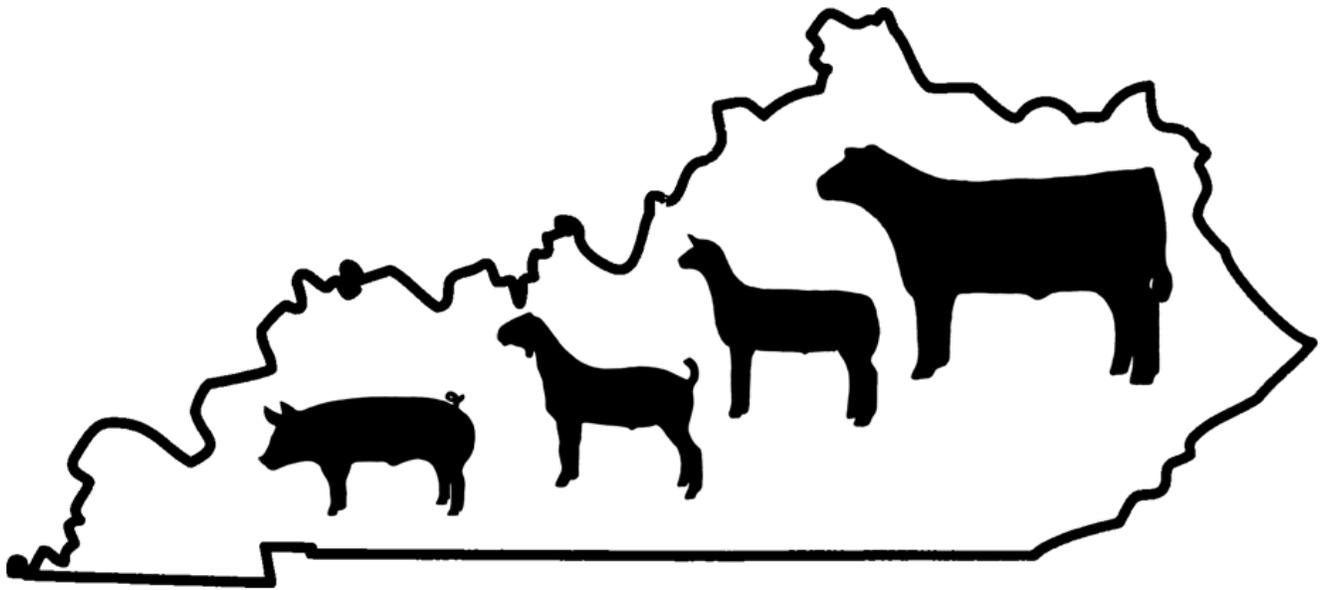


Kentucky 4-H Livestock Skillathon

2021 Resource Packet



Saturday – April 10, 2021

Hardin County Extension Office

111 Opportunity Way, Elizabethtown, KY. 42701

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Kentucky 4-H State Livestock Skillathon Contest



Contest Date:

April 10, 2021

Location:

Hardin County Extension Office
111 Opportunity Way, Elizabethtown, KY. 42701

Contest Coordinator:

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Department of Animal and Food Sciences
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Lexington, KY 40546-0215
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Contest Registration and Payment is due by March 17, 2021. No late entries will be accepted.

Contest Registration Link: https://uky.az1.qualtrics.com/jfe/form/SV_9FbVFuXrePt0aCW

Contest Payment Link: <https://kentucky4hfoundation.org/skillathon/>

Rules and Regulations

Team and Contestant Eligibility

1. To be eligible to participate in the 2021 State Skillathon Contest, contestants must have completed their six (6) hours of educational training under the coordination of the local Certified Volunteer Leader prior to the State Skillathon Contest.
2. All Kentucky 4-H age youth (9-18) in good standing are eligible to compete. Junior and Senior contestants will compete in separate age divisions, and contestants must participate in their appropriate age division. The age breaks for the age divisions are as follows:
 - a. Junior – must have reached their 9th birthday, or be in the fourth grade in school, as of January 1 of the current year, and must not have passed their 13th birthday as of January 1 of the current year. **Parents will not be allowed to go through contest with their children.**
 - b. Senior – must have reached their 14th birthday as of January 1 of the current year, and not have passed their 19th birthday as of January 1 of the current year.
***Due to COVID-19 concerns, cloverbuds will not be permitted to go through this year's contest. This is in attempt to reduce the number of people at the facility. It is planned to reinstate cloverbuds participation in years to come.**
3. Teams may consist of up to four (4) members, but only the top three (3) individual overall scores will be included in the team overall score. **Counties with more than four (4) contestants in a particular age division may have multiple teams, but the number of contestants per team may not exceed four (4).**

- a. All members of a four person team will compete, but the member receiving the lowest overall score will automatically be declared the alternate. The alternate's scores will not be included in any of the team totals, but will be considered in making all individual awards.
 - b. Teams consisting of three members will not have an alternate and all members' scores will count towards individual and team awards.
4. The high placing Senior team will be invited to represent Kentucky at the National Skillathon Contest which will be held in November in Louisville, Kentucky. To represent Kentucky at the National Skillathon Contest, a Senior team must have four team members.
 - a. In the event a county with more than one Senior team competing at the State Skillathon Contest should win the State Skillathon Contest, that county may choose amongst all of its Senior age contestants in determining the youth that will compete at the National Skillathon Contest. However, only youth from that county that competed at the State Skillathon Contest are eligible for selection.
 - b. In the event a county with only three Senior (3) contestants [only one (1) team of three (3) Senior contestants] wins the State Skillathon Contest, that team must pick up a fourth team member from another county to be eligible for competition at the National Skillathon Contest. The added team member must be a Senior age youth and must have competed at the State Skillathon Contest.
 5. No member may represent Kentucky in an out-of-state NATIONAL Skillathon event in which he/she has previously participated. This includes the National Skillathon Contest in Louisville. Additionally, a member may not participate in the National 4-H Livestock Skillathon Contest and the National 4-H Livestock Judging Contest held in conjunction with the North American International Livestock Exposition in Louisville the same year. Contestants in 4-H competitive events must not have participated in official post-secondary (university, college, junior college or technical school) competitive events of a similar nature and in the same subject matter area.
 6. According to the last policy statement agreed upon by 4-H and FFA officials, "An individual may participate in the same 4-H or FFA contest provided the contest is not being conducted on the same day or in connection with the same event (i.e. State Fair or similar event)".
 7. This contest covers the understanding and practical application and the principles of Animal Sciences related to beef, sheep, swine, and goats.
 8. For past years Skillathon Answer Sheets see: <https://afs.ca.uky.edu/4h-youth/meat-animal/livestock-skillathon>

Contest Method of Conduct

1. Contestants in the State Skillathon Contests shall check-in with the contest coordinator or their representative on the day of the contest at least **30 minutes** prior to the scheduled starting time.
2. Only contestants or those adults assisting with the contest (group leaders, card runners, contest officials, etc.) will be permitted in the competition area. **Parents will not be allowed to go through with their children.**
3. Contestants will be allowed ten (10) minutes to complete each of the eight individual competition classes. Teams will be allowed twenty (20) minutes to complete the team activities. **Teams will have (10) minutes to prepare and must present in the second (10) minutes.**
4. During the individual competition round, contestants will be divided into groups and will remain with that assigned group throughout the round of classes. While completing the individual competition classes, there will be no conferring between contestants or between a contestant and anyone else except as directed by contest officials. The team competition round will follow the individual competition round.

