

## COBALT IN ACETONEMIA, A CASE REPORT

by

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During the past few years there has been a gradual accumulation of information on the function of cobalt in animal metabolism. It has been known for a long time that cobalt stimulates the production of red blood cells. Its use in certain types of anemia has been a common practice.

The necessity of cobalt for sheep was found by Underwood and Filmer (1) in Australia. Later Thompson and Ellis (2) showed that cobalt acted in the rumen in aiding the micro-organisms to produce some of the vitamins of the B complex. In numerous case reports and trials at this station the addition of cobalt to the rations of sheep and cattle has caused an increase in feed consumption. As a general recommendation the addition of cobalt to the ration was made in 1946 (3).

Acetonemia or ketosis is a disease of cattle that is characterized by loss of appetite, rapid loss of weight, sometimes nervous symptoms and the elimination of acetone or ketone substances in the urine, milk, and breath. These ketone bodies are usually found also in ewes suffering from pregnancy disease.

Ketone bodies may be produced experimentally by simply withholding feed from animals (Roderick and Harshfield (4)).

The evidence suggests that in certain cases both in sheep and cattle that either a deficiency in cobalt or vitamin A may cause such a lack of appetite that the animals develop ketosis.

This case report is of particular interest since ketosis is frequently encountered in cattle in this region during the late winter and early spring. On April 14, 1948, a client of Dr. R. W. Bernhardt of Enderlin, North Dakota, submitted a sample of milk for diagnosis. The cow, according to the owner and the veterinarian, presented a typical picture of acetonemia. The milk was found to contain large amounts of acetone. A treatment of cobalt chloride approximately 1 gram per day for three days was instituted. The acetonemia cleared up within a week. In most cases of acetonemia the course is very prolonged.

There is evidence to show that acetonemia may be produced in cattle fed rations low in carotene (vitamin A), Patton (5). It is not suggested from this single case report that all cases of acetonemia will respond to cobalt therapy. It is advised, however, that all cattle and sheep be fed rations containing ample amounts of both carotene and cobalt. If cobalt and vitamin A are both present the two most likely etiological factors are supplied (6), since Henderson has shown that some cases of acetonemia respond to cobalt therapy.

It is suggested that in this area all minerals fed to cattle and sheep be supplemented with one ounce of cobalt carbonate to each 100 pounds of common salt or other mineral supplement.

If more than the above recommended amounts of cobalt are fed there is some danger of poisoning.

### Bibliography

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## PASTURING OF MATURE CORN WITH COWS AND YOUNG STEERS

by

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The practice of turning grass-fat cattle, usually dry cows or yearlings, into a field of mature corn has been carried on in western North Dakota for a number of years. Under normal conditions cattle sold from these corn fields would find their way through market channels to feed lots in the Corn Belt where they would be finished into slaughter cattle. Operators usually expect at least \$1.00 per hundredweight margin in pasturing market cattle in a corn field, in addition to a substantial gain in weight.

### Some Advantages in Pasturing Corn

From an agronomic viewpoint the pasturing of corn has several important considerations. According to tillage trials at the Dickinson Experiment Station over the last 40 years, grain crops following corn in a rotation produce about 85% as much as the same crops following summer fallow. Grain crops following corn yield about 10% more than on spring plowed stubble. Where the corn is pastured by cattle or sheep, fertilizer in the form of manure is well distributed over the field at the rate of approximately 0.65 tons per animal unit each month\*. Each acre of corn will carry a mature cow for two times the number of days an acre yields in bushels of corn\*\*. Therefore under most corn pasturing conditions in western North Dakota between one-half and one ton of manure per acre would be deposited on the land. In addition to the added fertilizer, corn pasturing results in stalks being left on the field to hold drifting snow during the winter. This will provide additional moisture for the following year's crop. The harvesting of corn by pasturing cattle greatly reduces labor and equipment costs for this operation.

\*"Morrison's Feeds & Feeding", F. B. Morrison, 20th Edition.

\*\*"Beef Cattle", Roscoe R. Snapp, 3rd Edition.