

Odors and Animal Behavior

Our topics for this week are:

- **Sense of smell in small companion animals**
- **Aromatherapy for handling animals**
- **Managing odors that adversely affect handling of animals**

Olfactory (Smell)

The sense of smell is more acute in all domestic animals than in humans. Animals monitor the odor of urine, feces, sweat, breath, and special skin organs, such as anal glands in dogs, to identify others, assess their status in a reproductive cycle, and determine their social rank. Cologne or other pungent cosmetic odors on humans can cause animals to resist handling and restraint.

Dogs:

Dogs have the keenest sense of smell of any domestic animal. Dogs can detect odors that are 10,000 to 100,000 times fainter than what the human nose can detect. Some communications among dogs are by emitted pheromones from their body by secretions of saliva, urine, feces, and anal sacs. Dogs can be trained to detect explosives, corpses, drugs, among other odoriferous objects by using their extraordinary ability to smell.

Cats:

Cats have scent glands under the chin, at the corners of the mouth, side of the forehead, and between their toes. They also emit odors by urine and feces. Urine spraying and odor from their front pads, which is left when scratching objects, are used to mark a cat's territory. The small cheek glands, near the corners of their mouths, are used to leave odors after rubbing (called bunting) on objects, including people, that they perceive as their territory.

Reptiles and Birds:

Reptiles become excited at the smell of food. If the smell is on a handler's hands, the odor can entice a reptile to bite a hand. The respiratory system of birds does not provide many of the protections of the respiratory system of mammals against airborne insults. Birds are particularly sensitive to odors and some can be lethal to birds. Canaries have been used to monitor for harmful gases in mines.

Vomeronasal Organ

The vomeronasal, also called Jacobson's, organ is located in the roof of the mouth. It consists of two sacs that are connected to the nasal cavity by fine ducts. It is found in many mammals and all snakes and lizards. When domestic mammals smell sexual odors, many will lift their upper lip and open their mouth, a procedure called the flehmen response. The purpose of the flehmen response is to increase the opening of the ducts which carry the smell to the nasal cavity and the olfactory membrane. This enhances the detection of the odor. Cats "gape" (mouth open with tongue placed behind upper incisors) when smelling other cats' urine. Snakes smell using their forked tongue to collect particles in the air. The tongue then pulls the particles into the mouth where they are dipped into the vomeronasal pits in the roof of the mouth.

Aromatherapy for Handling Animals

In nature, odors have effects on animal behavior. Their ability to alter behavior to facilitate handling is less clear.

Pheromones:

Pheromones are chemicals used for communication by smell. Natural pheromones are well established important communicators of individual identity and reproductive status in many, if not all, species. Synthetic pheromones and essential oils have been proposed to be effective means of calming dogs and cats. Aromatherapy is a form of alternative therapy, similar to nutraceuticals, that is not required to prove efficacy to be marketed. Claims of efficacy are usually based on anecdotal statements or small studies without sufficient controls and independent evaluations that are required of pharmaceuticals. Synthetic pheromones may be more of a means of nonthreatening distraction than a mind-altering drug. Those that appear to affect cat behavior have a short duration of effects, less than 30 minutes.

Aromatherapy Agents

Nepetalactone is a volatile oil from the catnip plant, a member of the mint family. It is an attractant for about three out of four cats. The playful activity it evokes in SOME cats temporarily causes distraction from other nonthreatening stimuli.

Silver Vine, and to a less extent, Tatarian honeysuckle and valerian root contain volatile oils with similar effects to catnip on most cats.

Facial glands in cats produce a pheromone involved in bunting (facial rubbing) to mark possession. A synthetic facial pheromone of cats in an alcohol solution is a popular aromatherapy intended to calm cats, although independent controlled studies on behavior and physiologic parameters have yet shown no effect.

Dog appeasing pheromone (DAP) is a pheromone produced by the skin of the mammary gland of dogs after giving birth and during the nursing period. DAP is believed to aid in bonding pups to the mother. Synthetic DAP is an aromatherapy purported to calm adult dogs but with mixed efficacy results.

Oils from the plants, lavender and chamomile (KA-muh-mile), are proposed to have a calming effect on small animals.

Distracting Odors:

Odors from handling environments and the handler's body can be distracting, even threatening, to animals. Therefore, it is a good practice to avoid or mitigate odors when handling animals. Control measures for distracting odors can include using unscented hydrogen peroxide commercial environmental cleansers or one-half 3% hydrogen peroxide and one-half water mixture for sanitation. Avoid perfumed body products. Keep food and other animal odors off hands and clothes.

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:

- **Dogs have the best sense of smell of all domestic animals.**
- **Synthetic odors for handling animals do not have to meet any federal requirements for proof of efficacy.**
- **Animal handlers should attempt to mitigate odors that can adversely affect animal behavior.**

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 250 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.