5. Team members will complete one official answer scantron for each team class representing the combined effort of all team members. Teams will be allowed twenty (20) minutes to complete the group assignment for each class and turn in their answer sheet. During the team competition round of the contest, contestants will only be allowed to confer with their own team members during the time period allowed for each class. **Teams will have (10) minutes to prepare and must present in the second (10) minutes.**
6. **Contestants shall not wear any hats.**
7. Contestants should bring a blank steno pad, clipboard, blank paper, calculator (simple 4 function), and writing instruments (#2 pencil is mandatory for scantron). Contestants may not bring books, notes, pamphlets, reference materials, or cell phones into the contest area. **Contestants found in contempt of this rule will be disqualified.**
8. Contestants are not to pick up or touch any item that is being identified or evaluated in the individual competition classes.

Awards Held Virtually on April 11th

Individual and team awards will be given in each age division, and will include:

- Top 10 individuals in Identification
- Top 10 individuals in Evaluation
- Top 10 Individuals in Quality Assurance
- Top 20 Individuals Overall
- Top 5 teams in Identification
- Top 5 teams in Evaluation
- Top 5 teams in Quality Assurance
- Top 10 teams Overall

Contest Classes – Junior Division

Individual Classes (Please Take Note to the Changes for 2021)

1. **Retail Meat Cut Identification:** (50 possible points) From a provided list, identify from photographs or pictures the uniformly accepted name of a combination of ten beef, pork, and lamb retail cuts, including the species, wholesale cut from which each retail cut originates, and the retail cut.
2. **Livestock Feed Identification:** (50 possible points) From a list provided, identify from actual samples the proper name for ten livestock feeds.
3. **Livestock Breed Identification:** (50 possible points) From a list provided, identify from photographs or pictures, ten livestock (beef cattle, swine, sheep, and goat) breeds.
4. **Livestock Equipment Identification:** (50 possible points) From a list provided, identify from photographs or pictures or actual equipment the proper name for ten pieces of equipment used in livestock production.
5. **Meat Judging Class:** (50 possible points) Rank one class of four similar actual retail cuts of meat.
6. **Hay Judging Class:** (50 possible points) Rank a class of four hay samples.
7. **Quality Assurance Exercise:** (50 possible points) Demonstrate how to read a medicine label, calculate withdrawal times, complete a treatment record, and make responsible management decisions regarding quality assurance.

8. **Quiz:** (50 possible points) Complete a quiz concerning the total livestock industry.

Team Exercises/Activities

NOTE: Junior team members will confer as a group to complete the following exercises/activities. All team members must participate and have an active role. The specific components that are required for each activity/exercise will be age appropriate.

1. **Quality Assurance Exercise:** (200 possible points) Team members will demonstrate how to read an animal health product label, calculate dosage rates and withdrawal times, complete a treatment record, be familiar with administration routes, and make responsible management decisions regarding quality assurance.
2. **Animal Breeding and Marketing Exercise:** (200 possible points) Team members will evaluate a breeding animal scenario and make animal selection decisions based upon performance data to rank breeding animals for use within the situation and **actual live animals**.

*Total team scores will be determined by adding the three highest individual team members' class totals with the total accumulated from the team's competition classes.

Clover Skillathon Class List

Class Name/Activity	Points	Type	Comments
Retail Meat ID	50	Scantron	Identify 10 retail cuts (2 pts/species; 1 pt/primal; 2 pts./retail)
Livestock Feed ID	50	Scantron	Identify 10 feedstuffs (5 points each)
Livestock Breed ID	50	Scantron	Identify 10 breeds (5 points each)
Livestock Equipment I.D.	50	Scantron	Identify 10 items (5 points each)
Retail Meat Judging Class	50	Scantron	Placing class only
Hay Judging Class	50	Scantron	Placing class only
Quality Assurance	50	Scantron	5 questions (10 points each)
Quiz	50	Scantron	25 questions (2 points each)
Individual Total Points Possible	400		
Team Quality Assurance	200	Scantron	
Team Animal Breeding/Marketing	200	Scantron	
Team Total Points Possible (counting top 3 scores)	1600		

Contest Classes-Senior Division

Individual Classes

1. **Retail Meat Cut Identification:** (60 possible points) From a provided list, identify from photographs or pictures the uniformly accepted name of a combination of ten beef, pork, and lamb retail cuts, including the species, wholesale cut from which each retail cut originates, and the retail cut.
2. **Livestock Feed Identification:** (60 possible points) From a list provided, identify from actual samples the proper name for ten livestock feeds, and the unique characteristics or uses of the feedstuff.

3. **Livestock Breed Identification:** (60 possible points) From a list provided, identify from photographs or pictures, ten livestock (beef cattle, swine, sheep, and goat) breeds, and unique characteristics/important traits for the breed.
4. **Livestock/Meat Equipment Identification:** (60 possible points) From a list provided identify from photographs or pictures the proper name for 20 pieces of equipment used in livestock production or the meat industry and the use for the piece of equipment.
5. **Meat Judging Class:** (50 possible points) Rank the class of four similar retail cuts of meat.
6. **Hay Judging Class:** (50 possible points) Rank a class of four hay samples with forage analysis information, nutrient requirements of the species being fed and a production scenario. Rank a class of four samples of fleece.
7. **Quality Assurance Exercise:** (60 possible points) Demonstrate how to read a medicine label, calculate withdrawal times, complete a treatment record, and make responsible management decisions regarding quality assurance.
8. **Quiz:** (60 possible points) Complete a quiz concerning the total livestock industry.

Team Exercises/Activities

NOTE: Senior team members will confer as a group to complete the following exercises/activities. All team members must participate and have an active role. The specific components that are required for each activity/exercise will be age appropriate.

1. **Quality Assurance Exercise:** (200 possible points) Demonstrate how to read an animal health product label, calculate dosage rates and withdrawal times, complete a treatment record, be familiar with administration routes, and make responsible management decisions regarding quality assurance.
2. **Animal Breeding and Marketing Exercise:** (200 possible points) Team members will evaluate a breeding animal scenario and make animal selection decisions based upon performance data to rank breeding animals for use within the situation.
3. **Livestock Feeding and Performance Exercise:** (200 possible points) Team members will evaluate a number of feed rations and related information concerning the feed rations and rank the feed rations from most ideal to least ideal to meet a specific livestock production scenario.

*Total team scores will be determined by adding the three highest individual team members' class totals with the total accumulated from the team's competition classes.

Class list on following page.

Senior Skillathon Class List

Class Name/Activity	Points	Type	Comments
Retail Meat ID	60	Scantron	For each of 10 retail cuts provide: Retail name (2 points each) Species (2 points each) Wholesale cut (2 points each)
Livestock Feed ID	60	Scantron	For each of 10 feedstuffs provide: Feedstuff name (2 points each) Uses/characteristics (2 points each)
Livestock Breed ID	60	Scantron	For each of 10 breeds provide: Breed name (2 points each) Characteristics/traits (2 points each)
Livestock/Meat Equipment I.D.	60	Scantron	For each of 20 items provide: Item name (3 points each)
Retail Meat Judging Class	50	Scantron	Placing class
Hay Judging Class	50	Scantron	Placing class only with data
Quality Assurance	60	Scantron	20 questions (3 points each)
Quiz	60	Scantron	30 questions (2 points each)
Individual Total	460		
Team Quality Assurance	200	Scantron	
Team Animal Breeding/Marketing	200	Scantron	
Team Livestock Feeding/Performance	200	Scantron	
Team Total	1980		

Retail Meat Cuts Identification

The following list highlights the retail meat cuts that may be used in the (C), Intermediate (I), and Senior (S) age divisions. Clovers will only be asked to provide the correct name for the retail cut. Intermediates will be asked to provide the correct name and species for the retail cut. Seniors will be asked to provide the correct name, species, and wholesale cut of origin for the retail cut.

