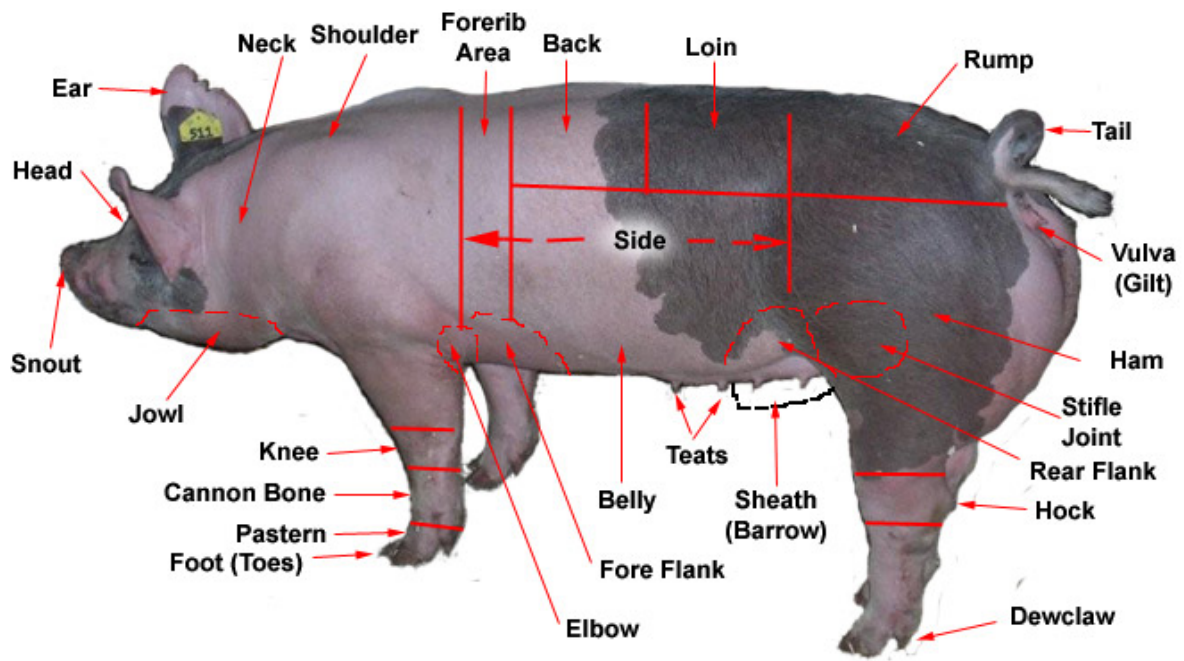


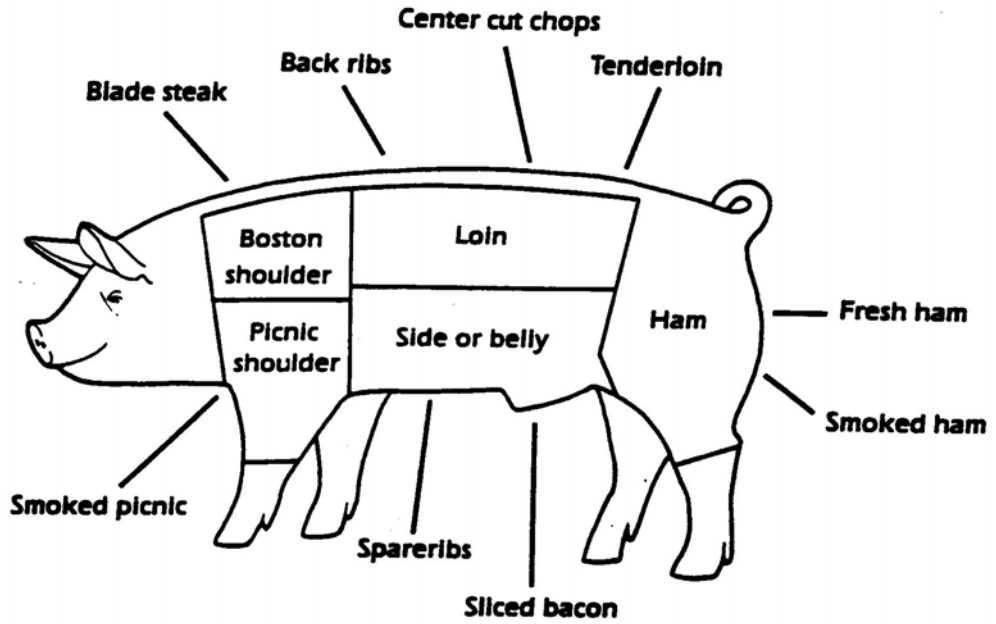
*LIVESTOCK ACHIEVEMENT PROGRAM  
FRESNO COUNTY 4H  
SWINE STUDY GUIDE*



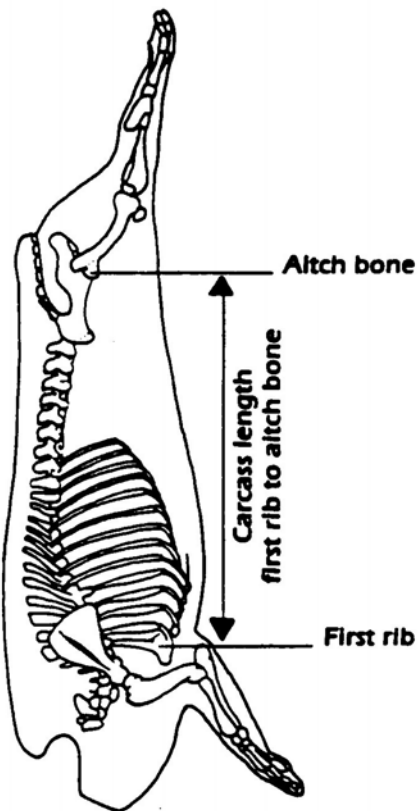
# Parts of the Pig



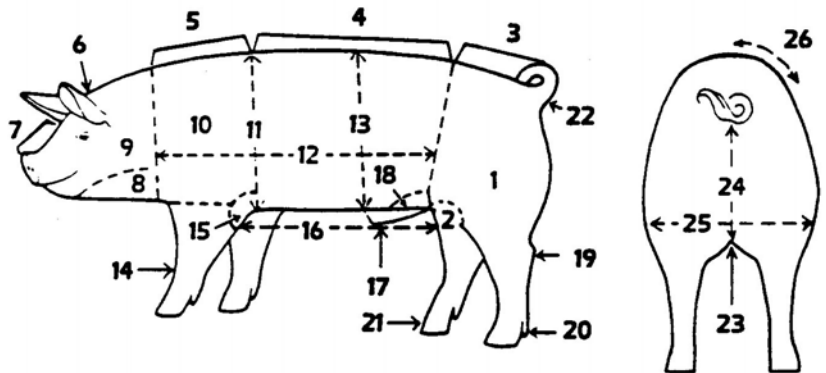
## Wholesale or primal cuts of pork.



## Measuring carcass length.



## Parts of a hog.



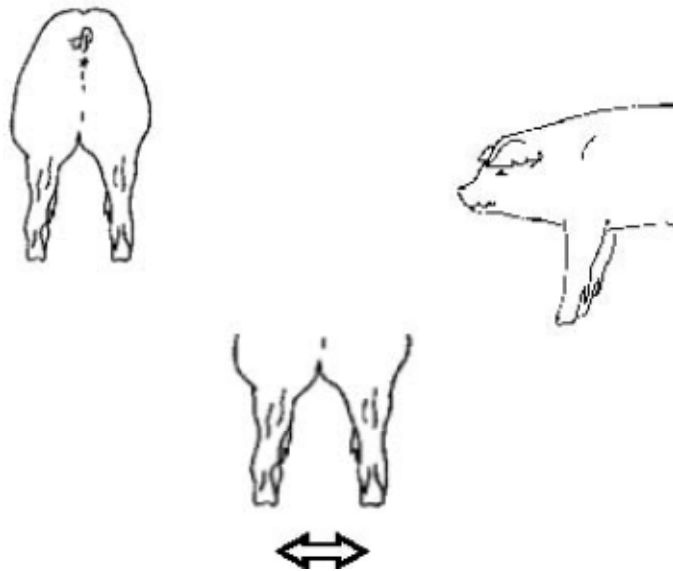
- |                         |                             |
|-------------------------|-----------------------------|
| 1. Ham                  | 14. Knee                    |
| 2. Stifle region of ham | 15. Elbow                   |
| 3. Rump                 | 16. Underline               |
| 4. Loin                 | 17. Sheath                  |
| 5. Shoulders            | 18. Rear flank              |
| 6. Poll                 | 19. Hock                    |
| 7. Face                 | 20. Dew claw                |
| 8. Jowl                 | 21. Pastern                 |
| 9. Neck                 | 22. Tail setting            |
| 10. Shoulder            | 23. Seam or crotch          |
| 11. Heartgirth          | 24. Depth of seam or crotch |
| 12. Length of side      | 25. Width of stifle         |
| 13. Depth of side       | 26. Turn over loin edge     |

