SALT POISONING IN SHEEP AND SWINE

by
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Every year the North Dakota Agricultural Experiment Station veterinary diagnostic laboratory receives a number of inquiries regarding salt poisoning in animals. Often the information furnished is rather indefinite and the supposition of the owners is that the "salt" contained some poisonous material.

Udall (1) in summarizing the literature on salt poisoning states, "The fatal dose of salt given by Fröhner for cattle is from 3.3 to 6.5 pounds; for horses 4.4 to 6.5 pounds; and for sheep and swine ½ to 1 pound."

In order to obtain more definite information on the toxicity of salt (sodium chloride) for lambs and pigs varying amount of common salt was given to the animals as a brine by means of a stomach tube. Drinking water was available to the animals during the course of the experiment.

Table 1.—Toxicity of Salt for Swine

Pig No.	Body Weight in pounds	Grams salt given	Grams per pound body weight
1	32	16	0.5
2	28	14	0.5
*3	15	15	1.0
4	25	25	1.0
*5	14	21	1.5
*6	22	44	2.0

*These animals all vomited some of the brine in less than 10 minutes.

Pig No. 6 died 18 hours after dosing. The following lesions were observed: Heart distended with blood; kidneys and spleen dehydrated and shrunken. Urinary bladder empty. Stomach congested at pyloric end, the remainder of the stomach white and contained at least a pint of mucus. Catarrhal gastro-enteritis. Large intestines full of fluid containing some blood.

In this trial it was found that 1.5 grams of salt per pound body weight did not kill swine but that 2.0 grams per pound did. A 30 pound pig would thus be able to eat an ounce and a half of common salt without a great deal of danger provided plenty of water were present.

A trial with lambs is summarized in Table 2.

Table 2.—Toxicity of Salt for Lambs

Lamb No.	Body Weight in pounds	Grams salt given	Grams per pound body weight
1	58	60	1.0
2	57	120	2.1
3	55	240	4.3

(1) Udall, D. H. 1947—The Practice of Veterinary Medicine, published by the author, Ithaca, New York.

Lambs 2 and 3 both died while lamb 1 showed no evidence of illness. The symptoms shown by these lambs indicated blindness, intense nervousness, diarrhea and eventual collapse. Both died within 24 hours after being given the salt.

The toxic dose for sheep appears to be approximately the same as for swine.

Many farmers report that swine frequently die from drinking brine used in curing meat. In these cases the deaths are in all probability due to nitrate and nitrite poisoning since these chemicals are used in meat curing and are much more toxic than common salt.

Salt poisoning in farm animals appears to be the result of intense salt hunger and the furnishing of inadequate amounts of water.

Mead Industry Revived

An industry of interest to beekeepers and historians has recently been revived in England. This is the commercial production of mead from honey. We have to go back at least 500 years to find mead being made except as a family activity. The new enterprise is located at Gulval, Cornwall, near the southwest tip of the island. An old mill driven by water power has been renovated and furnishes housing for the mead house. Electric power is supplied locally. The building has seven floors, and operation is on a gravity-flow basis. The raw material, honey, comes from apiaries in Cornwall, from Australia, and various English sources.

Two years or more are necessary for the various operations involved, which include extraction, fermentation with yeast, refining and maturation. The product is finally filtered and bottled. The fermentation vats are of oak. The honey used varies from the protein-rich heather honey produced by the Benedictine monks of Buckfast Abbey in Devon and the Salisbury plain clover honeys around Stonehenge to the more highly flavored Australian "light amber" types.

The best vats of mead are retained for wines, while the remainder go into brandy. This brandy is used for mead liqueurs by the addition of aromatic herbs which are included in medieval formulas for gruit. Mead usually requires about 350 lb. of honey per 100 gallons. Other fermented drinks take 550 lbs. The new plant will produce some 30,000 U. S. pints per month. Mead House also makes pyment and cyser of which Chaucer wrote, and melomel, a Roman mead not manufactured since the time of Nero.

Abstracted from "Mead Industry Revived" by Lt. Col. G. R. Gayre, Chairman and Managing Director, Mead Makers Limited. FOOD INDUSTRIES 20 (11): November, 1948. Abstracted by R. H. Harris, Cereal Technologist.