Supplements for Exotic Pets

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KEYWORDS

• Alternative medicine • Supplements • Exotic pet • Herbal • Nutritional

KEY POINTS

- Animals have been choosing specific medicinal plants to treat their own diseases for as long as we can surmise. The practice of Zoopharmacognosy is discussed in detail showing that supplementation with plants has historically been documented in the wild.
- Dietary supplements are not as strictly regulated under the United States Food and Drug Administration (FDA) as prescription and over-the-counter drugs. Therefore, reputable nutraceutical companies should be committed to abiding by good manufacturing practices, choosing to work under accredited third-party certification providers.
- Vision, liver, immune, and stress supplement support are discussed because there is increasing scientific evidence of the effectiveness of these supplements in exotic species.
- It is increasingly important for the exotic animal practitioner to become knowledgeable about the various forms of complementary supplementation and research.

INTRODUCTION

This article discusses how practitioners can use nutritional and herbal supplements to support the health of exotic patients. Packaged Facts reported in 2013 that "a large share of non-dog/cat population are fish at 84.2 million, followed by birds at 11.4 million, reptiles at 3.9 million, followed by a range of other pets, including 5 million rabbits and hamsters."[1] Natural and organic pet foods, pet supplements, and other natural and organic pet supplies grew 5.2% in 2010 to reach $3.2 billion, with the animal supplement category adding $80 million in new sales to reach $1.6 billion.[2] If the most common diseases that affect exotic species are understood, then clinicians can try to prevent or alleviate disease states by providing supplements that both protect and support organ systems.

Disclosure: Dr J. Mejia-Fava is co-owner of Animal Necessity, LLC, a company that produces supplements for use in animals, some of which are discussed in this article.

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Vet Clin Exot Anim 17 (2014) 503–525
http://dx.doi.org/10.1016/j.cvex.2014.05.001 **vetexotic.theclinics.com**
1094-9194/14/$ – see front matter

Although it is accepted that food adaptations are critical to the survival of every species, it is not as readily apparent that food can also be purposefully used by animals for medicinal purposes. Zoopharmacognosy is the study of the ability of animals to recognize medicinal plants and other substances, and to ingest or otherwise apply them to their bodies to help prevent or treat disease.[3–5] Observations of animals healing themselves with natural medicinal foods have been recorded since ancient times.[3–5] Some herbs such as dog grass (*Agropyron repens*), catnip (*Nepeta cataria*), and horny goat weed (*Epimedium* spp) still carry the common names of the species using them medicinally. The term zoopharmacognosy was coined by Dr Eloy Rodriguez, a biochemist and professor at Cornell University.[5] This principle was popularized in 1987, when researchers investigated animals in the wild that were self-medicating by using the medicinal properties of plants, soils, clays, fungi, and insects.[5] Chimpanzees with diarrhea were confirmed to have intestinal parasitism with *Oesophagostomum stephanostomumto*.[5] Twenty hours after eating the pith of the *Vernonia* tree, one female's fecal excretion had lower levels of parasitism. Vernonioside B1, a compound isolated from the pith, was found to possess antiparasitic, antitumor, and antibacterial properties.[5] Other research shows that chimpanzees eat *Aspilia* leaves for their antiparasitic properties during the rainy season, because this is when parasitic larvae abound and there is increased risk of infection. The leaves are swallowed whole because they contain an oil called thiarubrine A, a compound that may decrease the ability of parasites to adhere to the intestinal wall.[4,5] The leaves also have unique Velcro-like hairs to which worms attach after passing through the digestive tract.[5] Humans use the *Aspilia* plant for a wide variety of diseases such as malaria, rheumatism, sciatica, and scurvy.[5] Other animals have used remedies for reproduction. African elephants seek a particular tree of the *Boraginaceae* family at the end of their gestation to induce labor.[5] The leaves and bark induce uterine contractions; pregnant Kenyan woman drink them in a tea to induce labor or abortion.[5] Fur rubbing has been observed in primates and bears that coat their fur with masticated plant materials as an insect repellant.[5] More than 200 species of songbird have a behavior called anting, in which they crush ants and rub them into their plumage. These crushed ants release formic acid, which is harmful to feather lice.[5]

Herbivorous and omnivorous mammals, birds, reptiles, and insects consume soil, stone, clay, and rock for medicinal purposes. The act of geophagy has been linked to alleviating diseases of the gastrointestinal tract (GIT).[3–5] Giraffes eat clay-rich termite mound soil for its detoxifying and absorptive properties. One clay mineral found in termite soil is kaolinite, which is the principal ingredient in the commercially available antidiarrheal drug, bismuth subsalicylate (Kaopectate).[5] Other reasons why animals use geophagy may be as a means to maintain proper gut pH, as a way to meet nutritional requirements, and to use sodium to detoxify secondary metabolites from consumed plants.[5] Dusky-footed wood rats have been observed to fumigate their nests by making tears in bay leaves, which release fumigating vapors that significantly reduce parasite survival.[5] Dogs commonly show plant-eating behaviors that are presumed to address a dietary deficiency of fiber, which has beneficial effects on energy metabolism, fecal characteristics, and digestive transit time.[6] The behavior of dogs eating grasses and then vomiting has been interpreted as both self-medication for gastrointestinal distress and as a form of relieving gas pressure in the stomach.[6] Cape foxes intentionally eat grass during periods of starvation to maintain digestive function.[6]

Another form of zoopharmacognosy is sponge carrying by Shark Bay dolphins of Australia. In one study, 5 sponge-carrying dolphins were found to be either solitary