## SELECTION

There are basic areas that need to be considered when selecting your show pig. They are muscle, structural correctness, capacity, frame and style and balance.

### Muscle

There are several indicators of muscle in pigs. The first place to look for muscle is the ham. The widest portion should be through the center of rump and ham. Select a pig that has a bulging forearm.



Well muscled hogs are wide based and large boned.

When viewed from the top look for an hour glass shape to the top. This will be a trim, heavy-muscled hog. It should be long and full in the rump, with the center of the ham being the widest part of the body. The shoulders should be wider than the loin, but not as thick as the ham. The loin will be uniform in width. When the hog walks there should be no evidence of fat over the top of the shoulders and the shoulders should move. Also, there should be no fat behind the shoulders or elbow pocket.

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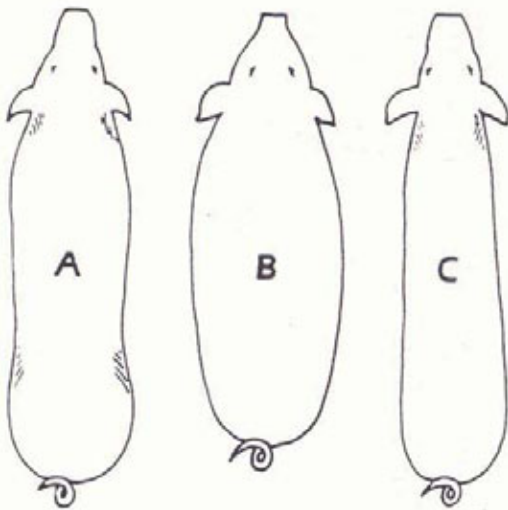
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## Estimation of body composition.

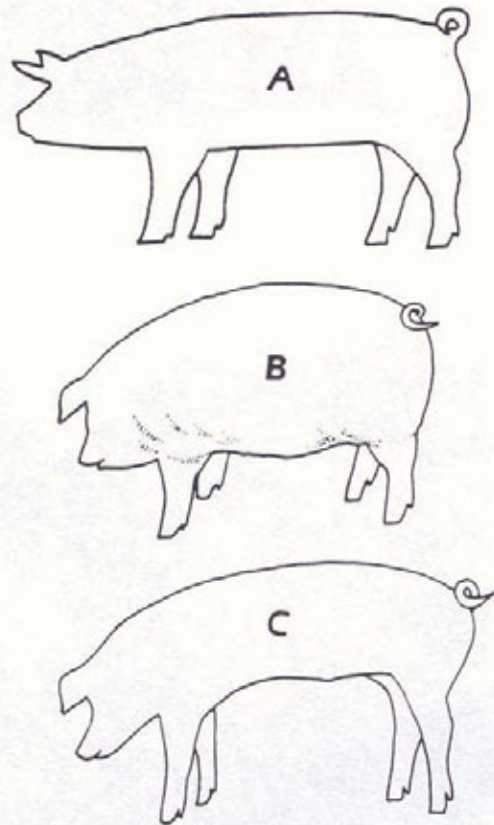
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Top view