Beef Retail Meat Cuts

Brisket, flat half (C,I,S)	Loin sirloin steak, shell (S)	Round bottom round steak (C,I,S)
Brisket, point half (C,I,S)	Loin sirloin steak, boneless (S)	Round eye round roast (C,I,S)
Brisket, whole (C,I,S)	Loin tenderloin steak (C,I,S)	Round eye round steak (C,I,S)
Chuck arm roast (C,I,S)	Loin porterhouse steak (C,I,S)	Round heel of round roast (S)
Chuck arm roast, boneless (S)	Loin T-bone steak (C,I,S)	Round rump roast, boneless (S)
Chuck arm steak (C,I,S)	Loin top loin steak (C,I,S)	Round steak (C,I,S)
Chuck arm steak, boneless (S)	Loin top loin steak, boneless (S)	Round steak, boneless (S)
Chuck blade roast (C,I,S)	Plate short ribs (C,I,S)	Round tip roast (C,I,S)
Chuck blade steak (C,I,S)	Plate skirt steak (C,I,S)	Round tip roast, cap off (S)
Chuck 7-bone roast (S)	Rib roast, large end (S)	Round tip steak (S)
Chuck 7-bone steak (S)	Rib roast, small end (S)	Round tip steak, cap off (S)
Flank steak (C,I,S)	Rib steak, small end (C,I,S)	Round top round roast (S)
Loin sirloin steak, flat bone (C,I,S)	Rib steak, small end, boneless (S)	Round top round steak (S)
Loin sirloin steak, pin bone (S)	Ribeye roast (S)	Shank cross cuts (C,I,S)
Loin sirloin steak, round bone (C,I,S)	Ribeye steak (C,I,S)	Shank cross cuts, boneless (S)
Loin sirloin steak, wedge bone (S)	Round bottom round roast (C,I,S)	

Lamb Retail Meat Cuts

Breast (C,I,S)	Rack rib chop (C,I,S)	Rack rib roast (C,I,S)
Breast riblets (C,I,S)	Leg sirloin chop (C,I,S)	Rack rib roast, boneless (C,I,S)
Leg American style roast (C,I,S)	Leg sirloin half (C,I,S)	Shanks (C,I,S)
Leg center slice (C,I,S)	Loin chop (C,I,S)	Shoulder blade chop (C,I,S)
Leg French style roast (C,I,S)	Loin double chop (C,I,S)	Shoulder neck slice (C,I,S)
Leg shank half (C,I,S)	Loin roast (C,I,S)	Shoulder square cut (C,I,S)

Pork Retail Meat Cuts

Fresh ham center slice (C,I,S)	Loin center rib roast (C,I,S)	Shoulder arm roast (C,I,S)
Fresh ham rump portion (C,I,S)	Loin center loin roast (C,I,S)	Shoulder arm steak (C,I,S)
Fresh ham shank portion (C,I,S)	Loin chop (C,I,S)	Shoulder blade Boston roast (C,I,S)
Fresh side pork (C,I,S)	Loin rib chop (C,I,S)	Sliced bacon (C,I,S)
Loin blade chop (C,I,S)	Loin sirloin chop (C,I,S)	Smoked jowl (C,I,S)
Loin blade roast (C,I,S)	Loin top loin chop (C,I,S)	Spareribs (C,I,S)
Loin butterfly chop (C,I,S)	Shoulder arm picnic roast (C,I,S)	

Wholesale cuts to be used by Senior Contestants

<u>Beef</u>	<u>Lamb</u>	<u>Pork</u>
Brisket	Breast	Bacon (belly)
Chuck	Leg	Boston shoulder
Flank	Loin	Ham
Loin	Rack	Jowl
Plate	Shank	Loin
Rib	Shoulder	Picnic shoulder
Round		
Rump		
Shank		

Learning Resources:

- Livestock Discovery CD
- Kentucky Livestock Volunteer Certification Resource Kit
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)
- Retail Meat Cut Identification – Flash Card Set (X180b, 150 cards, \$75). [Available from ITCS Instructional Materials website at <http://www.aces.uiuc.edu/IM/>]
- Retail Meat Cut Identification and Technology – CD-ROM (MDS100, CD-ROM, \$75). [Available from ITCS Instructional Materials website at <http://www.aces.uiuc.edu/IM/>]

Retail Meat Cut Identification

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. **Clovers** only provide answers for retail cut name. **Intermediates** provide answers for retail cut name and species of cut. **Seniors** provide answers for retail cut name, species of cut, and wholesale cut of origin. Each question is worth 5 points (50 points total for Clovers, 100 points total for Intermediates, 150 points total for Seniors).

	Retail Cut Name	Species of Cut	Wholesale Cut of Origin
<i>Ex.</i>	66	P	Q
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Retail Names – to be used in answer column 1 by Clovers, Intermediates, and Seniors

Beef Retail Meat Cuts

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

Lamb Retail Meat Cuts

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

Pork Retail Meat Cuts

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

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

- | | | |
|---------|---------|---------|
| 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

Lamb Wholesale Cuts

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

Pork Wholesale Cuts

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

Feedstuffs Identification

The following list highlights the feedstuffs that may be used in the Clover (*C*), Intermediate (*I*), and Senior (*S*) age divisions. Clovers will only be asked to provide the correct name for the feedstuff. Intermediates will be asked to provide the correct name and corresponding nutrient group for the feedstuff. Seniors will be asked to provide the correct name, corresponding nutrient group, and important characteristics/uses for the feedstuff.

Feedstuff Names

Alfalfa hay (<i>C,I,S</i>)	Grain sorghum (whole) (<i>C,I,S</i>)	Soybean meal (<i>C,I,S</i>)
Alfalfa pasture (<i>C,I,S</i>)	Ground ear corn (<i>C,I,S</i>)	Soybeans (whole) (<i>C,I,S</i>)
Barley (whole) (<i>C,I,S</i>)	Ground limestone (<i>C,I,S</i>)	Spray-dried animal plasma (<i>S</i>)
Blood meal (<i>S</i>)	Ground shelled corn (<i>C,I,S</i>)	Spray-dried whey (<i>S,I</i>)
Brewers dried grain (<i>S</i>)	Kentucky Bluegrass pasture (<i>C,I,S</i>)	Steam flaked corn (<i>C,I,S</i>)
Canola meal (<i>S,I</i>)	L-lysine HCl (<i>S</i>)	Steam rolled barley (<i>S</i>)
Copper sulfate (<i>C,I,S</i>)	L-threonine (<i>S</i>)	Steam rolled oats (<i>S</i>)
Corn distillers dried grain (<i>C,I,S</i>)	L-tryptophan (<i>S</i>)	Steamed bone meal (<i>C,I,S</i>)
Corn distillers dried grain w/solubles (<i>S</i>)	Linseed meal (<i>S</i>)	Sunflower meal (<i>S,I</i>)
Corn gluten feed (<i>S</i>)	Liquid molasses (<i>S,I</i>)	Tall Fescue hay (<i>C,I,S</i>)
Corn gluten meal (<i>S,I</i>)	Meat and bone meal (<i>S</i>)	Tall Fescue pasture (<i>C,I,S</i>)
Cottonseed (whole) (<i>C,I,S</i>)	Millet (whole) (<i>C,I,S</i>)	Timothy hay (<i>C,I,S</i>)
Cottonseed hulls (<i>C,I,S</i>)	Oats (whole) (<i>C,I,S</i>)	Timothy pasture (<i>C,I,S</i>)
Cottonseed meal (<i>C,I,S</i>)	Oat hulls (<i>C,I,S</i>)	Trace-mineral premix (<i>S</i>)
Cracked shelled corn (<i>C,I,S</i>)	Orchardgrass hay (<i>C,I,S</i>)	Trace-mineralized salt (<i>C,I,S</i>)
Crimped oats (<i>S</i>)	Orchardgrass pasture (<i>C,I,S</i>)	Triticale (whole) (<i>S</i>)
Defluorinated rock phosphate (<i>C,I,S</i>)	Oyster shells (<i>C,I,S</i>)	Tryptosine (<i>S</i>)
Dehydrated alfalfa meal (<i>C,I,S</i>)	Peanut meal (<i>S,I</i>)	Urea (<i>C,I,S</i>)
Dicalcium phosphate (<i>C,I,S</i>)	Red Clover hay (<i>C,I,S</i>)	Vegetable oil (<i>S,I</i>)
DL-methionine (<i>S</i>)	Red Clover pasture (<i>C,I,S</i>)	Vitamin premix (<i>S</i>)
Dried beet pulp (<i>C,I,S</i>)	Roller dried whey (<i>S,I</i>)	Wheat (whole) (<i>C,I,S</i>)
Dried molasses (<i>S,I</i>)	Rye (whole) (<i>C,I,S</i>)	Wheat bran (<i>C,I,S</i>)
Dried skim milk (<i>S</i>)	Salt, white (<i>C,I,S</i>)	Wheat middlings (<i>S</i>)
Feather meal (<i>S</i>)	Santoquin (<i>S</i>)	White Clover hay (<i>C,I,S</i>)
Fish meal (<i>S,I</i>)	Shelled corn (<i>C,I,S</i>)	White Clover pasture (<i>C,I,S</i>)
	Soybean hulls (<i>C,I,S</i>)	

