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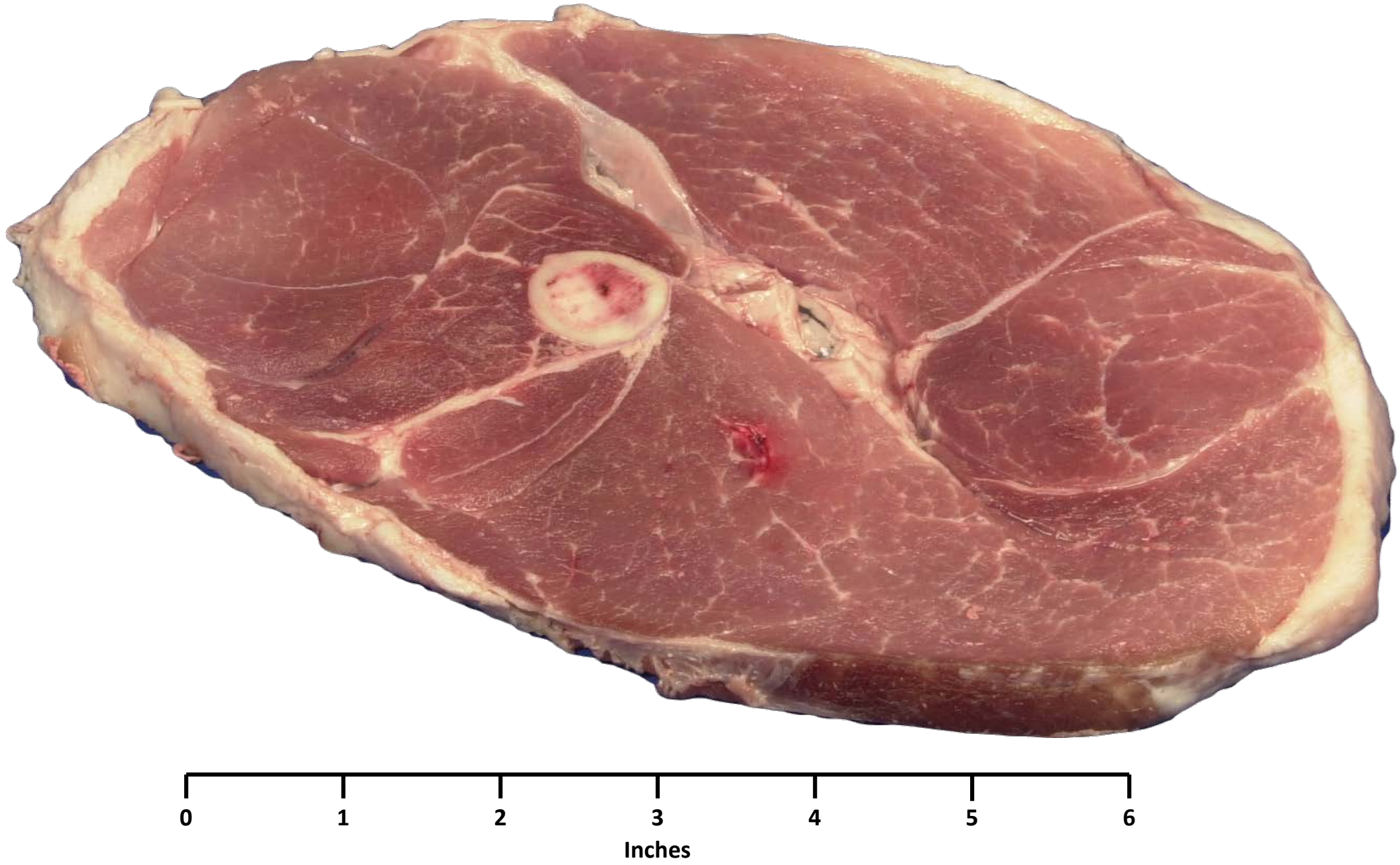


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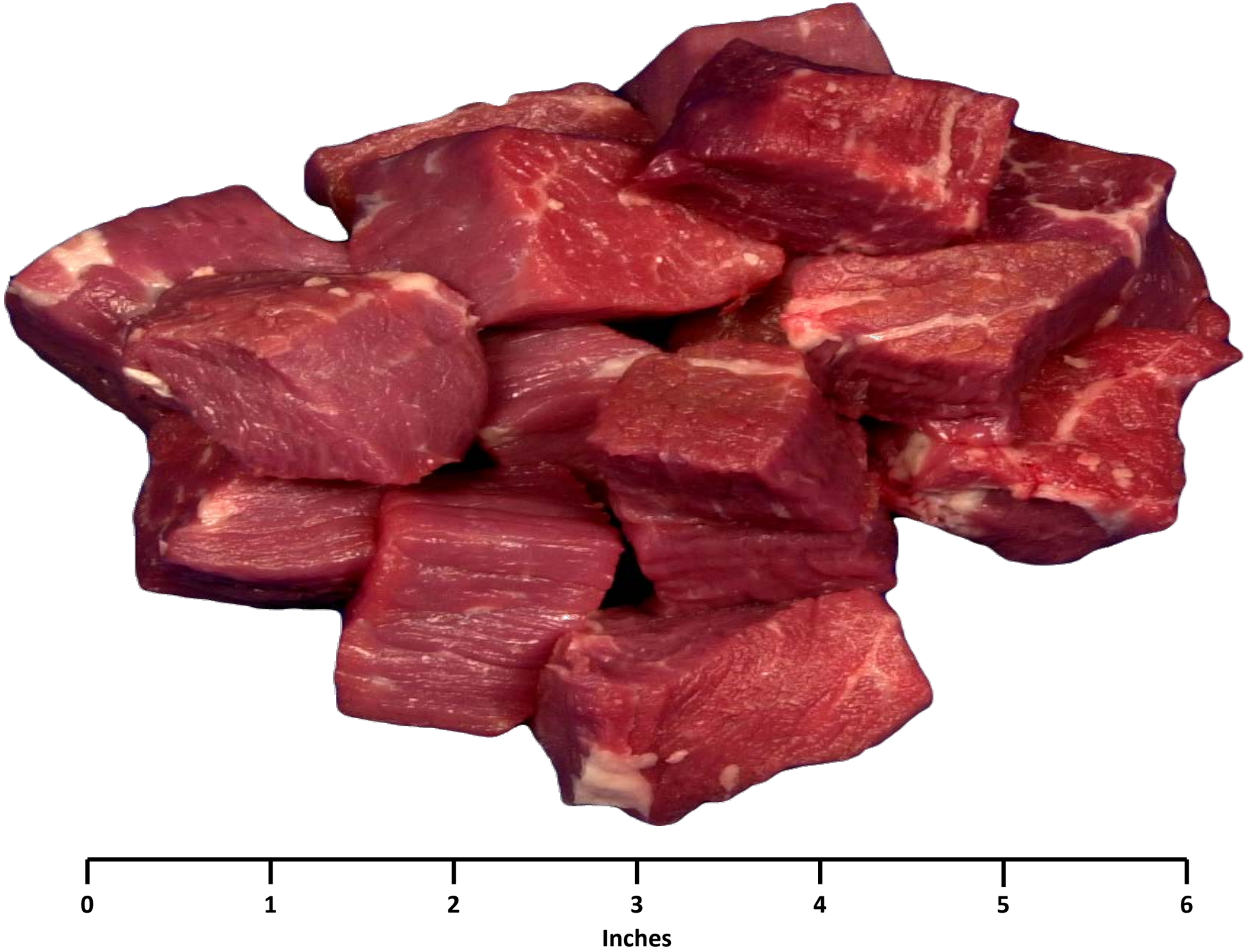

