

Natural Behavior in Swine and Potential Effects of Growth Stimulants

Our topics for this week are:

- **International Recognized 5 Freedoms of Domesticated Animals**
- **Natural Environments and Behaviors of Swine**
- **A Beta-Adrenergic Growth Stimulant Used to Promote Growth in Swine**

The USA is the third largest pork producer in the world behind the European Union and China. Raising hogs on concrete floor, indoor confinement began to be popular in the USA in the mid-1960s. Today, about 70% of swine in the U.S. are raised in large herds on concrete floor, indoor confinement. The EU does not use total indoor confinement on concrete for swine, but 90% of swine are raised in indoor confinement in China.

In 1965, the United Kingdom accepted the findings of the Brambell report on intensive animal production. At the heart of the report were 5 “freedoms of intensive animal production.” The 5 Freedoms concept was adopted by the World Organization for Animal Welfare. Number 1 in the freedoms is a suitable environment and Number 3 is the ability to exhibit normal behavior. So, what is a suitable environment and normal behavior in swine?

Suitable Environments and Normal Behaviors

Swine in the wild live in small 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. Intermingling of U.S. operation owned, intense confinement hogs is mostly confined to specific age groups in larger groups than normal for inherent behavior..

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 to a herd member by squealing, other hogs will come to the member’s defense. Biting of metal confinement bars and each other is common in commercial hogs due to crowding for the species, specified feeding atypical of natural eating, and lack of mental enrichment.

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 in large indoor confinement facilities, they spend much of their time trying to scratch themselves on objects.

Hogs are adapted to temperate climates. They are most comfortable at temperatures between 55 and 85°F. When cold weather occurs, their activities become more crepuscular and diurnal. When resting in cold weather, they huddle together to conserve body heat which also bonds them to their herdmates and reduces biting.

The natural feeding 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.

Total confinement indoors on concrete 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, plus boredom and aggressiveness enhancements. 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. 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.

Aggressiveness Enhancements

Crowding and controlled access to pre-prepared food generates most aggression in hogs. Breed affects social rank in mixed groups. Large Whites, genetically an aggressive hogs, are the most common breed used in pork production in the United States.

Hogs in large U.S. commercial operations are also given a beta-adrenergic drug, ractopamine (rack-TOE-pa-mean) also called "Paylean", to reduce fat in their muscle. Ractopamine is not allowed in the EU or China, among 166 other pork-producing countries.. It is effective in stimulating lean muscle growth and reducing time to market, but there are adverse effects. Common side effects of beta-adrenergic drugs are nervousness, agitation, and aggression.

So what is your conclusion, does indoor confinement on concrete provide a suitable environment as required by the Freedoms described in the Brambell Report? Does this type of confinement, method of feeding, and administration of a beta-adrenergic drug provide the ability to exhibit normal behavior? The answer seems obvious to me.

If you have comments or you're interested in particular animal handling subjects, contact us at CBC@BetterAnimalHandling.com

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

- 1. Swine normally root for food 7 hours per day, providing nutrition, mental stimulation, relief from boredom, and reduction from aggression.**
- 2. Aggression against other hogs and self-mutilation is more common in hogs raised in large, corporation owned total indoor confined on concrete hogs than hogs raised on pasture.**
- 3. The European Union produces more pork products than the U.S. but does not allow total indoor confinement of swine nor the use of the beta-adrenergic growth stimulant, ractopamine.**

More information on animal handling can be found in my books, *Animal Handling and Physical Restraint*, *Concise Textbook of Small Animal Handling*, and *Concise Textbook of Large Animal Handling* all published by CRC Press and available on Amazon and from many other fine book supply sources.

Additional information is provided at: www.betteranimalhandling.com . This website has more than 325 past podcasts with notes on handling of dogs, cats, other small mammals, birds, reptiles, horses, cattle, small ruminants, swine, and poultry.

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.