Livestock Feedstuffs Nutrient Groups

Carbohydrates (energy)
Fats (energy)
Minerals
Protein
Vitamins
Water

Learning Resources:

- Livestock Discovery CD
- Kentucky Livestock Volunteer Certification Resource Kit
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)

Livestock Feed Identification

INSTRUCTIONS: For each picture, 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. **Clovers** only provide answers for feedstuff name. **Intermediates** provide answers for feedstuff name and nutrient group. **Seniors** provide answers for feedstuff name, nutrient group, and characteristics/uses of the feedstuff. Each question is worth 5 points (50 points total for Clovers, 100 points total for Intermediates, 150 points total for Seniors).

	Feedstuff Name	Nutrient Group	Characteristics/Uses
<i>Ex.</i>	<i>18</i>	<i>P</i>	<i>F</i>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Feed Names – to be used in answer column 1 by Clovers, Intermediates, and Seniors

- | | | |
|---|--------------------------------|-------------------------------|
| 1. Alfalfa hay | 26. Grain sorghum (whole) | 52. Soybean meal |
| 2. Alfalfa pasture | 27. Ground ear corn | 53. Soybeans (whole) |
| 3. Barley (whole) | 28. Ground limestone | 54. Spray-dried animal plasma |
| 4. Blood meal | 29. Ground shelled corn | 55. Spray-dried whey |
| 5. Brewers dried grain | 30. Kentucky Bluegrass pasture | 56. Steam flaked corn |
| 6. Canola meal | 31. L-lysine HCl | 57. Steam rolled barley |
| 7. Copper sulfate | 32. L-threonine | 58. Steam rolled oats |
| 8. Corn distillers dried grain | 33. L-tryptophan | 59. Steamed bone meal |
| 9. Corn distillers dried grain with soluble | 34. Linseed meal | 60. Sunflower meal |
| 10. Corn gluten feed | 35. Liquid molasses | 61. Tall Fescue hay |
| 11. Corn gluten meal | 36. Meat and bone meal | 62. Tall Fescue pasture |
| 12. Cottonseed (whole) | 37. Millet (whole) | 63. Timothy hay |
| 13. Cottonseed hulls | 38. Oats (whole) | 64. Timothy pasture |
| 14. Cottonseed meal | 39. Oat hulls | 65. Trace-mineral premix |
| 15. Cracked shelled corn | 40. Orchardgrass hay | 66. Trace-mineralized salt |
| 16. Crimped oats | 41. Orchardgrass pasture | 67. Triticale (whole) |
| 17. Defluorinated rock phosphate | 42. Oyster shells | 68. Tryptosine |
| 18. Dehydrated alfalfa meal | 43. Peanut meal | 69. Urea |
| 19. Dicalcium phosphate | 44. Red Clover hay | 70. Vegetable oil |
| 20. DL-methionine | 45. Red Clover pasture | 71. Vitamin premix |
| 21. Dried Beet pulp | 46. Roller dried whey | 72. Wheat (whole) |
| 22. Dried molasses | 47. Rye (whole) | 73. Wheat bran |
| 23. Dried skim milk | 48. Salt, white | 74. Wheat middlings |
| 24. Feather meal | 49. Santoquin | 75. White Clover hay |
| 25. Fish meal | 50. Shelled corn | 76. White Clover pasture |
| | 51. Soybean hulls | |

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

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

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

- | | |
|--|--|
| A. Most extensively produced feed grain in U.S. | L. Good source of ruminant bypass protein, and used in limited amounts in young pig diets |
| B. Due to high fiber content, it is fed primarily to ruminant animals. | M. Primarily used in milk replacers and starter diets for young animals. |
| C. Except when fed to poultry, it is typically ground or rolled prior to feeding. | N. By-product from making cheese that is produced by roller-drying the liquid that remains after the casein and most of the fat has been removed. |
| D. Grown primarily in dry regions of U.S., where there is not enough rain for corn production. | O. Excellent source of digestible protein, B vitamins, and minerals. |
| E. A synthetic cereal grain, derived by crossing wheat with rye. | P. High in protein, and contains active immunoglobulins. |
| F. Excellent feedstuff for horses and ruminants (high in protein, minerals, and vitamins). Sometimes used as a laxative in pre-farrowing sow diets. | Q. By-product of the distiller's industry, and consists of the dried, screened, coarse grain fraction that remains after the removal of the alcohol from a yeast fermented mash. |
| G. Widely grown source of protein. Rarely fed in the whole, full-fat form, but can be if first heated to destroy anti-nutritional factors (trypsin inhibitor). | R. Obtained by processing rock phosphates into phosphoric acid, which is then reacted with calcium carbonate (limestone). |
| H. Most widely used protein supplement in the U.S. | S. Included at high levels (250 ppm) in swine diets where it acts as a growth promotant. |
| I. Not used in monogastric feeds due to toxicity problems associated with gossypol (a yellow pigment). | |
| J. A crop derived from rapeseed, but unlike traditional rapeseed is low in both erucic acid and glucosinates. | |
| K. Protein is somewhat low in digestibility due to tannins found in the skin, and has poor amino acid balance. | |

Breeds of Livestock Identification

The following list highlights the breeds that may be used in the Clover (*C*), Intermediate (*I*), and Senior (*S*) age divisions. Clovers will only be asked to provide the correct name for the breed. Intermediates will be asked to provide the correct name and corresponding origin of the breed. Seniors will be asked to provide the correct name, corresponding origin of the breed, and important characteristics/uses for the breed.