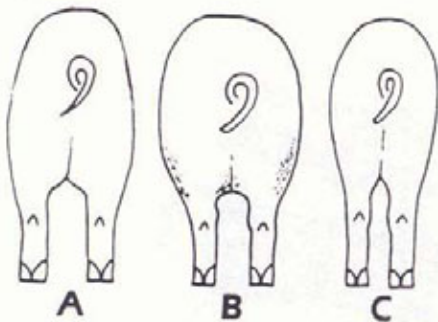


Side view

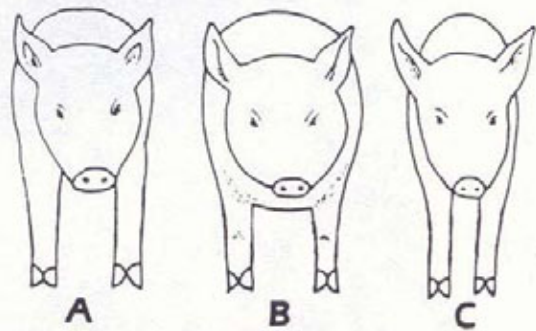


A Ideal meat type hog  
B Lard type  
C Lacks muscling

Rear view



Front view



## Structural Correctness

Structural correctness refers to how a pig's skeleton is put together, more specifically the bone structure. To be sure your pig is structurally correct, pick a pig that moves with ease and smoothness. Pigs should take long strides. They also should have a proper angle to the pasterns and have flex to the joints like the hock, knee and shoulder. These joints should flex and the pig should take a long, flexible, fluid stride.

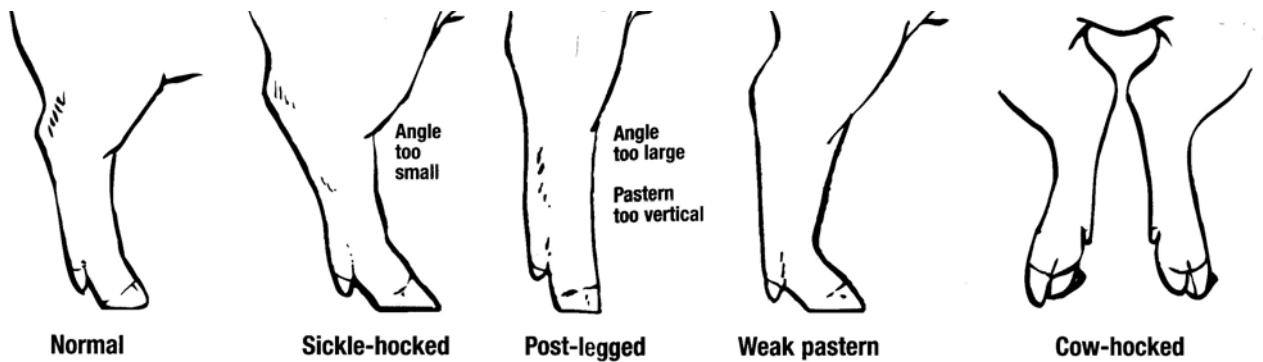
The pasterns should have an angle of 45 degrees and the hock should be at about a 22 degree angle for the best possible movement off the back end. Strong legs are important in market hogs. The bone should be large and the legs should be clean and solid looking.



Proper hind leg structure

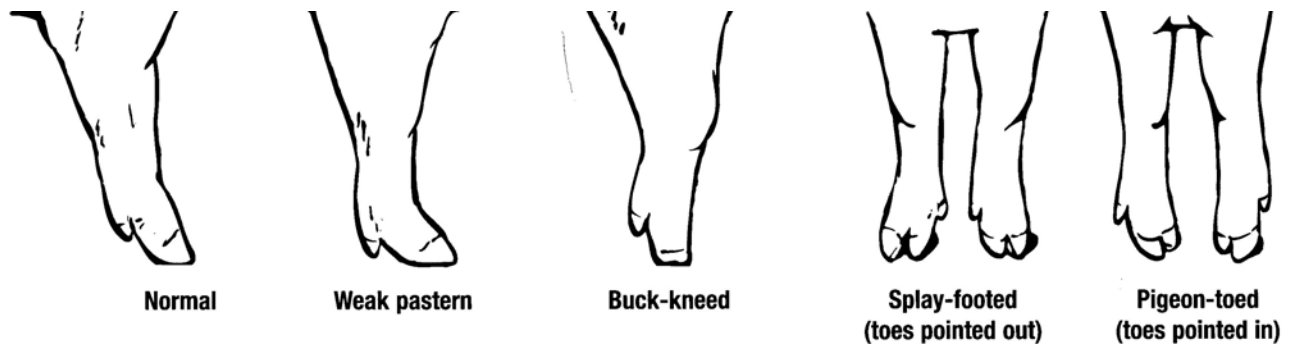


Poor hind leg structure



### Side View – Rear Legs

- Normal: note the angle of the hip, stifle, and hock joints.
- Sickle-hocked: when the angle of the hip, stifle, and hock joints is too small
- Post-legged: when the angle of the hip, stifle, and hock joints is too large
- Weak rear pasterns: can result in damage to hocks and dew claws
- Cow-hocked: when the hocks of the rear legs turn inward

