

Domestication and Natural Behavior of Swine

Our topics for this week are:

- The domestication of swine and their introduction to the Americas.
- Natural behavior of swine and behavior of swine subjected to intense confinement.

Domesticated swine (*Sus domesticus*) are referred to as hogs or pigs depending on their size. Hogs were domesticated from wild boars about 11,000 years ago in southwestern Asia and China. They were raised for their meat, hides, bones (tools or weapons), and hair (bristles for brushes). Egyptians sowed seed in the ground that was loosened by the sharp points of hog hooves. The genome of domesticated hogs is very similar to wild hogs.

The domesticated hogs of Europe came from southwestern Asia. They were later brought to the New World by Spanish explorers. Christopher Columbus brought hogs on his second voyage to the Caribbean islands in 1493. However, it was Hernando de Soto who brought 200 pigs with him in May 1539 to the North American continent. Hogs were a supplement to game meat as de Soto and his men explored Florida and other regions of modern-day United States. Pigs could travel with the explorers because they follow for food better than they can be herded, while they ate additional food that was locally available along the way. The collared peccary which is native to the southwestern U.S. belong to a different family (*Tayassuidae*) than domestic swine (*Suidae*).

Young swine that are still nursing are called **piglets**. From weaning to 120 lb. swine are referred to as **pigs**. An older name for pigs is **shoats**. Starter pigs weigh 10 to 40 lb. Pigs between 40 and 80 lb. are feeder pigs. After 120 lb., swine are called **hogs**. Finisher hogs are more than 150 lb. and less than 220 lb. Butcher hogs are 220 lb. and above. A sexually intact male is a **boar**. Males are typically castrated before puberty and called **barrows**. Female pigs or hogs that have not had a litter are **gilts**. Once they have a litter they are referred to as **sows**.

NATURAL BEHAVIOR OF SWINE

Swine in the wild live in groups, called “sounders” of 2 to 6 sows and their pigs. The sows will often pair up for foraging and sleeping. Once young males near puberty, they are driven away by older, more dominant boars. They finish their development in bachelor groups until they are ready to challenge the dominant boars. The dominant boars tend to remain solitary except at breeding seasons.

Hogs defend themselves by pushing and biting. The bullet shape of their body is a passive means of defense that affords considerable protection from predators and adversaries. Their body shape facilitates quick escapes in thick bush and difficulty in being caught, especially if their body is wet and muddy. They move in loose groups as a herd, but if alerted to threats by a herd member’s squealing, other hogs will come to the member’s defense.

Body size strongly affects social status in hogs and pigs. The superior social rank of heavier pigs is established in early play contests. Success in pushing other pigs away from food

or other possessions reinforces social rank. Group interaction is important to hogs. Hogs cannot reach most of their body with their mouth or their hind legs. In groups, they groom each other with their mouths. Deprived of this, they spend much of their time trying to scratch themselves on objects. Grunting vocalizations are auditory social contacts that are nearly constant if moving or nursing piglets.

Hogs are adapted to temperate climates. They are most comfortable at temperatures between 55 and 85°F. During hot weather, their activities in the wild are primarily nocturnal. In daytime, they wallow in mud and rest. When cold weather occurs, their activities become more crepuscular and diurnal. When resting in cold weather, they huddle together to conserve body heat.

The natural behavior of swine is to forage for food (grubs, worms, roots, nuts) and investigate their surroundings by rooting with their snout for about 7 hours a day. Hogs have a disk-shaped snout cartilage that aids their ability to root. They root to find food and create wallowing areas to cool themselves. They are highly intelligent and require much mental stimulation to prevent self-mutilation or aggression toward other hogs. Deprived of these mental challenges, food possession becomes more important and aggressiveness to other hogs increases. They are capable of living in a wide variety of habitats, but they prefer woodland marshes that provide escape from sunburn and heat, chances to wallow in mud to control flies and other external parasites, and their favorite foods, including acorns and earthworms. They have an extraordinary sense of smell, excellent hearing, and poor vision. Boars "champ" their teeth and produce some frothy saliva containing pheromones. They mark their territory with saliva and urine.

The U.S. has become the largest exporter of pork products in the world. Most hogs in the U.S. are now raised in total indoor confinement on concrete. This prevents their primary natural behaviors, rooting and wallowing. The natural 7 hours of rooting are exchanged for 2 hours of eating from a pan or trough in a pen. Tails are docked to prevent tail biting that results from the lack of the mental stimulus resulting from rooting. The inability for baby pigs to ingest dirt from the sow's teats while nursing and root, which they normally begin to do in the first week of being born, will lead to iron deficiency anemia if iron is not administered to baby pigs as a preventive treatment. Providing straw bedding for hogs to root and chew reduces aggression, skin damage, and joint injuries. When they are prevented from rooting, they lie on their sternums more than their sides. This can be stressful since they get greater rest laying on their sides.

Crowding and confined access to food generates most aggression in hogs. Hogs in large commercial operations have been given beta-adrenergic drugs to reduce fat in their muscle. Common side effects of beta-adrenergic drugs are nervousness and aggression. Breed affects social rank in mixed groups. Large Whites are more aggressive than Hampshires which are more aggressive than Durocs. Large Whites are the most common breed used in pork production in the United States.

Now let's recap the key points to remember from today's episode:

- 1. Hogs are comfortable only between the temperatures of 55 to 85 degrees F.**
- 2. Most of the natural food for hogs is underground and requires routing of dirt to find. Inability to forage and root with their snout causes boredom and stress in hogs.**

- 3. Today's commercial production of one type of hog is risking the loss of genetic diversity in swine and can create uniform susceptibility to swine diseases.**

More information on animal handling is available in my book, *Animal Handling and Physical Restraint*, published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at: www.betteranimalhandling.com

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.