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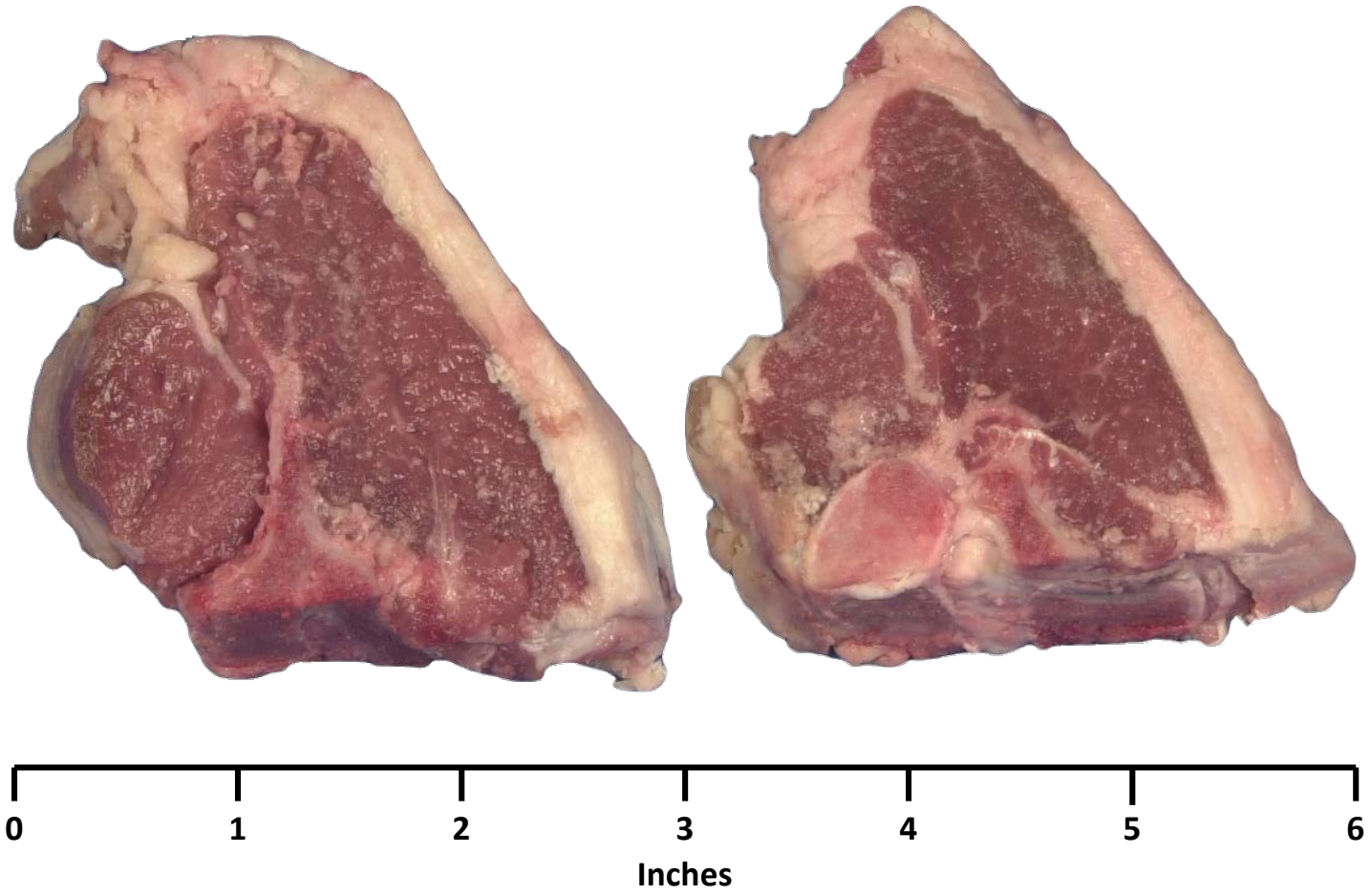

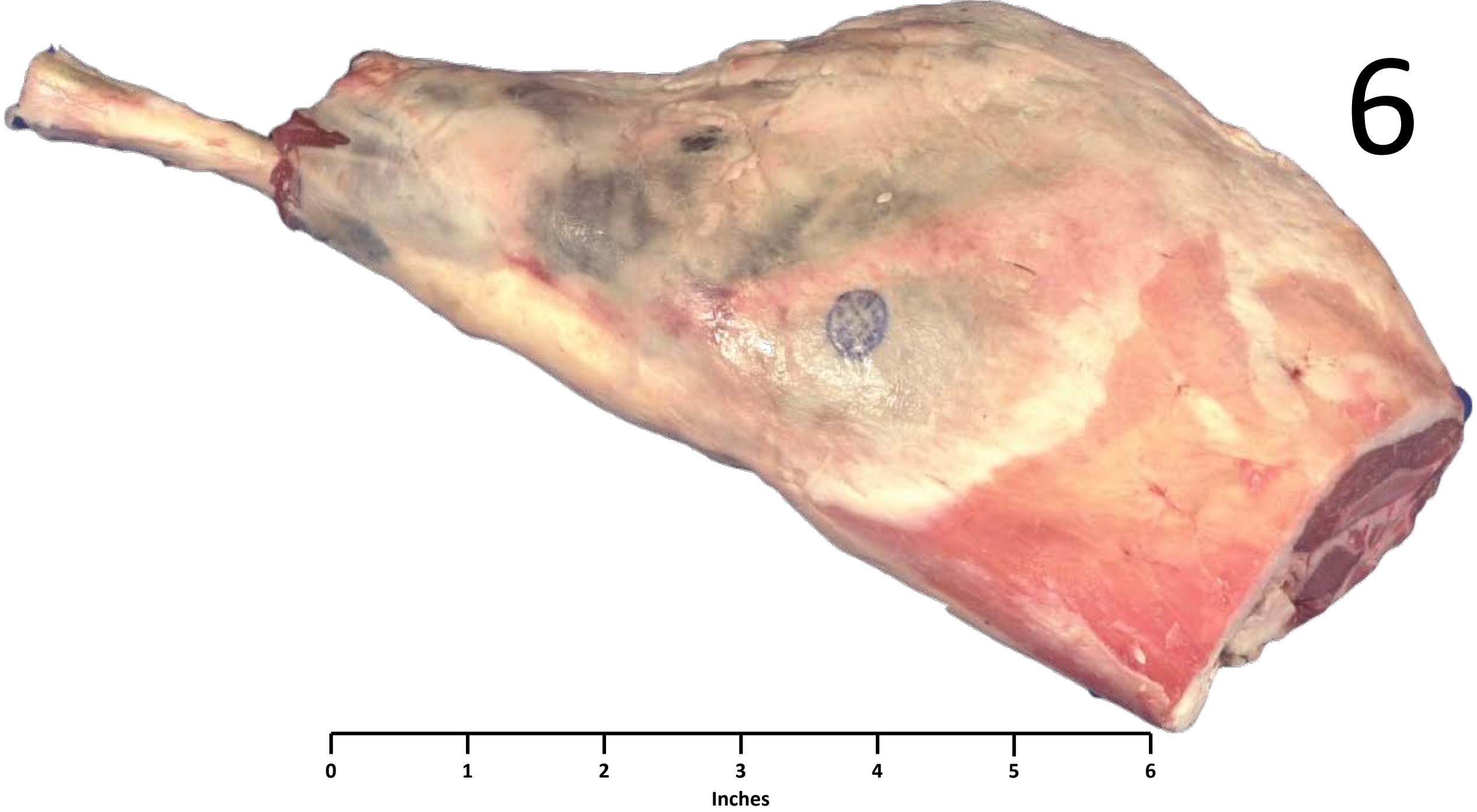
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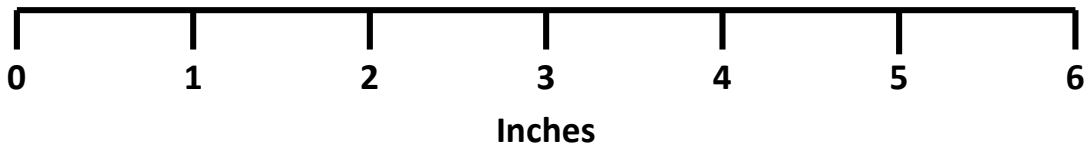

