Animal Toxicology Hotline.

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We live in an age of intensive agricultural and industrial production. To sustain high levels of productivity, millions of tons of toxic metals, pesticides, fertilizers, feed constituents, drugs, and chemicals are produced each year. In addition, plants, molds, and bacteria produce many natural toxins.

One of the major questions facing us today is how to assess the quality of the environment and its relation to our health and well-being. If harmful consequences from toxic materials are to be prevented, we must acquire and disseminate new knowledge about their biologic effects as quickly as possible. Through the recently established Veterinary Toxicology Information Service, the College of Veterinary Medicine at the University of Illinois is helping in the effort.

Animals as Monitors

For thousands of years people have to some extent relied on animals to monitor the quality of the environment. For example, coal miners used to take caged canaries into coal mines. More vulnerable than humans, the birds were quickly overcome by any odorless, toxic gases that might drift into the mine shaft. With this simple yet effective warning system, miners had time to race to safety when threatened by poisonous gases.

Livestock, pets, and wildlife are our modern-day canaries. Animals breathe the same air we do, drink the same water, and eat from the same food supply. They are also exposed to the same chemicals in the environment, are subject to many of the same disease organisms, and experience similar difficulties from crowding. Close observation of animals is helpful in predicting whether adverse environmental conditions are likely to affect humans, but it is important for preventing the loss of valuable animals as well.

Toxicology Hotline

In September, 1978, the College of Veterinary Medicine established a hotline to offer diagnostic assistance with animal poisoning problems. At any time—24 hours a day—practicing veterinarians, county agricultural Extension advisers, animal owners, and others can obtain information and advice about known or suspected cases of poisoning. This service is provided without charge.

Through an answering service a veterinary toxicologist is on call during regular office hours, evenings, weekends, and holidays. The Veterinary Toxicology Information Service is staffed on a rotating basis by Drs. V. R. Beasely, D. J. Blodgett, R. V. Chalam, L. C. Davis, J. C. Haliburton, and J. R. Wilcke. The hotline telephone number is 217-333-3611.

The service also maintains a team ready to investigate suspected or potential poisoning problems anywhere in Illinois. When telephone advice and consultation seem inadequate, the team of investigators, composed of a toxicologist, a pathologist, and a veterinary clinician is dispatched to assist the attending veterinary practitioner in making a diagnosis and resolving the problem.

The toxicology hotline and its supportive services are maintained cooperatively by the Department of Veterinary Biosciences and the laboratories of Veterinary Diagnostic Medicine at Urbana, and by the Illinois Department of Agriculture Analytical Toxicology Laboratory at Centralia.

First Year's Results

During the 12-month period from September 1, 1978, to August 31, 1979, the service handled 414 calls about suspected poisonings or requests for information. Slightly more than half of the calls (211) came from within Illinois; the remainder of the inquires came from 37 other states, two from Canada, and one from Switzerland.

Almost three-fourths (300) of the inquires involved animals and even a few humans actually exposed to toxic materials, or animals with clinical signs of poisoning. Only individuals were involved in dog and cat cases, whereas herds or flocks were affected in livestock and poultry cases.

Incidence by species is given in Table 1. The most commonly reported causes of poisoning suspected in five of these species fall into several categories:

Dog (108 incidents):
pesticides (37%), e.g., rodenticides, insecticides, herbicides, wormers
drugs and foreign materials (19%), e.g., antifreeze, ground glass, mink oil, linoleum, household cleaners, skin

Reprinted from ILLINOIS RESEARCH, University of Illinois Agricultural Experiment Station, Spring, 1980. Vol. 22, No. 2.

Table 1.—Number of Hotline Calls About Actual or Suspected Poisoning Problems, Sept. 1, 1978, to Aug. 31, 1979.

	Number	Percent
Dog	108	36
Cattle (dairy and beef)	75	25
Cat	25	8
24	8	
Horse	23	8
Sheep and goat	10	3
Bird	3	1
Other (mink, rabbit, squirrel, guinea pig, fish)	7	2
Human (exposed to animal drugs)	9	3
Water and feed contamination	16	5
TOTAL	300	...

ointments, drugs prescribed for animal's owner
metals (8%), e.g., lead, arsenic
toxic plants and molds (8%)
feed and water contamination (4%)

Cattle (75 incidents):
pesticides (36%)
toxic plants and molds (13%)
feed and water contamination (9%)
metals (8%)

Cat (25 incidents):
pesticides (28%)
drugs and foreign materials (24%)
toxic plants (12%)

Swine (24 incidents):
toxic plants and molds (33%)
feed and water contamination (29%)
pesticides (21%)
metals (8%)
foreign materials (4%)

Horse (23 incidents):
toxic plants and molds (39%)
pesticides (17%)
feed and water contamination (13%)
metals (9%)

During the same 12-month period the toxicology service conducted twelve field investigations of livestock losses in Illinois. These investigations are summarized by location, species, and type of problem in Table 2.

Program First of its Kind

Establishment of this program is apparently the first time that such a service has been attempted for animals. The response from Illinois and elsewhere indicates a need for the program. Moreover, half a dozen human poison control centers in various states have requested permission to refer animal poisoning problems to the toxicology service here at the University of Illinois.

Representatives of the Food and Drug Administration and the U.S. Department of Agriculture have expressed an interest in establishing a nationwide animal poison control service. Such a program could be set up through a communications network among state veterinary diagnostic laboratories.

Along with the emergency information and investigation service, we are developing a file of substances that are toxic to animals, together with toxicity data and recommended antidotes. Eventually this file will contain more than 30,000 entries and will enable us to respond quickly to many different kinds of poisoning episodes.

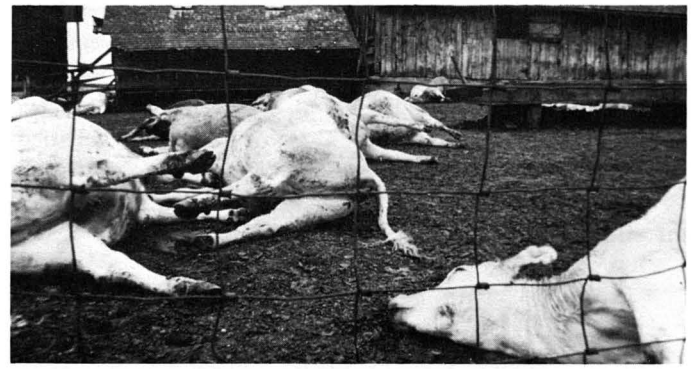

Table 2.—Illinois Field Investigations as Follow-Up to Hotline Inquires, Sept. 1, 1978, to Aug. 31, 1979.

Location	Problem
Villa Grove	Goat losses: copper deficiency
Sheffield	Beef and dairy cattle losses: near waste chemical disposal area
Martinsville	Beef cattle losses: while snakeroot poisoning
Piper City	Beef feeder losses: atypical interstitial pneumonia
New Lennox	Horse deaths: moldy corn; leucoencephalomalacia
Galesburg	Beef cattle losses: rumen intoxication on corn silage
Wyoming	Dairy cattle problem: contaminated well water and treated seed corn
Greenville	Dairy cattle losses: salt contamination of water near oil wells
Breeze	Dairy herd problem: aldrin-dieldrin contamination
Flannigan	Beef cattle losses: arsenic poisoning
Roseville	Sheep losses: trefoil pasture poisoning
Princeton	Cattle losses: unidentified Kidney problems