Beef Cattle

Angus (*C,I,S*)
Brahman (*C,I,S*)
Brangus (*C,I,S*)
Charolais (*C,I,S*)
Chianina (*C,I,S*)
Gelbvieh (*C,I,S*)
Hereford (*C,I,S*)
Limousin (*C,I,S*)
Maine Anjou (*C,I,S*)
Polled Hereford (*C,I,S*)
Red Angus (*C,I,S*)
Red Poll (*C,I,S*)
Santa Gertrudis (*C,I,S*)
Shorthorn (*C,I,S*)
Simmental (*C,I,S*)
Tarentaise (*C,I,S*)

Goats

Alpine (*C,I,S*)
American Cashmere (*C,I,S*)
Angora (*C,I,S*)
Boer (*C,I,S*)
Kiko (*C,I,S*)
Lamancha (*C,I,S*)
Nubian (*C,I,S*)
Oberhasli (*C,I,S*)
Pygmy (*C,I,S*)
Saanen (*C,I,S*)
Spanish (*C,I,S*)
Tennessee Fainting (*C,I,S*)
Toggenburg (*C,I,S*)

Sheep

Cheviot (*C,I,S*)
Columbia (*S*)
Corriedale (*S*)
Dorper (*S*)
Dorset (*C,I,S*)
Finnsheep (*C,I,S*)
Hampshire (*C,I,S*)
Katahdin (*S*)
Merino (*S*)
Montadale (*C,I,S*)
Oxford (*C,I,S*)
Polled Dorset (*C,I,S*)
Rambouillet (*C,I,S*)
Romney (*C,I,S*)
Southdown (*C,I,S*)
Suffolk (*C,I,S*)

Swine

Berkshire (*C,I,S*)
Chester White (*C,I,S*)
Duroc (*C,I,S*)
Hampshire (*C,I,S*)
Hereford (*C,I,S*)
Landrace (*C,I,S*)
Pietrain (*C,I,S*)
Poland China (*C,I,S*)
Spotted (*C,I,S*)
Tamworth (*C,I,S*)
Yorkshire (*C,I,S*)

NOTE: For information on origins and breed characteristics/traits see the Livestock Discovery CD or one of the resources listed below.

Learning Resources:

- Livestock Discovery CD
- Kentucky Livestock Volunteer Certification Resource Kit
- Oklahoma State Univ. Breeds of Livestock website: <http://www.ansi.okstate.edu/breeds/>
- Auburn Univ. Breeds of Livestock website: http://www.ag.auburn.edu/users/sschmidt/breed_id2/
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)

Breeds of Livestock Identification

- New Sheep Breeds for Senior Contestants -

Below is information for the new sheep breeds that will be added for Senior contestants.

	<h3>Columbia</h3> <p><u>Origin</u> – United States-(USDA Sheep Experiment Station in Dubois, Idaho)</p> <p><u>Type</u> – Dual Purpose (Meat and Wool)</p> <p><u>Wool</u> – High yielding, heavy fleece</p> <p><u>Descriptors</u> –Very large framed white face, bright white wool, pink nose</p> <p><u>Important Traits</u> – Large framed, fast growing dual purpose breed with good meat and a heavy wool clip</p>
	<h3>Corriedale</h3> <p><u>Origin</u> – New Zealand and Australia</p> <p><u>Type</u> – Dual Purpose (Meat and Wool)</p> <p><u>Wool</u> – Bulky, dense, and high yielding</p> <p><u>Descriptors</u> –Polled, large framed, white face and legs with wool covering extending down around the poll/forehead, darker pigment on nose, ears point straight out</p> <p><u>Important Traits</u> – good carcass quality, fast growth, combines good meat and wool characteristics</p>

[Continued on next page]

Breeds of Livestock Identification

- New Sheep Breeds for Senior Contestants - (continued)

Dorper



Origin – South Africa

Type – Meat Breed

Wool – Mixture of hair and wool, considered a hair sheep breed

Descriptors – Polled (hornless), moderate frame size, very thick and blocky, can be solid white (White Dorper) or have black pigmented fiber (hair) on head and neck, requires no shearing as the hair/wool mixture is naturally shed during warm weather

Important Traits – Extremely hardy, fast growing, fertile, can survive and thrive under harsh conditions

Katahdin



Origin – United States (Maine)

Type – Meat Breed

Wool - No fleece, considered a hair sheep breed

Descriptors – Hair can be many different colors or combinations, but most commonly white with some spots with no fiber (hair) on head or legs, medium frame size, hornless

Important Traits – adapted to a wide variety of production systems, higher tolerance to parasites and high temperatures and humidity, low maintenance, excellent mothering ability

Merino



Origin – Mainly Spain, but refined in United States and Australia

Type – Wool Breed

Wool – Very High Quality

Descriptors – Medium sized, rams are horned, but some polled strains exist, produces a very high quality and high yielding fleece

Important Traits – Wool production and strong flocking instinct

Livestock Breeds Identification

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. **Clovers** only provide answers for breed name. **Intermediates** provide answers for breed name and origin of breed. **Seniors** provide answers for breed name, origin of breed, and important characteristics/traits. Each question is worth 5 points (50 points total for Clovers, 100 points total for Intermediates, 150 points total for Seniors).

	Breed Name	Origin of Breed	Important Traits
<i>Ex.</i>	<i>20</i>	<i>H</i>	<i>I</i>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Breed Names – to be used in answer column 1 by Clovers, Intermediates, and Seniors

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

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

A. Jeanerette, Louisiana	H. Africa	N. Berkshire County, England
B. Charolles, France	I. Oregon (U.S.)	O. North Carolina State Univ.
C. Italy	J. Finland	P. Chester County, Pennsylvania
D. Bavaria, Germany	K. Hampshire County, England	Q. Iowa and Nebraska (U.S.)
E. Des Moines, Iowa	L. Oxford County, England	R. Pietrain, Belgium
F. Alps of Switzerland	M. Kent England	S. Putnam and Hendricks County, Indiana
G. New Zealand		

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

Beef Cattle Characteristics/Traits

- A. Disease resistance, heat resistance, hardiness, and maternal instincts.
- B. Well defined muscling and good growth rate.
- C. Growth rate, muscling, early puberty, calving ease, and mothering ability.
- D. Foraging ability, docile, and good fertility.
- E. Heavily muscled, high carcass yield, growth rate, and feed efficiency.
- F. Excellent meat quality (nicely marbled), calving ease, and hardy.

Goats Characteristics/Traits

- G. Hardy, adaptable animals that thrive in any climate while maintaining good health and excellent production.
- H. Insulative properties of dual coat, hardy, and high health.
- I. Meat yield, growth rate, browsing ability, fertility, adaptability to wide climatic conditions, and extended breeding season.
- J. Milk yield, high butterfat, sturdy, hardy, and excellent temperament.
- K. High butterfat content, extended breeding season, best suited for hot conditions, and multi-purpose use (milk, meat, and hide).
- L. Heavy milkers, rugged bone, and vigor. Saanens are sensitive to excessive sunlight and perform best in cooler conditions.

Sheep Characteristics/Traits

- M. Carcass conformation, will breed "out-of-season", and milking ability.
- N. Prolificacy, mothering ability, and wool production.
- O. Carcass conformation, growth rate, feed conversion, and milking ability.
- P. Carcass conformation, heavy fleece, and lambing percentage.
- Q. Herding instinct and wool production.
- R. Carcass conformation, early maturity, and adaptability to varied climates.

Swine Characteristics/Traits

- S. Aggressive breeder and high growth rate.
- T. Prolificacy (litter size), milking ability, mothering ability.
- U. Extreme muscling and leanness.
- V. Carcass quality (intramuscular fat).
- W. Excellent rate of gain and feed efficiency.
- X. Conception rate and meat quality (intramuscular fat)

Livestock/Meat Equipment Identification

The following list highlights the equipment that may be used in the Clover (*C*), Intermediate (*I*), and Senior (*S*) age divisions. Clovers will only be asked to provide the correct name for livestock equipment. Intermediates and Seniors will be asked to provide the correct name and appropriate use for livestock and meat equipment.