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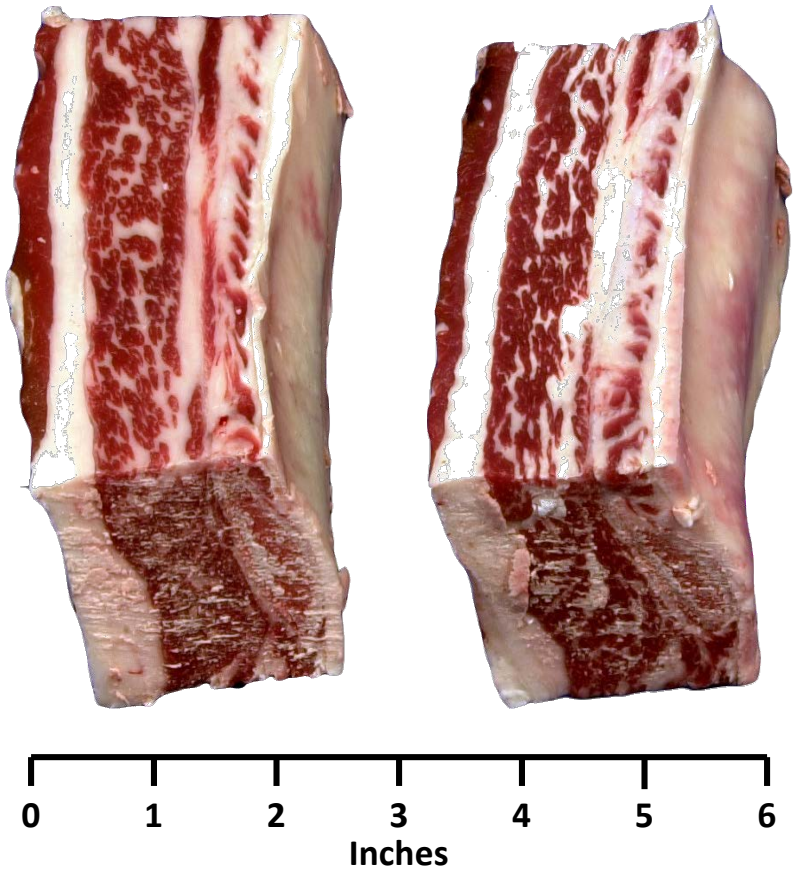


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Inches

Name_____ Contestant #_____County_____

Intermediate 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. **Intermediates** provide answers for retail cut name and species of cut. Each question is worth 5 points (100 points total for Intermediates).

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

Retail Names – to be used in answer column 1 Intermediates

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 Intermediates

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

B. Beef L. Lamb P. Pork

KEY

Intermediate 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. **Intermediates** provide answers for retail cut name and species of cut. Each question is worth 5 points (100 points total for Intermediates).

	Retail Cut Name	Species of Cut
1.	31	B
2.	66	P
3.	20	B
4.	1	B
5.	56	L
6.	52	L
7.	3	B
8.	70	P
9.	24	B
10.	73	P

Retail Names – to be used in answer column 1 Intermediates

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 Intermediates

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

B. Beef L. Lamb P. Pork

Name_____ Contestant # _____County_____

Intermediate 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. **Intermediates** provide answers for feedstuff name and nutrient group. Each question is worth 5 points (100 points total for Intermediates).

	Feedstuff Name	Nutrient Group
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Feed Names – to be used in answer column 1 by Intermediates

1. Alfalfa cubes
2. Alfalfa meal (dehydrated)
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. Corn gluten meal
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 Intermediates

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

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

KEY

Intermediate 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. **Intermediates** provide answers for feedstuff name and nutrient group. Each question is worth 5 points (100 points total for Intermediates).

	Feedstuff Name	Nutrient Group
1.	49	C
2.	13	B or C
3.	71	C
4.	25	C
5.	37	C
6.	12	C, F or P
7.	68	P
8.	20	B or C
9.	52	F or P
10.	55	C

Feed Names – to be used in answer column 1 by Intermediates

1. Alfalfa cubes
2. Alfalfa meal (dehydrated)
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. Corn gluten meal
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 Intermediates

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

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

1.

