

A Treatment for Tansy Mustard Poisoning

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Tansy mustard, *Descurainia pinnata* (Walt.) Britt., is a native annual or winter annual weed which is widely distributed throughout the southern United States. In the arid regions of the Southwest, this plant is frequently the only, or one of the few, sources of palatable green forage available to range livestock during the late winter and early spring, provided surface moisture has occurred at this time. Early in the growing season large quantities of the plant may be consumed without ill effects. Later in the season, either through cumulative toxicity or the appearance of a toxic substance in the mature plant, abnormal signs occur in animals ingesting the weed. The poisonous principle responsible for the signs has not been identified.

The clinical signs of poisoning with tansy mustard are depression, impaired vision, and loss of control of the tongue and other muscles of mastication and deglutition. In appropriate species there is ruminal atony. In goats and horses, spasmodic contractions of the cervical muscles occur at intervals to produce a bobbing of the head.

The atonic rumen is unresponsive to the commonly used stomachics and stimulants. The recommended treatment has been limited to repeated administration by intubation of water and of solutions or suspensions of feed concentrates to maintain the animal until the toxic effects have dissipated. This regime must be extended over a long period and, when assumed by untrained personnel, it carries the hazard of an induced foreign-body pneumonia.

For the past three years a treatment consisting of intravenously administered ethanol has been successfully employed in cases of "tansied" animals in south-central New Mexico. The efficacy of the treatment is dramatic in most cases with a single injection relieving all signs except those involving visual acuity. The dosage of ethanol employed is one ml of 95% ethyl alcohol per 10 pounds body weight, usually diluted in 250 to 500 ml of lactated Ringers solution or a similar preparation. Some ranchers, in medicating their own stock, have given an undiluted bolus of "mailine Everclear" without fatal results. The obvious advantage of the more dilute solution is a greater control over possible overdosage in some animals; a swaying in response to a firm push against the withers will generally indicate that a sufficiency has been reached.

This treatment was based on work done by Foote, Farley, Pearson, and Kliever using ethyl alcohol for atony of the rumen in cattle with anaplasmosis. They did not advance any theory as to the reason for the apparent success for this treatment. In poisoning with

tansy mustard, the symptomatology suggests possible involvement of cranial nerves. The effectiveness of ethanol in this condition may be associated with the acetaldehyde resulting from the metabolism of alcohol entering into the formation of coenzyme-A and the eventual production of acetylcholine. Since neurotransmitters other than acetylcholine are involved in function of the optic nerve, this may explain the failure to correct the visual abnormalities.

References

Parker, K.F.: An Illustrated Guide to Arizona Weeds, University of Arizona Press, Tucson, Arizona, 1972. - Kingsbury, J. M.: Poisonous Plants of the United States and Canada, Prentice-Hall, Englewood Cliffs, N.J., 1964. - Foote, L., et al.: Intravenous Use of Ethyl Alcohol and Various Drugs in Treatment of Acute Anaplasmosis, North American Veterinarian, 30, 497-503, 1949. - Goodman, L. S., and Gilman, A.: The Pharmacological Basis of Therapeutics, Macmillan, N.Y., 1970.

Practice Tip

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I have improvised a set-up for giving i.v. solutions to weak calves, etc., that has worked fine for me.

Use a one-gallon plastic jug with holes punched in the bottom—opposite side from the handle—a ½ inch metal punch heated slightly works fine for punching a hole). Screw in an old-type valve stem (core removed). The rubber gaskets make it leak-proof. Attach 6-inch rubber tubing to the stem. At the other end insert a Cutter Saftiset i.v. injection set. A length of elastic thread taped to the tubing will keep the calf from getting tangled if it decides to get up. Hang the jug above the pen. These are easy to refill and large enough to do a good job.