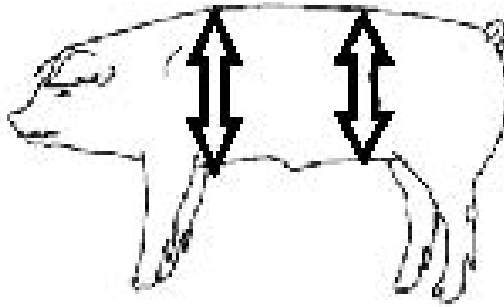


### Side View – Front Legs

- Normal: note how front legs slope from the shoulder
- Weak pastern: can cause damage to dew claws
- Buck-kneed: straight front legs cause the knee joints to buckle
- Splay-footed: tendency of the front toes to point outward
- Pigeon-toed: tendency of the front toes to turn inward

## Capacity

Pigs need to have adequate capacity to allow their internal organs to function properly and efficiently. They need to have a wide chest floor, a good spring of rib, and be deep sided in both the fore and rear flank. Remember that a deep sided hog can still be trim and neat in appearance.



## Frame

A moderate framed hog will grow well and have adequate size. Select a long-bodied, tall hog that stands well on its feet and legs. It should be large boned and show a lot of capacity, being boldly sprung at the ribs.

## Style and Balance

A hog that has style and balance is one that holds its head up when it walks, and is smooth in its overall appearance. It will be clean in the shoulder blades, jowl and underline. Hogs that are balanced stand wide and tall on straight legs, are uniform in the arch of their back, and their shoulder blades are close together.

Select a trim hog that is free of excess fat. Fat gives the appearance of smoothness and shortness. A trim hog is clean behind the shoulders and down the top. The base of the ham should be firm, at the base of the hams (cut up or v-shaped) with the tail setting high, and the tail head prominent.



# **SWINE STUDY GUIDE**

## **Livestock Expo**

### SKILLS

- Level I and II - Questions on basic management or fitting.
- Breed identification.
  - Anatomy - be able to name body parts of swine
  - Simple feed identification.
  - Equipment identification.
  - Judging.
  - Notching - How to read individual and litter numbers.
- Level III & IV- May include taking body temperature, how to use a snare, selecting the proper gauge and length of needle for injecting medication.
- Location for intramuscular, sub-Q or IV injection; filling a syringe; reading labels (expiration dates, withdrawal times, etc.).
  - Management questions (worming, parasite and disease control).
  - Measuring carcasses for length, back fat and rib eye.
  - Demonstrate how to dock tails, clip needle teeth, castrate, notch.
  - Feed ingredients and their nutritional values - Protein, Fat, Fiber, Vitamins, Minerals, and Essential Amino Acids - why are they needed?
  - Digestive System

### SHOWMANSHIP

- All Levels - Must demonstrate showmanship skills based on age and level
- May include driving, turning, penning use, use of hog board entering and leaving ring, stopping and proper use of cane or whip.

## SWINE TERMS - LEVEL I & II

1. **Barrow:** a male hog castrated at an early age.
2. **Boar:** a male hog of any age.
3. **Carcass:** dressed body of a meat animal, with the insides removed (offal).
4. **Castrate:** to remove the testicles from a male hog.
5. **Condition:** degree of fatness in meat animals.
6. **Conformation:** refers to shape and design of body.
7. **Crossbred:** mating of purebred hog but of different breeds.
8. **Farrow:** to give birth.
9. **Gestation:** period during pregnancy, 115 - 118 days, (approximately 3months, 3 weeks, 3 days)
10. **Gilt:** a young female hog which has not farrowed.
11. **Sow:** a mature female hog.
12. **Registered:** purebred animal whose pedigree is recorded with the breed registry.
13. **Runts:** small, undersized or weak pigs in a litter.
14. **Wean:** to remove the young from its mother.
15. **Sire:** father
16. **Dam:** mother.
17. **Cull:** animal taken out of the herd because poor performance or standards.
18. **Bred sow/gilt:** a female hog that is pregnant.
19. **Ration:** total feed given during 24 hours (1 day).
20. **Scours:** diarrhea or loose running manure.
21. **Shrinkage:** weight lost during hauling or other handling processes.
22. **Weaner pig:** a newly weaned pig.
23. **Feeder hog:** a young hog usually weighing 60-189 lbs.
24. **Market hog:** a hog for slaughter weighing 190-280 lbs.
25. **Notching:** notching the ears for identification - pig number and pig litter number.
26. **Needle teeth:** sharp needle- like teeth found in baby pigs ( removed at birth).
27. **Replacement:** gilt kept for breeding. Should have 12 to 14 sound teats and weigh 225-275
28. **Concentrate:** feedstuff that is high in energy and low in fiber (grains).
29. **Roughage:** feedstuff that is high in fiber and low in energy (hay).