2

3


4

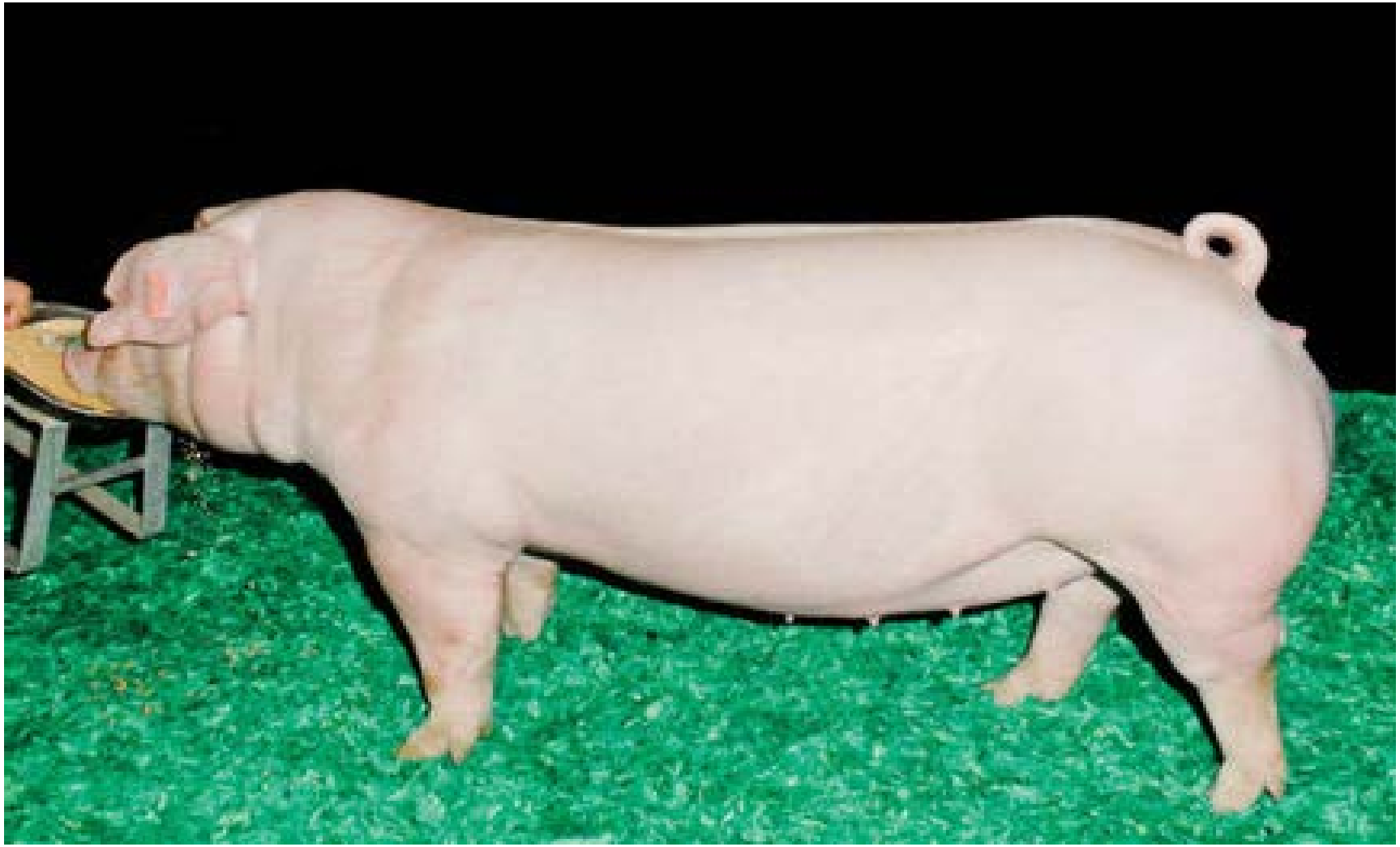

5

6

7

8.

9.



10.

Name_____Contestant #_____County_____

Intermediate 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. **Intermediates** provide answers for breed name and origin of breed. Each question is worth 5 points for the breed and 5 points for the origin of breed. (100 points total for Intermediates).

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

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

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. Horned 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

KEY

Intermediate 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. **Intermediates** provide answers for breed name and origin of breed. Each question is worth 5 points for the breed and 5 points for the origin of breed. (100 points total for Intermediates).

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

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

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

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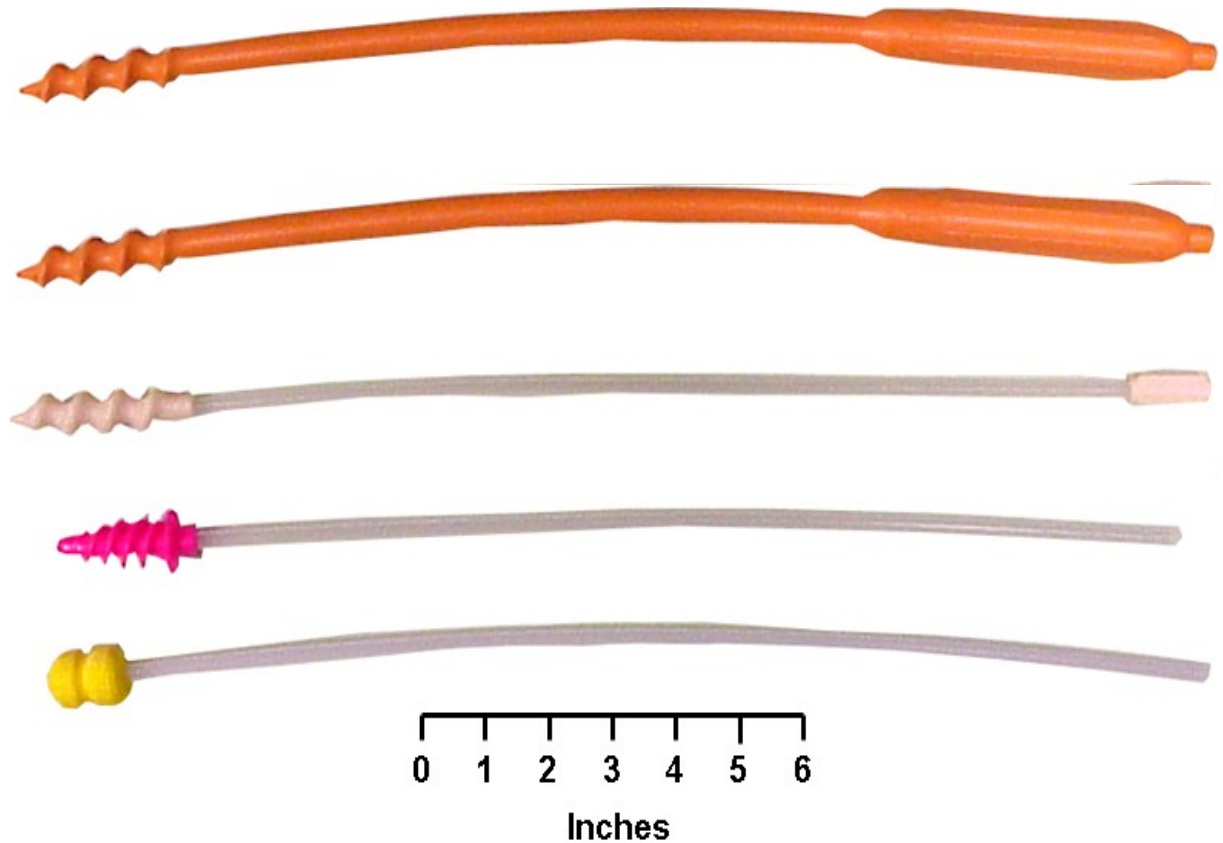

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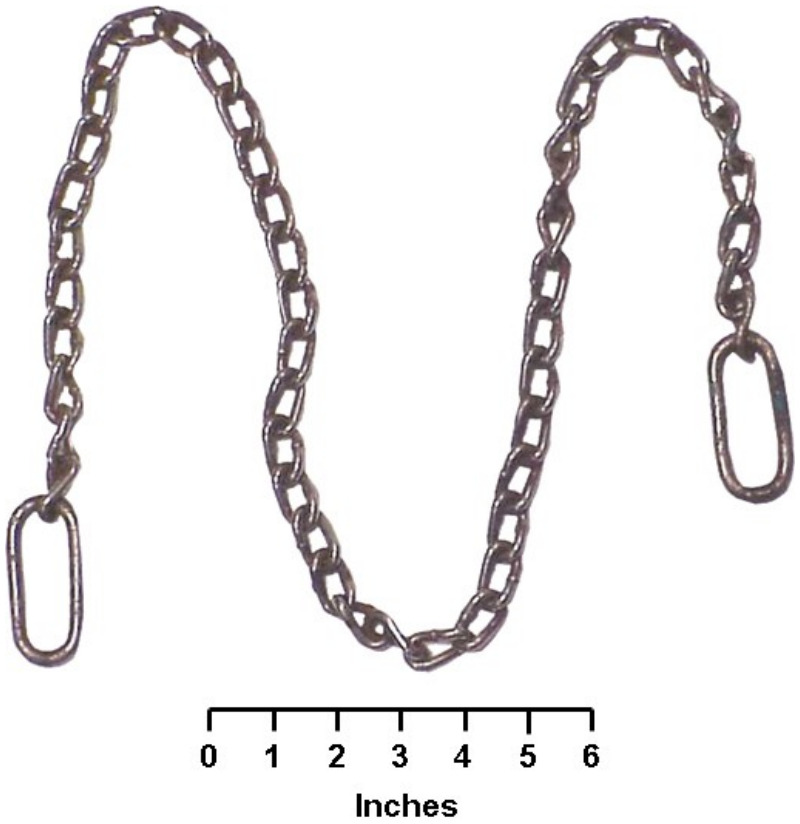