Livestock Equipment (<i>C,I,S</i>)		Meat Equipment (<i>I,S</i>)
All-in-one castrator/docker	Foot rot shears	Backfat ruler
Artificial insemination pipettes	Freeze branding iron	Band saw
Bowl waterer	Hoof knife	Bone dust scraper
Balling gun	Hog holder (snare)	Boning knife
Barnes dehorner	Lamb tube feeder	Bowl chopper
Cattle clippers	Needle teeth nippers	Dehairing machine
Clipper comb	Nipple waterer	Electrical stunner
Clipper cutter	Nose ring	Emulsifier
Currycomb	Nose ring pliers	Ham net
Disposable syringes	Obstetrical (O.B.) chain	Hand saw
Drench gun	Paint branding iron	Hard hat
Ear notchers	Pistol-grip syringe	Loin eye area grid
Ear tag pliers	Ram marking harness	Meat grinder
Elastrator	Rumen magnate	Meat grinder auger
Electric branding iron	Scalpels	Meat grinder knife
Electric dehorner	Scotch comb	Meat grinder plate
Electric docker	Shearer's screwdriver	Meat grinder stuffing rod
Emasculator (Burdizzo)	Sheep shears (electric)	Meat hook
Emasculator	Slap tattoo	Meat tenderizer
Ewe prolapse retainer	Tattoo pliers	Meat trolley
Fencing pliers	Wool card	Metal knife scabbard
		Rubber apron
		Sharpening steel
		Smoke house
		Thermometer
		Tumbler
		Vacuum sausage stuffer
		Whale saw

NOTE: For information on appropriate uses for livestock and meat equipment see the Livestock Discovery CD or one of the resources listed below.

Learning Resources:

- Livestock Discovery CD
- Kentucky Kentucky Livestock Volunteer Certification Resource Kit
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)
- Nasco Farm & Ranch Catalog (Catalogs can be obtained free of charge from Nasco's website: <http://www.enasco.com/farmandranch/>)

Livestock/Meat Equipment Identification

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. **Clovers** will only be asked questions pertaining to the names of livestock equipment. **Intermediates** and **Seniors** provide answers for livestock/meat equipment names and equipment use. Each question is worth 5 points (50 points total for Clovers, 100 points total for Intermediates and Seniors).

	Equipment Name	Equipment Use
Ex.	17	F
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

Equipment Names – to be used in answer column 1 by Clovers, Intermediates, and Seniors

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

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

- | | |
|---|---|
| <p>A. A device used to deposit boar semen into reproductive tract of a gilt or sow. The spiral tip or button end of the pipette is inserted into the cervix where the semen is deposited.</p> <p>B. Used to administer various pills (medications) to cattle and horses. It is placed down the throat to administer the pills.</p> <p>C. The part of cattle clippers that guides the hair towards the clipper cutter.</p> <p>D. Used to administer precise amounts of liquid medications to cattle, sheep, goats, and horses. The hooked portion is placed in the animal's mouth to administer the liquid medication.</p> <p>E. An instrument used for the bloodless castration (young male calves, lambs, and goats) and docking of tails (young lambs and goats). It is used to place a small rubber ring over the scrotum or tail to shut off circulation.</p> <p>F. Used to dock the tails of lambs and piglets. It cauterizes as it cuts the tail to eliminate excessive bleeding.</p> <p>G. An instrument used for the bloodless castration of young male calves, lambs, and goats by severing (crushing) the testicular cord.</p> <p>H. An instrument used to control vaginal prolapse in ewes.</p> <p>I. Used to trim hooves of cattle, sheep, and goats to help prevent foot diseases.</p> | <p>J. Used to restrain hogs that are too big to catch and hold by hand. The cable portion of the hog catcher (snare) is placed over the hog's snout to restrain the hog.</p> <p>K. An instrument used to assist in pulling lambs from ewes that are experiencing lambing difficulties (dystocia).</p> <p>L. Used to give vaccinations to multiple animals without needing to reload the syringe with more vaccine.</p> <p>M. Used to insert a RALGRO pellet (for growth promotion) under the loose skin and above the cartilage on the back side of a beef calf's ear.</p> <p>N. A non-rusting, round post electric fence insulator. Will work on round posts up to about 1/2-inch diameter.</p> <p>O. Used by shearers to quickly replace the clipper comb and clipper cutter on cattle clippers.</p> <p>P. Used to card (comb or rake) the wool on sheep prior to shearing.</p> |
|---|---|

Meats Judging

Clover contestants will be asked to rank one class of four similar retail cuts of meat. Intermediate contestants will be asked to rank two classes of four similar retail cuts of meat. Senior contestants will be asked to rank two classes of four similar retail cuts of meat and answer five questions on one class.

Ranking a Class of Retail Meat Cuts

The following criteria should be used when evaluating meat cuts:

Criteria	Description
Muscling	Size of the lean portion (amount of muscle)
Leanness (plate loss)	Fat and bone lost as the cut is cooked and consumed
Quality	Amount of marbling (small flecks of fat within the muscle); firmness with no signs of dryness or excess juices
Color	Beef should be bright cherry red; Pork should be bright grayish pink; Lamb should be light pink

FOR EXAMPLE: Heavy muscled, lean, high quality, correctly colored cuts should be placed high in the class

Fat, light muscled, discolored cuts should be placed low in the class.

Example Questions for Senior Contestants:

- 1) Which cut had the highest lean to fat ratio?
- 2) Which cut had the least marbling?
- 3) Which cut had the most correct beef color?
- 4) Between cut 1 and cut 3, which cut had a finer texture?
- 5) Which cut would have the greatest plate loss?

Learning Resources:

- Livestock Discovery CD
- Kentucky Kentucky Livestock Volunteer Certification Resource Kit
- Meat Evaluation Classes, Part 1: Beef (F270-1 filmstrip, 100 fr., w/guide, \$43). [Available from ITCS Instructional Materials website at <http://www.aces.uiuc.edu/IM/>]
- Meat Evaluation Classes, Part 2: Pork & Lamb (F270-2 filmstrip, 85 fr., w/guide, \$37). [Available from ITCS Instructional Materials website at <http://www.aces.uiuc.edu/IM/>]
- Meat Evaluation Classes, Part 2: Pork & Lamb (S270-2 slide set, 85 fr., w/guide, \$54). [Available from ITCS Instructional Materials website at <http://www.aces.uiuc.edu/IM/>]

Hay Judging

Clover contestants will be asked to visually rank one class of four hay samples. Intermediate contestants will be asked to visually rank a class of hay samples and answer five questions on the class. Senior contestants will be asked to rank a class of four hay samples with forage analysis information, nutrient requirements of the species being feed, and a production scenario

Ranking a Class of Hay on Visual Basis Only (Clovers/Intermediates)

The following criteria should be used when evaluating hay:

<i>Criteria</i>	<i>Description</i>
Color	Bright green color is best; brown to dark brown color is poorest
Aroma*	Should be free from smell of mold, mildew, etc.
Leaf to stem ratio	High leaf to stem ratio is desirable; as stem size increases the leaf to stem ratio decreases
Purity	Should be free from weeds or other foreign plants which decrease the hay's value (i.e., alfalfa should be all alfalfa)
Softness*	Hay that has been properly cured and stored should be soft to the touch

**When judging some hay classes, it may not be permitted to touch or smell the hay samples. In those cases, place the class using only color, leaf to stem ratio, and purity.*

Example Questions for Intermediate Contestants:

1. Which hay sample appears to have the finest stems?
2. Which hay visually appears to have the highest percentage of alfalfa content?
3. Which hay has the least desirable color?
4. Which hay will likely result in the highest feeding loss when fed to sheep?
5. Which sample will likely result in the lowest feeding loss when fed to sheep?