## SWINE TERMS - LEVEL III & IV

1. **Barren:** not able to produce young
2. **Colostrum:** thick, yellow milk (first milk) produced by a gilt or sow after farrowing.
3. **Dressing % (or Yield %):** percent which chilled carcass is of the live weight.  
Range is 68 to 77% with an average of 72%  
$$\frac{\text{Dressed weight}}{\text{Live weight}} \times 100 = \text{Dressing \%}$$
4. **Estrus:** period of heat, able to conceive 2 days.
5. **Lactation:** period of producing milk.
6. **Pedigree:** written statement giving the record of an animal's ancestry (family tree).
7. **Deworm:** to give medication for killing of internal worms.
8. **Starter feed:** 18% protein feed fed to 40-75 pound feeder pigs.
9. **Grower feed:** 16% protein feed fed to 75-125 pound hogs.
10. **Finisher feed:** 14% protein feed fed to 125+ pound market hogs.
11. **Creep feeder:** an area where nursing pigs can get supplemental grain but their mother cannot.
12. **Mono-gastric:** an animal with a single stomach (swine).
13. **Brucellosis:** viral disease which causes abortion in pregnant swine; can be spread to humans through contaminated meat.
14. **Dysentery:** a disease which causes bloody scours, loss of weight and is highly contagious.
15. **Rhinitis:** a disease of swine that causes distortion of the snout in its advanced stages. Early symptoms are sneezing and reduced weight gains.
16. **Average Daily Gain (ADG):** Pounds of body weight gained per day. Range is 1.5 to 2.25 lbs / day
17. **Feed Conversion:** Quantity of feed consumed to produce one pound of body weight. 3 to 5 lbs of feed will produce 1 lb. of animal body weight gain
18. **Average Age to Market Weight:** 6 to 7 months

## SWINE TERMS - LEVEL III & IV (continued)

### SWINE BREEDS

**Breed:** A group of animals that have unique color patterns or body structure because they share common ancestors that were selected from those characteristics. For centuries, producers have been able to change the characteristics of their hogs to meet demands for the consumer. In the 1700's and 1800's, lard was used a great deal for cooking and making soap; therefore, to please consumers, producers raised what was called a "lard-type hog". Then in the 1900's, people began using more vegetable oil causing the demand for lard to fall and producers began raising a "bacon-type hog". Now, since the most recent demand is for lean meat, swine producers try to produce hogs that have large amounts of lean meat but enough fat to maintain a good pork taste.

Producers can make these changes because the tendency to certain amounts of muscle and fat is inherited; that is, it is passed from parent to offspring. By carefully selecting their breeding hogs, producers can build up a line of hogs with the characteristics they desire.

The most popular breeds of swine are:

**Berkshire.** The Berkshire was developed in England. They are black with six white points (four feet, nose and tail). They have erect ears and an upturned nose. Berkshires produce long, acceptable carcasses.

**Chester White.** The Chester White breed originated in Pennsylvania. They are solid white and have droopy ears. Chesters are noted for their mothering ability, litter size and high percentage of ham.

**Duroc.** The Duroc breed originated from the Jersey Red hogs of New Jersey. Durocs vary from light to dark red in color and have droopy ears. Durocs have a superior growth rate, feed efficiently, and carcass leanness.

**Hampshire.** Hampshires originated in Kentucky. They are black with a white belt around the shoulders and body, including the front legs. They have erect ears. Hampshires excel in producing lean, muscular carcasses.

**Landrace.** The Landrace breed originated in Denmark. They are white, long, and have large, droopy ears. Landrace surpass most breeds for litter size and mothering ability. They grow well and produce long, acceptable carcasses.