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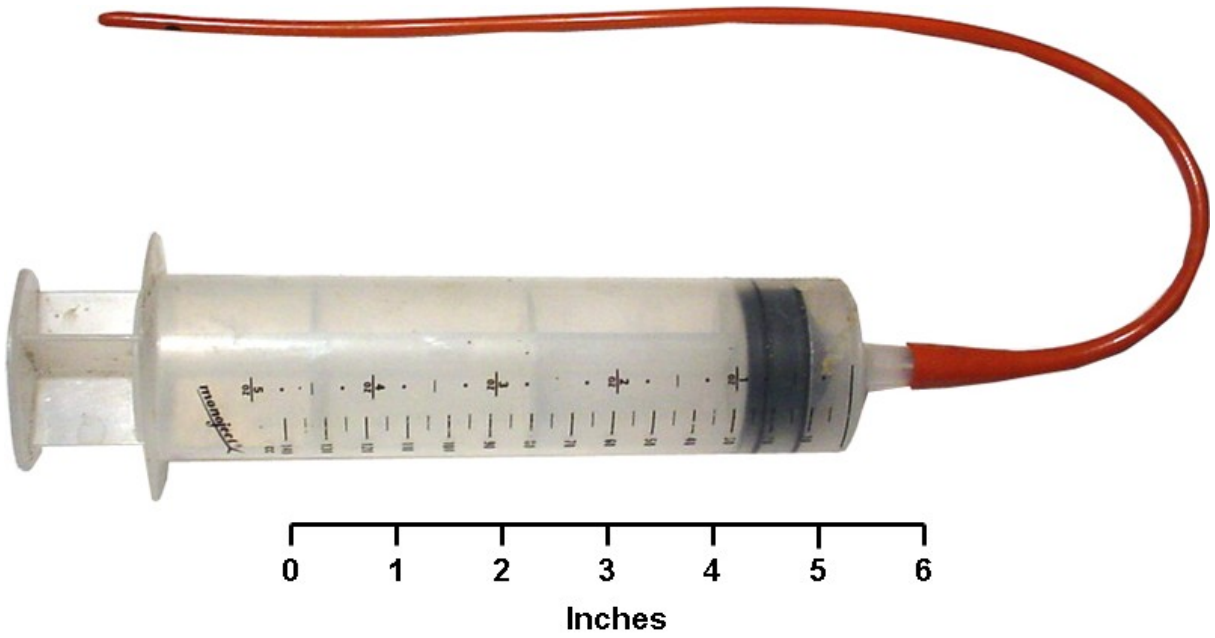

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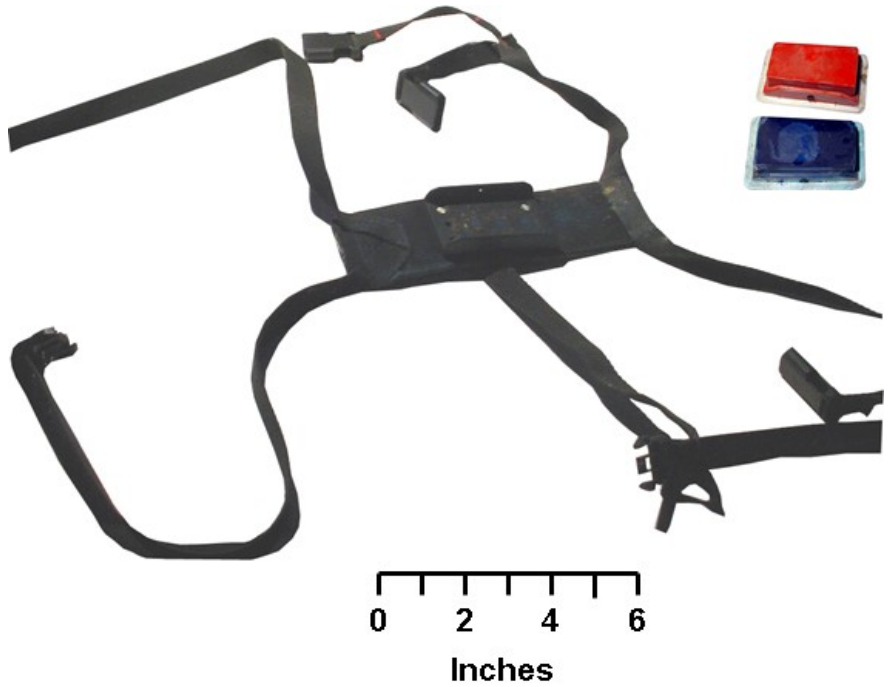
7


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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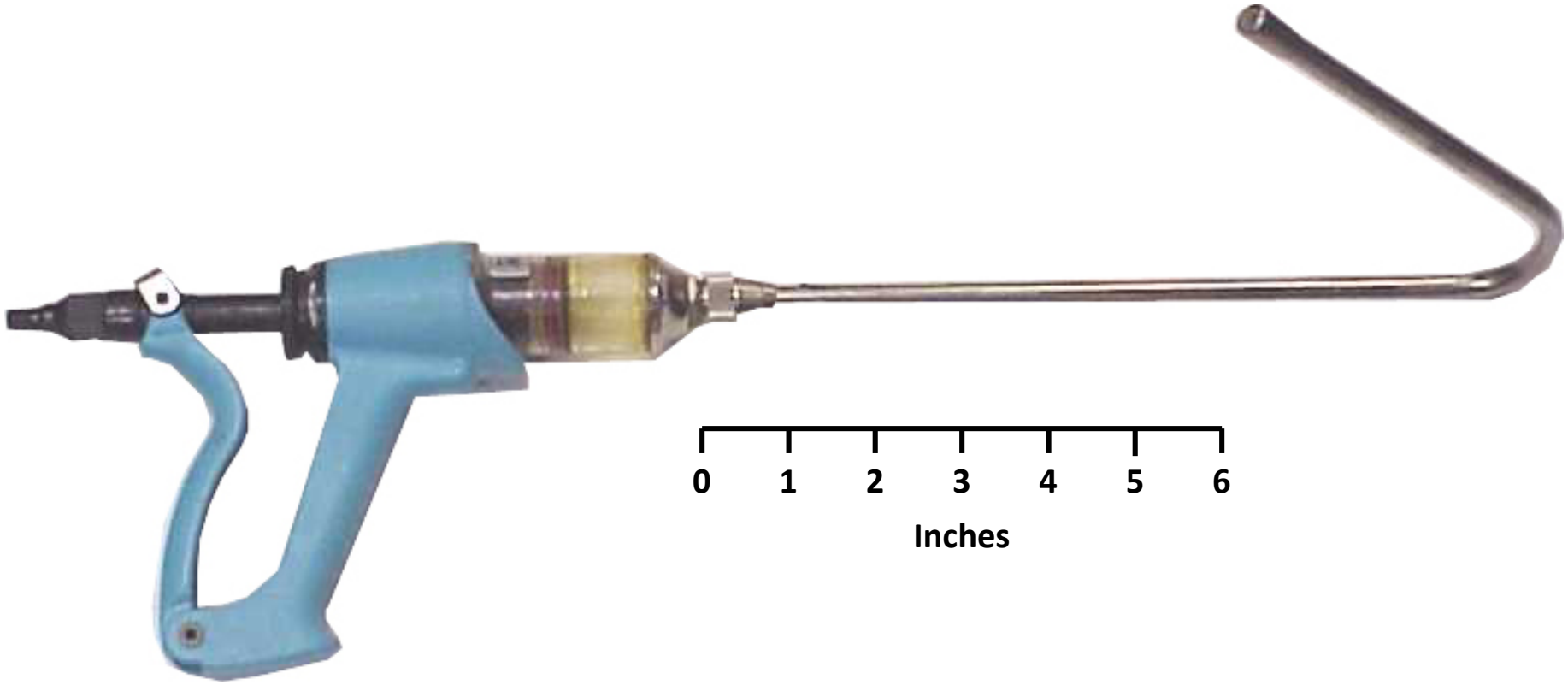