Example Production Scenario, Nutrient Requirements, and Forage Analysis (Seniors)

Scenario:

The hay being ranked will be fed to ewes during early lactation. Ewes with singles and those with twins will be sorted into two groups after lambing, with the hay being used primarily with ewes nursing twins. Any hay remaining will be marketed to other local sheep producers.

Nutrient requirements:

(155 lb. ewe nursing twins, first 6-8 weeks of lactation)

Dry Matter 6.0 lb.

Crude Protein 15.0% (dry matter basis)

TDN 65.0% (dry matter basis)

Forage Analysis (dry matter basis)

	Hay #1	Hay #2	Hay #3	Hay #4
Dry matter, %	88.6	88.4	88.6	87.9
Crude protein, %	16.8	18.2	20.5	18.1
Digestible protein, %	12.1	13.4	15.5	13.3
Acid detergent fiber (ADF), %	35.8	39.7	34.0	32.0
TDN, %	62.0	63.0	64.7	63.0

Learning Resources:

- Oklahoma State University publication entitled "Hay Judging" (F-2588). A copy can be obtained at the following website: <http://www.okrangelandswest.okstate.edu/pdfFiles/OSUextPubs/F-2588.pdf>
- University of Kentucky publication entitled "Quality Hay Production" (AGR-62). A copy can be obtained at the following website: <http://www.ca.uky.edu/agc/pubs/agr/agr62/agr62.pdf>

Fleece Judging

Intermediate and Senior contestants will be asked to visually rank one class of four fleeces. The following criteria should be used when evaluating fleeces:

<i>Criteria</i>	<i>Description</i>
Estimated clean wool content (yield and shrinkage)	High yield per fleece is desirable. Small amount of light-colored yolk as free from adhering sand, dirt, and vegetable matter as possible. Cut heavily if tied with any twine other than paper.
Length	Should be combing or staple length for the grade: i.e., fine, 3 in.; ½ blood, 3-½ in.; ¾ blood, 3-¾ in.; ¼ blood, 4 in.; low ¼ blood, 4-¼ in.; braid, 4-½ in. Lengths more than ½ inch greater than this are of no additional value except increasing the yield and grease weight.
Quality or fineness	Should fall clearly in one of the grades according to fineness; i.e., fine, ½ blood; ¾ blood; ¼ blood; low ¼ blood; braid. Uniformity of fineness particularly desirable. Cut heavily for hairy britch.
Soundness (strength)	Fiber should be strong throughout and free from breaks.
Purity	Free from hair, kemp, black or brown fibers. Cut heavily for black or brown fibers and coarse, hairy britch.
Character and color (crimp)	Evenly crimped or wavy from base to tip. Crimp should be distinct. Free from frowsy wool. Soft and springy to the touch. White to cream, bright color most desirable. Should be free from stains and with an even distribution of yolk.

*Taken from *Judging Wool and Mohair* by J.L. Groff and G. Ahlschwede (Texas A&M University).

Learning Resources:

- Texas A&M University publication entitled “Judging Wool and Mohair” (AS3-4.058). A copy can be obtained at the following website: <http://www.uky.edu/Ag/AnimalSciences/4h/livestockskillathon.html>

Quality Assurance (Individual)

When provided with a medication label/medication insert and (or) a scenario, all Clover, Intermediate, and Senior contestants (with age appropriateness) should be able to demonstrate how to read a medicine label, calculate withdrawal times, complete a treatment record, and make responsible management decisions regarding quality assurance. An example medication label/insert (with the key parts labeled) is shown below.

1. Name of Medication
2. Active Ingredient(s)
3. Species
4. Approved Uses
5. Dosage
6. Cautions
7. Route of Administration
8. Storage Requirements
9. Warnings (Withholding Times)
10. Sizes Available

1 ————— ***Swinibiotic*** ————— **2**

(Compicillin in Aqueous Solution)

Directions for use: See package insert

3 ————— For use in Non-Lactating Beef Cattle and Swine

Read Entire Brochure Carefully Before Using This Product

For Intramuscular Use Only

Active Ingredients: Swinibiotic is an effective antimicrobial preparation containing compicillin hydrochloride. Each ml of this suspension contains 250,000 units of compicillin hydrochloride in an aqueous base.

4 ————— **Indications: Beef Cattle** – pneumonia, bronchitis, mastitis, foot rot, wound infections. **Swine** – pneumonia, mastitis, wound infections: and other bacterial infections caused by or associated with compicillin-susceptible species.

Recommended Dosage

The usual dose is 2 ml per 100 lb of body weight given once daily for 3 days.
Maximum dose is 12 ml/day.

<i>Body Weight</i>	<i>Dosage</i>
100 lb	2 ml
300 lb	6 ml
500 lb	10 ml
600 lb or more	12 ml

5 {

6 { **Caution:** 1. Do not mix Swinibiotic with other injectable solutions as this may cause precipitation of the active ingredients. 2. Swinibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this medication in the loin, hip, rump, subcutaneously, intravenously, or near a major nerve because it may cause tissue damage. 3. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 4. Treated animals should be closely observed for 30 minutes after treatment. Should an adverse reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. 5. Swinibiotic must be stored between 2° and 8° C (36° to 46° F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

7 —————

8 —————

9 ————— **Warnings:** The use of this medication in beef cattle and swine must be discontinued for 28 days before treated animals are slaughtered for food. Do not use in lactating animals.

10 ————— **How Supplied:** Swinibiotic is available in vials of 50 ml.



Observe Label Directions

Learning Resources:

- Kentucky Livestock Volunteer Certification Resource Kit
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)
- Youth Pork Quality Assurance Plus Program materials. Available from the National Pork Board (Phone: 515-223-2600; website: <http://www.pork.org/Producers/YouthPQAPlus/default.aspx>)
- Kentucky Beef Quality Assurance Manual. Available at the following website: <http://www.ca.uky.edu/agc/pubs/id/id140/id140.pdf>

Livestock Quiz

All Clover, Intermediate, and Senior contestants will complete a 25 question quiz of general animal science and livestock production information.

Example Questions – Clovers and Intermediates

1. _____ Which of the following swine breeds was developed in Chester County, Pennsylvania?
A. Chester White B. Duroc C. Spotted D. Poland China
2. _____ The dressed body of a slaughtered meat animal is called the:
A. Scale B. Carcass C. Breed type D. Dock
3. _____ Which of the following is a form of identification for beef animals?
A. Ear tagging B. Vaccination C. Dehorning D. Feeding

Example Questions – Seniors

1. _____ Which of the following factors has resulted in today's market hog being 50% leaner as opposed to hogs marketed in the 1960s?
A. Improved genetics
B. America's pork producers
C. Better feeding practices
D. All of the above
2. _____ The amount of fat cover a market animal possesses is called:
A. Finish B. Substance C. Balance D. Structural Correctness
3. _____ The comfortable space animals develop around them is called their:
A. Point of balance C. Comfort or flight zone
B. Blind spot D. Handler position
4. _____ What is the average length of gestation for a pregnant sow?
A. 180 days B. 114 days C. 90 days D. 150 days

Learning Resources:

- Livestock Discovery CD
- Kentucky Kentucky Livestock Volunteer Certification Resource Kit
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)
- UK Agripedia website (<http://www.ca.uky.edu/Agripedia/>)

Team Quality Assurance Exercise

For this exercise teams will demonstrate how to read an animal health product label, calculate dosage rates and withdrawal times, complete a treatment record, be familiar with administration routes, and make responsible management decisions regarding quality assurance. The following exercise is an example that would appropriate for Intermediate and Senior teams (a Clover exercise would be a simpler version that required less information and/or a shorter duration of time).

