

## Zoopharmacognosy and Your Animals

Have you ever noticed your horse, dog or cat eating a certain plant in your garden or out in the fields? Well, if you have, you may be witnessing Zoopharmacognosy. This is a term coined by Dr. Eloy Rodriguez, a biochemist and professor at Cornell University. Zoopharmacognosy refers to the process by which animals self-medicate. In this process, animals select and use plants, soils and insects to treat and prevent disease. The word Zoopharmacognosy is derived from the roots “zoo” (animal), “pharma” (drug) and “gnosy” (knowing).

I have noticed this behavior with my own animals and wondered why they would eat certain plants. Our golden retriever Midas would always eat the echinacea in my garden. Echinacea (*Echinacea angulstifolia* & *E. purpurea*) contains a number of constituents that stimulate the immune system to deal with both bacterial and viral infections. Midas was always dealing with a compromised immune system, and maybe this is why he loved to eat echinacea. Pete, my elderly and arthritic horse, would eat the yarrow (*Achillea millefolium*) in my garden. One of the constituents of yarrow is chamazulene, which is a strong anti-inflammatory. My horse Marcus went through a period of eating mullein (*Verbascum thapsus*) while out on the trail. This too was very intriguing because at the time he had a slight cough and mullein is a highly regarded herb for coughs and congestion.

And, what about that catnip (*Nepeta cataria*)? My cats love catnip; they eat, roll around in it and sometimes take naps in their little catnip garden. It is reported that 70% of domestic cats enjoy catnip. There may be two reasons cats enjoy catnip. First, it may be due to an active ingredient called nepetalactone a terpenoid. “Nepetalactones mimic a natural courtship pheromone found in male-cat urine, which is thought to stimulate a pseudo-sexual reaction”.<sup>[1]</sup> This may explain the excitement in cats when they chew a small amount of the plant. The second reason is that nepetalactones is also very effective at repelling insects and maybe this is why cats like to roll in it. It is reported that eating a small amount of catnip is not harmful but in concentrated doses it has a hallucinogenic reaction; this may explain all that animated activity a cat may portray after eating too much catnip.

A few years ago I had an amazing opportunity to work with the orangutans, gorillas and black crested macaques at the Denver Zoo through their animal enrichment program. I worked with individual zookeepers and the primates they were in charge of and designed an essential oil program for each primate.

It was truly remarkable to work with the orangutans, gorillas and black crested macaques and to see them choose what essential oil they wanted and how they wanted it. We were watching Zoopharmacognosy in action.

Some of the conditions we addressed in the animals were distrust, pain, sinus problems, digestive upsets, anger, being easily aroused and fear. Some of the essential oils that we worked with were violet leaf, rose, jasmine, fennel, basil, sweet marjoram, neroli and ginger. Working with these oils and others did result in some significant behavioral changes. Each primate has been affected in their own unique way by the use of essential oils and their zookeeper’s consistent work with them and the essential oils. This work has definitely added to their quality of life in captivity.

Many indigenous cultures would study animals and see what plants they were eating and in return would discover medicinal plants for their own use. One example of this is osha root (*Ligusticum porteri*), a plant native to the western United States and Mexico. Another name for osha root is bear medicine. The story goes that Native Americans would notice bears rolling around in this plant, eating the roots and applying a root mash to any injuries they may have had. They also noticed bears would seek this plant out when they awoke from their hibernation; the reasons for this may be for the plant's respiratory cleansing properties and to clean out their digestive systems. Osha root is known for its powerful antiviral and antibacterial agent, used for bronchial infections and sore throats. (Because of osha roots' popularity, it is now a plant at risk of disappearing.) There are many stories about indigenous cultures discovering their medicine by observing animals self-medicating themselves.

Today, wildlife biologists still observe animals in their natural habitat and find many new medicinal qualities in plants through these observations. In regards to Zoopharmacognosy:

“Observers have noticed that some species ingest non-foods, such as toxic plants, clay or charcoal, to ward off parasitic infestation or poisoning. Illustrating the medicinal knowledge of some species, apes have been observed selecting a particular part of a medicinal plant by taking off leaves, then breaking the stem to suck out the juice.<sup>[2]</sup> In an interview with Neil Campbell, Rodriguez describes the importance of biodiversity to medicine:

Some of the compounds we've identified by zoopharmacognosy kill parasitic worms, and some of these chemicals may be useful against tumors. There is no question that the templates for most drugs are in the natural world.<sup>[3]</sup>”

I teach the process of zoopharmacognosy in FrogWorks' “Working with Animals and Essential Oils” courses. Our primary focus is to teach you how to work with the animal by letting them choose the plant or essential oil they need at that time. It is amazing to watch the healing process when you give the animal a chance to choose its remedy.

1. Engel, Cindy 2002. Wild Health, p. 159

2. Biser, Jennifer A. (1998). "Really Wild Remedies — Medicinal Plant Use by Animals."

3. Biology (4th edition). N.A. Campbell, p.23 'An Interview with Eloy Rodriguez' (Benjamin Cummings NY, 1996)