. You have a budget of $8,000.00 to use to purchase these three boars.

From the terminal side growth and performance is important, while on the maternal side production must improve. These boars must have the structural integrity to survive in the confinement setting.

Please study the data and look over the pictures of the boars and decide who you will select to place in the company boar stud. Your employer also said, that your last choices of boars were over budget and did not produce enough semen to meet the needs of the farm units. Choose wisely, answer the questions below then discuss your choices with the Contest Official. Please include the positives of <u>why you chose the three boars</u> that you did, and the reasons <u>for not choosing at least two of the other boars</u>.

There are 10 questions worth 10 points each for a total of 100 possible points and your discussion with the Contest Official is worth 100 possible points for a grand total of 200 points.

Questions: (Circle Your Answers)

1.) Which Hampshire boar is expressive but round muscled, pinched in his ham/loin and needs more center body?

1 2 3 4 5 6 7 8

2.) Which boar would you choose as a maternal sire?

1 2 3 4 5 6 7 8

3.) Between the down eared boars, which boar is the small testicled?

1 2 3 4 5 6 7 8

4.) Between the black belted boars, which boar is wrinkle hided?

1 2 3 4 5 6 7 8

5.) Which boar visually appears to already be the most adapted to confinement?

1 2 3 4 5 6 7 8

6.) Which boar does not fit well into the $8,000 budget?

1 2 3 4 5 6 7 8

7.) Which boar appears to be the crossbred?

1 2 3 4 5 6 7 8

8.) Which two boars are potential littermates?

1 2 3 4 5 6 7 8

9.) Which boar am I describing, tall fronted, frail featured and the smallest footed?

1 2 3 4 5 6 7 8

10.) Between the three Duroc boars, which boar is rugged designed, and stout featured?

1 2 3 4 5 6 7 8

Boar Prices:

1. $2,750

2. $1,750

3. $800

4. $6,500

5. $2,500

6. $1,000

7. $850

8. $3,500

Data on Boars expressed in EPDs:

Boar#	NBA	WTE	DAYS	BF	LBS	SPI	MLI	TSI
1	+0.17	-0.15	-3.52	-0.02	+1.15	110	115	112
2	+0.28	-0.19	-3.6	-0.02	+1.41	109	114	115
3	-0.12	+0.12	-1.9	-0.2	+0.95	102	102	101
4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	+0.17	-0.15	-3.52	-0.02	+1.45	110	115	112
6	-0.35	+0.25	+1.5	-0.35	+0.56	92	92	98
7	-0.15	+0.12	-1.8	-0.01	+0.91	101	101	101
8	+0.35	-0.21	-3.65	-0.02	+1.3	111	116	109

Score

Team Name _____Team Number_____

Team Members _____

2019 Kentucky Skillathon Contest – Senior Team Feeding Activity
10 pts. / question and 100 points for your explanation for 200 point total.

You have purchased a group of 10 stocker cattle (average weight = 600 lb.) at $1.50/lb. Your plans are to keep them on grass for 150 days and then sell them to a feedlot. **1. Please answer the questions below. 2. Discuss with the listener what breed of cattle you purchased (your choice of breed), why you purchased that breed and the benefits that breed should have for the feedlot.**

1. What did this group of stockers cost for the entire bunch when purchased?

2. If this group gained 1.8 lbs./day/head while on grass, what would be their weight gain **per head**?

3. What would be the average weight of the cattle, when you sell them to the feedlot?

4. If you sell them to the feedlot for $1.20/lb., how much would they bring apiece?

5. How much would the entire group bring when sold to the feed yard?

6. What would be your Gross profit?

7. If each calf intakes 5 pounds of loose mineral per month, how many 50 pound bags of mineral will you need for the time you own the cattle?

8. At a cost of $22.00 per bag for mineral, what will your total mineral cost be?

9. If the cattle gain 3 pound per day for their next owner, how many days will it take them to get to 1260 pound from where they started when purchased by the feedlot?

10. What is the most common Quality Grade of Fat cattle sold in the United States? **Circle one answer.**

Prime Choice Select Standard

KEY

Senior Team Feeding

2019 Kentucky Skillathon Contest – Senior Team Feeding Activity
10 pts. / question and 100 points for your explanation for 200 point total.

You have purchased a group of 10 stocker cattle (average weight = 600 lb.) at $1.50/lb. Your plans are to keep them on grass for 150 days and then sell them to a feedlot. **1. Please answer the questions below. 2. Discuss with the listener what breed of cattle you purchased (your choice of breed), why you purchased that breed and the benefits that breed should have for the feedlot.**

1. What did this group of stockers cost for the entire bunch when purchased?
   10 head X 600 lb. X $1.50 = **$9,000.00**

2. If this group gained 1.8 lbs./day/head while on grass, what would be their weight gain **per head**?
   1.8 lbs. / day / head X 150 days = **270 pounds per calf**

3. What would be the average weight of the cattle, when you sell them to the feedlot?

   Beginning weight of 600 lbs. + 270 lbs. = **870 pounds**

4. If you sell them to the feedlot for $1.20/lb., how much would they bring apiece?

   870 pounds X $1.20 = **$1044.00 per head**

5. How much would the entire group bring when sold to the feed yard?

   10 head X $1044.00 = **$10440.00**

6. What would be your Gross profit?

   $10440.00 - $9,000.00 = **$1,440.00**

7. If each calf intakes 5 pounds of loose mineral per month, how many 50 pound bags of mineral will you need for the time you own the cattle?

   10 calves X 5 lbs. of mineral X 5 months = 250 lbs. of mineral / 50 lb. bag = **5 bags**

8. At a cost of $22.00 per bag for mineral, what will your total mineral cost be?
   5 bags X $22.00 per bag = **$110.00**

9. If the cattle gain 3 pound per day for their next owner, how many days will it take them to get to 1260 pound from where they started when purchased by the feedlot?
   1260 lbs. – 870 lbs. = 390 lbs. / 3 lb. per head per day = **130 days**

10. What is the most common Quality Grade of Fat cattle sold in the United States? **Circle one answer.**

    Prime Choice Select Standard