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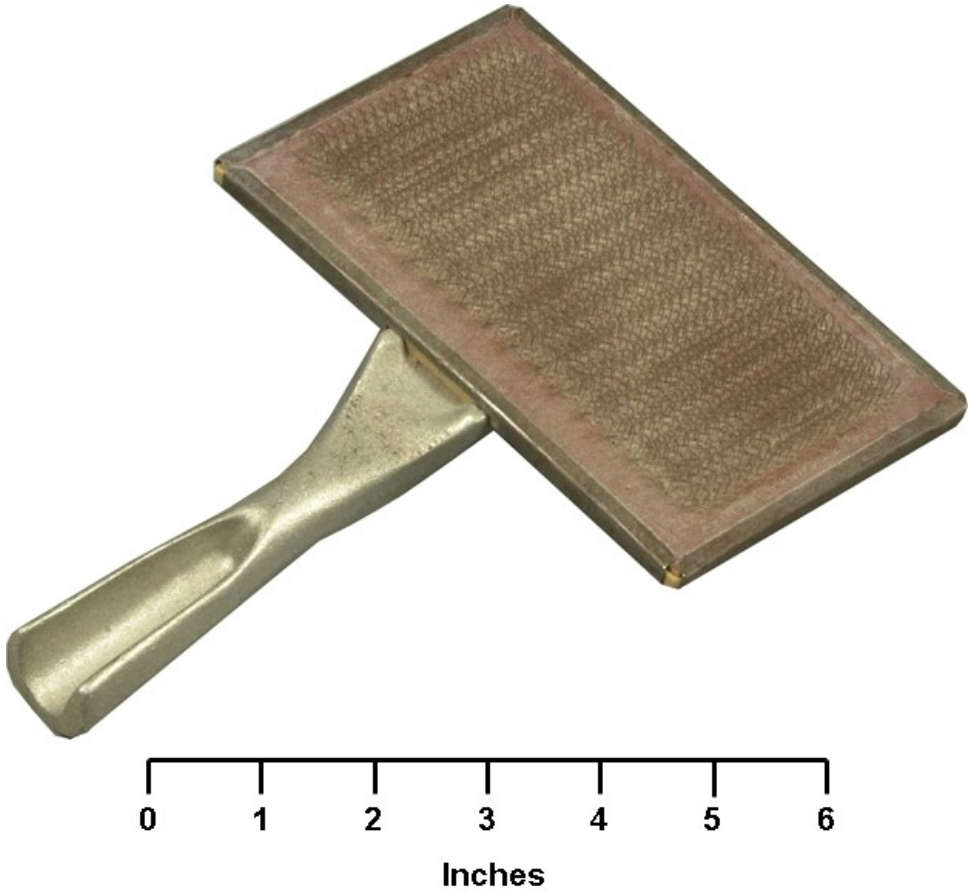

Name_____ Contestant #_____County_____

Intermediate 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. **Intermediates** provide answers for livestock/meat equipment names and equipment use. Each question is worth 5 points (100 points total for Intermediates).

	Equipment Name	Equipment Use
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

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

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 Intermediates

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

Intermediate 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. **Intermediates** provide answers for livestock/meat equipment names and equipment use. Each question is worth 5 points (100 points total for Intermediates).

	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

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

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 Intermediates

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.

BMD®

THE IDEAL FEED ADDITIVE

BMD® 50 (bacitracin methylene disalicylate) is a Type A Medicated Article that improves growth rate, feed efficiency and health of pigs. BMD contains feed-grade bacitracin methylene disalicylate equivalent to 50 grams (11%) bacitracin per pound of premix.

Collapse All

- Indications for Use
  - For increased rate of weight gain and improved feed efficiency in growing/finishing pigs
  - For control of swine dysentery (bloody scours) associated with *Brachyspira hyodysenteriae* in pigs up to 250 lb.
  - For control of clostridial enteritis caused by *Clostridium perfringens* in suckling piglets when fed to sows from 14 days before through 21 days after farrowing on premises with a history of clostridial scours

- Key Benefits
  - An established, versatile product with more than 30 years of safety and efficacy
  - Can be used to control clostridial enteritis, the leading cause of diarrhea in young pigs
  - By controlling *C. perfringens* in suckling piglets, BMD can decrease morbidity, mortality and improve weaning weights[1]
  - Bacitracin is not included in the FDA/CVM list of medically important antibiotics for human health[2], thus a Veterinary Feed Directive is not required unless BMD is used in combination with Aureomycin® or other presentations of chlortetracycline
  - No withdrawal is required prior to slaughter

[1]Flowers WL, Schultz RA, Pratte B. Effect of BMD in sow diets on clostridial numbers, sow weight loss and neonatal piglet performance. Proceedings Am. Assoc. Swine Vet. 2007:163-165.

[2]FDA Guidance for Industry #152. Evaluating the Safety of Antimicrobial New Animal Drugs with Regard to Their Microbiological Effects on Bacteria of Human Health Concern. Food and Drug Administration, Center for Veterinary Medicine, October 23, 2003.