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EXAMPLE TEAM QUALITY ASSURANCE EXERCISE

Follow the medical history of a pig on a confinement hog operation from birth to slaughter by filling in the boxes in the chart below with the requested information for each medication that the pig (Wilbur) receives throughout his lifetime. [NOTE: All medication labels will be supplied during the actual contest.]

September 27, 2004: Happy Birthday! It's a boy! Wilbur is farrowed, his weight is 4 lbs. Iron is administered.

Product Name	Storage	Dosage	Route of Administration	Duration of Treatment	Withdrawal Time
<i>Iron Dextran-200</i>					

September 30, 2004: Scours in the farrowing house, weight is still 4 lbs. Administer Apramycin.

Product Name	Storage	Dosage	Route of Administration	Duration of Treatment	Withdrawal Time
<i>Apralan</i>					

October 11, 2004: Wilbur is weaned, weight is 18 lbs. Routine vaccine of the herd.

Product Name	Storage	Dosage	Route of Administration	Duration of Treatment	Withdrawal Time
<i>Flu-Sure</i>					

October 25, 2004: Chronic cough in nursery, vet prescribes medication to treat the entire nursery. There are 325 hog's in Wilbur's nursery room with an average weight of 28 pounds.

Product Name	Storage	Dosage	Route of Administration	Duration of Treatment	Withdrawal Time
<i>Neomycin Soluble</i>					

December 6, 2004: Routine worming of pigs in the grower-finisher barn. There are 200 head in the barn with an average weight of 125 lbs.

Product Name	Storage	Dosage	Route of Administration	Duration of Treatment	Withdrawal Time
<i>Ivomec Premix</i>					

January 24, 2005: Finisher: Wilbur comes up lame, due to bacterial arthritis, his weight is 240 lbs. You decide to treat Wilbur for three days and sell him before he's completely crippled.

Product Name	Storage	Dosage	Route of Administration	Duration of Treatment	Withdrawal Time
<i>Lincomix (300 mg/ml)</i>					

On what date can Wilbur safely be sold? _____

<p>Learning Resources:</p> <ul style="list-style-type: none"> • Kentucky Livestock Volunteer Certification Resource Kit • Youth Pork Quality Assurance Plus Program materials. Available from the National Pork Board (Phone: 515-223-2600; website: http://www.pork.org/Producers/YouthPQAPlus/default.aspx) • Kentucky Beef Quality Assurance Manual. Available at the following website: http://www.ca.uky.edu/agc/pubs/id/id140/id140.pdf 		<ul style="list-style-type: none"> • Beef Resource Handbook (4-H 117R) • Sheep Resource Handbook (4-H 134R) • Swine Resource Handbook (4-H 194R)
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Team Animal Breeding/Marketing Exercise

For this exercise teams will demonstrate how to make sound animal breeding and (or) marketing decisions.

Example Exercise for Intermediates and Seniors:

You are a commercial lamb producer and your primary target is fast growing lambs for slaughter. However, the neighbor kids like to get some 4-H lambs from you. You also prefer to keep replacements from your own flock. Your ewe flock is mostly whiteface for an improved wool price. You currently have the four rams described below:

- **Rams 1 and 2** are big Suffolk whose lambs gain extremely well, but are course in their skeletal makeup.
- **Ram 3** is a large Dorset whose daughters make good replacements and gain about 1 lb per day.
- **Ram 4** is a medium frame blackface cross whose lambs are much smoother and make good show lambs.

These four rams are starting to show some age. You have found the following replacement prospects:

<i>Ear Tag</i>	<i>Breed</i>	<i>DNA</i>	<i>ADG (lbs)</i>	<i>Description</i>	<i>Scrotal Measurement</i>	<i>Purchase Price</i>
#1099	Suffolk	RRNS	1.34	Large frame, good terminal sire prospect	29 cm	\$300
#775	Dorset	QRNN	0.90	Medium frame, stylish design	32 cm	\$250
#1279	Blackface	QRNN	1.10	Medium frame, stylish design	30 cm	\$250
#44R	Suffolk	RRNN	1.00	Medium frame, very good conformation	30 cm	\$350
#659	Columbia	QRNS	1.10	Large frame, good wool	31 cm	\$300

You only have \$600 plus any salvage value (\$100 each) from selling all or some of your current rams to spend on the replacements. Using the scenario and the data in the table above, determine if you would keep any of your existing rams and which of the replacement prospects you would purchase. You can only maintain four total rams. Discuss with a contest official how you arrived at your decision and show how much money you would spend.

Example Exercise for Clovers:

You are a commercial lamb producer whose flock is made up of mainly Dorset crossbred ewes. Your primary target is fast growing lambs for slaughter. However the neighbor kids like to get some 4-H lambs from you. You need to purchase a new ram. Discuss with a contest official which of the following rams you would select, and answer the five questions below about the rams.

<i>Ear Tag</i>	<i>Breed</i>	<i>ADG (lbs)</i>	<i>Description</i>
1	Suffolk	1.34	Large frame, good terminal sire prospect
2	Dorset	0.90	Medium frame, stylish design
3	Blackface	1.10	Medium frame, stylish design
4	Suffolk	1.00	Medium frame, very good conformation
5	Columbia	1.10	Large frame, good wool

1. _____ Which ram would probably sire the fastest growing lambs?
2. _____ Which ram would offer the least increase in performance?
3. _____ Which ram is considered a “dual purpose” breed?
4. _____ Which two rams would probably sire the more maternally oriented daughters?
5. _____ Between Rams 2 and 3, which one would you choose to produce 4-H lambs and why?

Learning Resources:

- Kentucky Livestock Volunteer Certification Resource Kit
- Publication entitled “Judging Performance Classes” (ASC 167) which can be found on the Livestock Discovery CD. This publication provides examples of using scenarios and EPD data to place a class of animals.
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)

Team Livestock Feeding/Performance Exercise

Senior Teams Only

For this exercise, teams will evaluate and rank a number of feed rations the most ideal to the least ideal to meet a specific livestock production scenario.

Example Exercise:

You have 500 black hided steers in your feedlot weighing 950 pounds. You want to market this group of cattle 100 days from now at an average weight of 1275 pounds. Rank these feeds in the order that you would feed them for the remaining 100 days. All rations are balanced to meet mineral requirements. However, no additional roughage will be offered. Your final 2 minutes will be used to explain the differences between your top and bottom choice to the contest official.

<i>Ration No.</i>	<i>Ingredients in Ration</i>	<i>% of Ration as Fed</i>	<i>Ration Price/ Pound as Fed</i>
1	Whole Corn Corn Silage Corn Gluten	60% 25% 15%	\$0.06
2	Whole Oats Cracked Corn Beet Pulp	34% 33% 33%	\$0.09
3	Whole Corn Distillers Grain Ground Hay	75% 15% 10%	\$0.06
4	Cracked Corn Ground Corn Soybean Meal	60% 25% 15%	\$0.07
5	Whole Oats Whole Corn Whole Cotton Seed	45% 45% 10%	\$0.10

Learning Resources:

- Livestock Discovery CD
- Kentucky Livestock Volunteer Certification Resource Kit
- Beef Resource Handbook (4-H 117R)
- Sheep Resource Handbook (4-H 134R)
- Swine Resource Handbook (4-H 194R)