**Pietrain.** The Pietrain breed is widely recognized as the world's leanest, heaviest muscle breed. Developed in Europe as a pure terminal line breed, Pietrains look like Spots with droopy ears, long and wide body.

**Spotted.** The Spotted breed, or “Spots”, originated in Indiana. Spotted swine are black and white in color and have droopy ears. Spots grow rapidly and produce muscular carcasses.

**Yorkshire.** Yorkshires were developed in northern England. They are known as “Large Whites” in that country. They are solid white and have erect ears. Yorkshires are noted for their large litters, mothering ability, and body length.

#### OTHER INFORMATION

- Baby pigs are most often lacking in iron.
- Grinding is the usual way to prepare grain for swine.
- Cottonseed meal for swine must have the gossypol removed because it is toxic to monogastric animals. (present in the cottonseed hull).
- Pigs drink a quart or more of water for every pound of dry feed they eat.
- Pigs require salt which is usually added to commercial feeds.
- 70-80 percent of the cost of raising pigs is feed.
- Tails are docked to prevent tail biting.

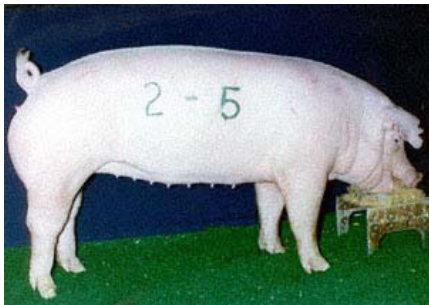


provided by National Swine Registry

Hampshire



Pietrain



provided by National Swine Registry

Chester White



Landrace



Yorkshire



provided by National Swine Registry

Spotted



provided by National Swine Registry

Duroc



Berkshire

**SWINE EQUIPMENT / SUPPLY I.D.**

	alcohol		automatic feeder
	baby pig waterer		water pressure nipple
	water bowl drinker		farrowing crate
	pig creep feeder		heat lamp
	portable scales		snout holder (snare)
	mineral oil		liquid soap
	electric clippers		rubber boots
	flexible ear tag		marking chalk
	conditioner		paint brands
	rice root brush		plastic stiff bristle brush
	disposable syringe		automatic syringe
	disposable needle		hog board
	ear notching pliers		needle teeth clippers
	hog show cane or pipe		hog show whip
	hog slapper		hog carcass tattoo
	scalpel		rubber hog pan
	spray bottle		pig O.B. forceps
	tagging pliers		

**SWINE SKILLS AND SHOWMANSHIP  
LEVEL I and II**

SKILLS DEMONSTRATION	Possible Points	Score	Comments
Management questions (2)	1		
Fitting questions (2)	1		
<b>TOTAL</b>	<b>2</b>		
<b>SHOWMANSHIP</b>			
Entering & Leaving Ring	5		
Driving/Turning Swine	10		
Stopping Swine	5		
Proper use of show stick or whip	5		
<b>TOTAL</b>	<b>25</b>		

**SWINE SKILLS AND SHOWMANSHIP  
LEVEL II - LIVESTOCK EXPO**

SKILLS DEMONSTRATION	Possible Points	Score	Comments
Management questions (2)	2		
Fitting questions	1		
<b>TOTAL</b>	<b>3</b>		
<b>SHOWMANSHIP</b>			
Entering & Leaving Ring	5		
Driving/Turning Swine	10		
Stopping swine	5		
Proper use of cane or whip	10		
<b>TOTAL</b>	<b>30</b>		



**SWINE SKILLS AND SHOWMANSHIP  
LEVEL III - LIVESTOCK EXPO**

SKILLS DEMONSTRATION	Possible Points	Score	Comments
Ear Notching	5		
Management question	5		
Demonstrate how to use snare	5		
Select proper gauge & length of needle for penicillin injection	10		
Draw 5 cc penicillin into syringe	5		
Using the label to give the : Expiration date	5		
Withdrawal time	5		
Explain the purpose of deworming and what products can be used.	5		
<b>TOTAL</b>	<b>45</b>		

**References:**

4-H PORK PRODUCTION MANUAL from Cornell University

<http://ansci.cornell.edu/4H/swine/EmpireMarketHogBook.pdf>

Iowa State University Livestock Judging

<http://www.ans.iastate.edu/clubs/judging/livestock/Basicsppt.pdf>