- Product Use Directions

Swine Information: **Bacitracin Methylene Disalicylate — Type A Medicated Article (Antibacterial)**

Active Drug Ingredient	Each pound contains feed-grade bacitracin methylene disalicylate equivalent to 50 grams bacitracin (Master Standard).	
Composition	A dried, precipitated fermentation product obtained by culturing *Bacillus licheniformis* Tracy on media adapted for microbiological production of bacitracin; calcium carbonate.	
For Manufacturing Medicated Poultry and Livestock Feeds Only		
Mixing Directions	Prepare an intermediate premix containing 5 g per pound by mixing 1.0 lb. of BMD® 50 with 9.0 lb. of a feed ingredient(s) or a portion of the nonmedicated feed. Then add 0.8 to 50 lb. of intermediate premix per ton of finished feed.	
Species	**Grams bacitracin per ton of feed**	**Indications for use**
Growing/ finishing swine	10-30	For increased rate of weight gain and improved feed efficiency. For growing and finishing swine.
	250	For control of swine dysentery (bloody scours) associated with *Brachyspira hyodysenteriae* in pigs up to 250 lb. body weight. Feed 250 grams per ton of complete feed on premises with a history of swine dysentery, but where signs of the disease have not yet occurred or following an approved treatment of the disease condition. The 250 g/ton level will provide 5 to 7 mg/lb. in swine weighing 40 to 250 lb. **CAUTION:** Diagnosis should be confirmed by a veterinarian when results are not satisfactory. Feed containing an approved level of bacitracin methylene disalicylate should be the sole ration.
Pregnant sows	250	For control of clostridial enteritis caused by *C. perfringens* in suckling piglets when fed to sows from 14 days before through 21 days after farrowing on premises with a history of clostridial scours. **CAUTION:** Diagnosis should be confirmed by a veterinarian when results are not satisfactory. Feed containing an approved level of bacitracin methylene disalicylate should be the sole ration.

Note: Where minimum levels are shown, increase the antibiotic concentration within approved range when necessary to fit the feeding program, and to insure adequate levels of antibiotic in the complete ration.

Restricted Drug (California) — Use only as directed.
Not for Human Use.
For Use in Dry Feeds Only.
Not for Use in Liquid Medicated Feed.
Store Below 25°C (77°F), Excursions Permitted to 37°C (99°F).

NADA 46-592, Approved by FDA

Note:

Where minimum levels are shown, increase the antibiotic concentration within approved range when necessary to fit the feeding program, and to insure adequate levels of antibiotic in the complete ration.

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NADA 46-592, Approved by FDA

Name_____ Contestant #_____County_____

Intermediate Individual Quality Assurance – 2019

You are a gilt multiplier for sow units in Western Kentucky. Herd health is extremely important. From time to time you have been concerned about scours in pigs nursing sows. Even though a VFD is not required for BMD 50, unless used with products containing chlortetracycline, you still have discussed with your vet and decided to add this product to your sow ration. This is mainly for a precaution and your own peace of mind, but you also have figured in your budget and it should help your financial bottom line. Use the BMD 50 label to answer the 10 questions below. **Circle the best answer.** (10 questions worth 5 points per question for a total of 50 points).

1. **BMD should be mixed in the sow ration?**

   a.) Mid – gestation
   c.) 14 days before to 21 days after farrowing
   b.) One month after breeding
   d.) Only to sows that weigh up to 250 pounds

2. **Which of the following are true statements?**

   a.) Not for human use.
   c.) Not for use in liquid medicated feeds.
   b.) For use in dry feeds only.
   d.) All of these

3. **How many grams of BMD should be mixed into a ton of feed for a pregnant sow ration?**

   a.) 25 grams
   c.) 500 grams
   b.) 10-30 grams
   d.) 250 grams

4. **What is the withdrawal time?**

   a.) No withdrawal time.
   c.) 2 weeks
   b.) 3 days
   d.) 1 month

5. **In which state is this a restricted drug?**

   a.) Illinois
   c.) Kentucky
   b.) California
   d.) North Carolina

6. It is recommended to store this product at what temperature?

a.) 100 degrees C

c.) 77 degrees C

b.) Below 25 degrees C

d.) All of these

7. By adding BMD to rations?

a.) Weight gain can be increased

c.) Weight loss product

b.) Improved feed efficiency

d.) Both A and B

8. You must have a VFD if mixed with?

a.) Water

c.) Feed only

b.) Aureomycin

d.) Both A and B

9. BMD helps with swine dysentery in?

a.) Pigs up to 250 pounds

c.) Mature sows

b.) Mature boars

d.) Mid Gestation Sows

10. The active ingredient in BMD is?

a.) Bovine Mild Dysentery

c.) Bacitracin Methylene Disalicylate

b.) Barley Molasses Dicalcium

d.) Beet Pulp/Mineral/Dehydrated

KEY

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Name_____ Contestant #_____County_____

Intermediate Quiz – 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.) A female beef animal nursing a calf is called?

a. Open non – lactating heifer
b. Bull
c. Steer
d. Cow

2.) What is the average gestation length in cattle?

a. 114 days
b. 150 days
c. 210 days
d. 283 days

3.) Ruminating mammals have how many compartments to their stomach?

a. 1
b. 2
c. 3
d. 4

4.) By nature cattle, sheep and goats are all?

a. Herbivores
b. Ruminants
c. Omnivore
d. Both A and B

5.) Corn is high in _____?

a. Minerals
b. Protein
c. Energy
d. All Vitamins

6.) Swine in the wild can be?

a. Herbivores
b. Ruminants
c. Omnivores
d. Both A and C

7.) What are two mineral sources often included in protein supplements for swine?

a. Limestone and Dicalcium phosphate
b. Bone Meal and B12
c. Lysine and Aureomycin
d. All of the above

8.) When mating a purebred Angus bull to a purebred Polled Hereford Cow the offspring should be?

a. Have no horns
b. Be solid black
c. Horned
d. Bulls only

9.) What is the average length of the estrous cycle in a heifer?

a. 7 days
c. 21 days
b. 14 days
d. 36 days

10.) When would it be recommended to give iron shots to swine after birth?

a. 48 days
c. 84 days
b. First 48 hours
d. 2 weeks

11.) Soybean meal is high in?

a. Roughages
c. Protein
b. Carbohydrates
d. Legumes

12.) A feed bunk for a group of market beef animals should be how far from the ground or floor?

a. 5 feet
c. No lower than the tallest calf's back
b. 60 inches
d. 2 – 3 feet

13.) What is most important 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

14.) Which of these species typically have multiple births?

a. Cow
c. Swine
b. Horse
d. Elephant

15.) Which of these are Quality Grades for Beef Cattle?

a. Select
c. Prime
b. Choice
d. All of these

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

a. Hay
c. Salt
b. Water
d. Vitamins

17.) Which state is the leading cattle producing state east of the Mississippi?

a. Kentucky
c. Indiana
b. Illinois
d. Texas

18.) What item(s) do you use to prepare a calf for a show?

a. Comb
c. Halter
b. Clippers
d. All of these

19.) A ribeye steak comes from what wholesale cut of a beef animal?

a. Rib
b. Flank
c. Brisket
d. Round

20.) What are major issues that affect sheep?

a. Parasites and Pneumonia
b. Pregnancy Disease and Vibrio
c. Enterotoxemia and Sore Mouth
d. All of these

21.) How many goat and sheep wethers are born each year?

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

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

a. Problem Paragraph
b. Scenario
c. Mutton
d. Extra Reading

23.) Mating a male and female of different breeds is called _____?

a. Linebreeding
b. Inbreeding
c. Crossbreeding
d. Outcrossing

24.) What is the inflammation, becoming infected and hardening of the udder called?

a. Constipation
b. Lactation
c. Productivity
d. Mastitis

25.) The period of time a calf nurses its mother is called _____?

a. Gestation
b. Lactation
c. Generation interval
d. Postpartum interval

Intermediate Quiz KEY– 2019

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d. Mastitis

25.) The period of time a calf nurses its mother is called _____?

