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Beautiful But Dangerous: Plant Poisoning in Pets

John E. Martin
University of Pennsylvania

Beautiful But Dangerous

Plant Poisoning in Pets

Oleander, with its flowers of white, pink, red and violet, adds beauty to many surroundings, both indoor and outdoor. It may also be lethal. Like a number of other house or ornamental plants, oleander combines outward beauty with the presence of toxic principals. In the case of oleander, the leaves contain a cardioactive glycoside, oleandrin, similar in action to digitalis, but more persistent in its action, and therefore more toxic. A single oleander leaf may be fatal when consumed by children, pets, or farm animals. Fortunately, the green leaves are bitter tasting, and it is unlikely that pets such as puppies and kittens will eat them. However, dried leaves may be eaten in playfulness resulting in poisoning, marked by vomiting, diarrhea, rapid breathing, and various disturbances of cardiac rhythm.

While plant poisoning in pet animals is less common than in livestock, it can pose a perplexing problem for the animal owner and the veterinarian. The increased cultivation of houseplants and outside ornamental plants has heightened the risk of poisoning in children and pets. For many years, aspirin was the leading cause of poisoning in children, but with the advent of safety closure caps the incidence of toxicity to this common drug has decreased, and today, houseplants are the most frequent agent involved in poisoning of children under five years of age. During the period 1979-1981, the Animal Poison Control Center at the University of Illinois reported that 11.6 percent of all phone inquiries were related to plants, and 50 percent of these involved poisoning in dogs, cats, and caged birds.

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Older dogs and cats are not likely to eat plants, but puppies, and to a lesser extent kittens, may as a consequence of playfulness or boredom mouth anything within reach, including plants. Occasionally, a well meaning owner will feed caged birds seeds from wild plants, leading to poisoning. There have also been cases reported in which pet animals have been deliberately fed hallucinogenic plants.

Various toxic principals contained in plants are responsible for poisoning. These include alkaloids, polypeptides and amines, phenanthrene compounds, glycosides, oxalates, resins and resinols, and phytotoxins. Livestock, which have long been exposed to these agents have developed elaborate detoxifying systems which offer some protection against poisoning, but pet animals have no such protective mechanisms, and are therefore more vulnerable.

In addition to oleander, some common house or ornamental plants involved in poisoning of pets are: *Prunus Species*. These colorful beans are illegally imported to make necklaces and rosaries, and the ingestion of beans on which the seed coat has been cracked can cause severe gastroenteritis. *Castor Beans*, which are



used for the commercial production of castor oil. Castor bean plants are sometimes grown as ornamentals, and the ingestion of seeds on which the coating is broken, as happens at maturity, can cause poisoning in pet animals.

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The toxic principal is ricin which produces profuse hemorrhagic diarrhea, possibly convulsions, marked thirst, and abdominal pain. When the plant is used as an ornamental, it is advisable to snip off the flowering head to guard against ingestion by pets. *Prunus Species*, which includes several varieties of cherry, apple, apricot, and almond trees. The seeds, twigs and bark of these trees contain a cyanogenic glycoside, which when hydrolyzed, produces cyanide. Livestock may be poisoned by eating wilted leaves, and dogs feeding on garbage or on the residue from cider production may suffer acute poisoning. Cases of toxicity have been reported in dogs eating the bark of cherry trees, and pet birds have been poisoned through eating apple seeds. Poisoning runs a rapid course, with death occurring in one or two hours, or sooner. Clinical signs include excitement, followed by depression, incoordination, and convulsions. Blood of poisoned animals is an unnatural bright red. *Nettle*s, which include the stinging nettle, and bull nettle. These have hairs which when rubbed off the plant release acetylcholine, a compound which stimulates the parasympathetic nervous system. The most common type of poisoning is observed in hunting dogs which encounter the nettles in marshy areas. Clinical signs include excessive salivation, irritation of the mouth, leading to frequent pawing, muscular weakness, and tremors. In 1963, a fatal case of poisoning due to the bull nettle was reported in a six-year-old child in the Philadelphia suburbs. *Poison Ivy*, whose toxic principal, an oil resin, may be carried on the coat of animals and result in poisoning in humans. Apparently animals do not

exhibit the severe allergenic response seen in man.

These are a few plants which have been involved in reported poisonings. There are a number of others which are potentially toxic including caladium, foxglove, lily of the valley, snowdrop and iris. For those interested in further information, Dr. Murray E. Fowler, School of Veterinary Medicine, University of California at Davis, has prepared a detailed brochure titled "Plant Poisoning in Small Companion Animals." This is published by the Ralston Purina Co., Checkboard Square, St. Louis, Missouri, 63188.

Many of the plants involved in poisoning of pet animals induce vomiting after ingestion, and this reduces absorption of toxic principals. However, in all cases of suspected poisoning the pet owner should call his/her veterinarian and attempt to specifically identify the suspected plant.

Students in the School of Veterinary Medicine receive a thorough indoctrination in the toxicology of plants. The course is under the direction of Drs. David Kowalczyk and Ara Der Marderosian, and instruction includes a visit to the Jenkins Arboretum, examination of 600 slides showing poisonous plants, viewing videotapes of actual cases of plant poisoning, and lectures. The slide set used for instruction is considered to be one of the best in the country. Students are required to identify fifty-five poisonous plants and have knowledge of their poisonous principals, clinical signs of toxicity, and treatment of poisoning.

The Jenkins Arboretum, located in Tredyfrin Township, not far from the Devon Horse Show Fairgrounds, is a unique facility of forty-six acres. It is divided into sections, each of which have been numbered on a map and identified with the types of plant located in each plot.

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Over seventy toxic plants are found at the Arboretum which is open to the public Wednesday through Sunday. For information, call Mr. Leonard Sweetman, (215) 647-8870. The slide set used by students in studying plant toxicology is also available for public use. Call Dr. David Kowalczyk, (215) 898-6503.

As is the case with all potential poisonous materials, keep house plants and seeds out of the reach of small children, puppies and kittens. When poisoning is suspected, call your veterinarian!



Dr. John E. Martin

Poison Information Hotline

An Animal Poison Control Information Center has been established at the University of Illinois. It provides antidotal and other information on a 24-hour basis. It is staffed by veterinary toxicologists and can be reached by calling 217-333-3611.