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b. Lactation
c. Generation interval
d. Postpartum interval

2019 Intermediate Retail Meat Judging Class 1

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: Boneless 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	

2019 Intermediate Retail Meat Judging Class 1

KEY

4-3-2-1

Cuts: 3-4-2

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: Boneless Chops

A	1 2 3 4	19
B	1 2 4 3	22
C	1 3 2 4	23
D	1 3 4 2	30
E	1 4 2 3	29
F	1 4 3 2	33
G	2 1 3 4	21
H	2 1 4 3	24
I	2 3 1 4	27
J	2 3 4 1	36
K	2 4 1 3	33
L	2 4 3 1	39
M	3 1 2 4	29
N	3 1 4 2	36
O	3 2 1 4	31
P	3 2 4 1	40
Q	3 4 1 2	45
R	3 4 2 1	47
S	4 1 2 3	38
T	4 1 3 2	42
U	4 2 1 3	40
V	4 2 3 1	46
W	4 3 1 2	48
X	4 3 2 1	50

2019 Intermediate Retail Meat Judging Class 2

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 2: Strip Steaks

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	

2019 Intermediate Retail Meat Judging Class 2

KEY

4-1-3-2

Cuts: 2-4-2

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 2: Strip Steaks

A	1 2 3 4	**32**
B	1 2 4 3	**38**
C	1 3 2 4	**34**
D	1 3 4 2	**42**
E	1 4 2 3	**46**
F	1 4 3 2	**48**
G	2 1 3 4	**26**
H	2 1 4 3	**32**
I	2 3 1 4	**22**
J	2 3 4 1	**24**
K	2 4 1 3	**34**
L	2 4 3 1	**30**
M	3 1 2 4	**30**
N	3 1 4 2	**38**
O	3 2 1 4	**24**
P	3 2 4 1	**26**
Q	3 4 1 2	**40**
R	3 4 2 1	**34**
S	4 1 2 3	**48**
T	4 1 3 2	**50**
U	4 2 1 3	**42**
V	4 2 3 1	**38**
W	4 3 1 2	**46**
X	4 3 2 1	**40**

Intermediate Hay Judging Class – 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

__**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 answer questions on back of this sheet]

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 their diet since you dry lot your goat herd 80 percent of the year.

Questions

1.) Which hay sample is course stemmed but has the most Red Clover? _____

2.) Which hay sample has good color and looks the most palatable? _____

3.) Which hay sample is very course stemmed Alfalfa? _____

4.) Which hay sample would ruminants clean up and leave the least waste? _____

5.) Which hay sample looks the poorest? _____

Intermediate Hay Judging Class – 2019

(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)

Official: 2-3-1-4 Cuts: 3-3-5

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	**41**
B	1 2 4 3	**33**
C	1 3 2 4	**38**
D	1 3 4 2	**27**
E	1 4 2 3	**22**
F	1 4 3 2	**19**
G	2 1 3 4	**47**
H	2 1 4 3	**39**
I	2 3 1 4	**50**
J	2 3 4 1	**45**
K	2 4 1 3	**34**
L	2 4 3 1	**37**
M	3 1 2 4	**41**
N	3 1 4 2	**30**
O	3 2 1 4	**47**
P	3 2 4 1	**42**
Q	3 4 1 2	**25**
R	3 4 2 1	**31**
S	4 1 2 3	**17**
T	4 1 3 2	**14**
U	4 2 1 3	**23**
V	4 2 3 1	**26**
W	4 3 1 2	**17**
X	4 3 2 1	**23**

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

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 their diet since you dry lot your goat herd 80 percent of the year.

Questions

1.) Which hay sample is course stemmed but has the most Red Clover? ____**1**___

2.) Which hay sample has good color and looks the most palatable? ___**2**____

3.) Which hay sample is very course stemmed Alfalfa? ___**3**____

4.) Which hay sample would ruminants clean up and leave the least waste? ___**2**____

5.) Which hay sample looks the poorest? ___**4**___

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:

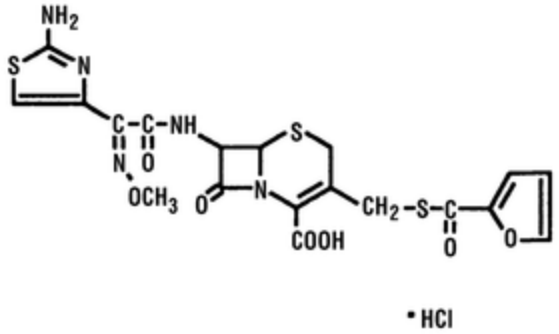


Figure 1.

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.

County_____

Team Members _____

_____

Intermediate 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

Intermediate 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

Draxxin®
(tulathromycin)
Injectable Solution

Antibiotic
100 mg of tulathromycin/mL

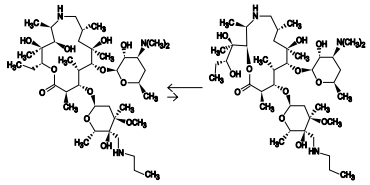
For subcutaneous injection in beef and non-lactating dairy cattle and intramuscular injection in swine only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

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

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

County_____

Team Members

_____

_____

Intermediate Team Breeding Exercise – 2019

Your team is managing a 200 head commercial cow-calf operation that sells stockers at a local market in Kentucky. You are paid premiums for calves that will mature quickly and will likely grade choice. Your herd consists of mainly Sim-Ang cross cows. You have been using Charolais bulls lately that are producing high performing calves, but they are not grading choice. You have decided to replace two (2) of your bulls and buy two (2) new bulls. The bulls you purchase will be used to sire stockers and the top twenty-five percent of the heifers will be saved as replacements. **Using the pictures of the bulls and the data, circle your answers to the questions and then discuss with the Contest Official why your group selected those (2) bulls.**

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

Circle Your Choices

1.) Which Bull has the poorest EPDs?

1 2 3 4 5

2.) Which Bull's daughters will need the most feed to maintain their body condition?

1 2 3 4 5

3.) Which Bull will produce daughters which will have more dystocia issues?

1 2 3 4 5

4.) Which 2 Bulls would you select on paper? **Both have to be correct.**

1 2 3 4 5

5.) Which Bull's calves should net you and the feedlot the most money?

1 2 3 4 5

6.) Which Bull is the fattest and least expressive in his muscle?

1 2 3 4 5

7.) Which Bull visually has the largest scrotal circumference?

1 2 3 4 5

8.) Which bull appears to be bold in his fore rib and short bodied?

1 2 3 4 5

9.) Which bull is branded?

1 2 3 4 5

10.) Which bull should make attractive females that would mate nicely with bull number 4?

1 2 3 4 5

EPDs for Angus Bulls

Bulls	CED	WW	YW	SC	Milk	Marb	RE	$B
1	12	+57	+101	+.82	+27	+.56	+.50	+115.24
2	4	+45	+85	+.66	+35	+.38	+.30	+80.60
3	6	+50	+89	+.67	+20	+.55	+.49	+103.37
4	10	+59	+106	+.82	+26	+.59	+.55	+116.61
5	11	+52	+95	+.83	+29	+.54	+.49	+104.97
Breed Averages	6	+50	+89	+.73	+24	+.53	+.48	+111.62

KEY

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Bull Choices