

North Dakota Beef Commission Calf Scour Study 1975-77

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Calf scours continues to kill more calves in North Dakota than any other calfhood disease. Losses appear to be the greatest in years of bad weather during and right after calving time. Other Northern states and Canada have had similar experiences.

In 1975 the North Dakota Beef Commission requested a study be made of calf scour losses. This resulted in a statewide project between the North Dakota Beef Commission, Cooperative Extension Service, veterinarians and livestock producers in selected areas of North Dakota, and the North Dakota Agricultural Experiment Station.

Twelve different areas in North Dakota were selected for sampling. The county extension agents in each of these areas invited from 10 to 15 livestock producers to participate in this survey. A veterinarian from each of the areas was contacted and asked to participate.

Data were collected from 86 herds of cattle, involving a total of 9,877 cows, in 1975. Records were kept on these cows and their calves concerning breeding, feeding, and management, as well as disease incidence and methods used to control calf scours. Data were collected on 9,900 cows in 1976 and 8,967 cows in 1977.

Detailed information was gathered on: breeds and crossbred combinations; the need for calving assistance at birth; the vigor of each calf at birth; management, including use of artificial respiration, calving pens, and artificial heat; the incidence of calf scours; when scours occurred; calf death losses generally; death loss by days after birth; the month scours was diagnosed; death loss from scours each year; the incidence of scours within herds; relationship of calf scours to calving ease; effect of scours on calf vigor; effect of scours on management items; incidence of scours by days and weeks after birth; incidence of scours in relation to cow age; the effect of breeding and scours and the use of electrolytes to treat calves with scours.

Scours were reported in over 21 per cent of the calves dropped in 1975 (Table 1). This compared to only 7.4 per cent in 1976 and 6.6 per cent in 1977.

Weather influenced the incidence of scours. The calving season of 1975 was characterized by severe weather, including long periods of sunless days, while the weather in 1976 and 1977 was more ideal for calving (Table 2). Overall death loss was calculated to be 8.2 per cent in 1975 and approximately 3.7 per cent in 1976 and 1977. More severe weather in the spring of 1975 compared to either 1976 or 1977 increased the losses due to calf scours and to calves freezing to death. This relationship is documented in Table 2, which compares the three years on the occurrence of scours and its association with two weather factors—snowfall and temperature.

In 1975, when the average temperature in North Dakota during February, March and April was below normal (3.1°F), the incidence of scours was greater than in either 1976 or 1977 when the average temperature was above normal (4.4°F and 13.3°F).

Average snowfall in 1975 was approximately 4 inches greater than in either 1976 and 1977. One major difference among the three years was that there was very little, if any, snow on the ground in April of 1976 and 1977 compared to an average depth of 16 inches in 1975. Approximately half of the calves are born in April.

The data for each county do not follow an identical pattern, but the incidence of scours appears to be closely related to temperatures and snowfall. Similar relationships have been published from a Canadian study.

Research work reported to date would indicate that management is a very important factor in the prevention of scours. A number of different treatments have been used by producers after scours has been contracted, but it appears that results are variable.

In the last two years of the study, an attempt was made to gather information on the use of electrolyte

Table 1. Calf Scours

ITEM	1975%		1976%		1977%
No Scours	78.4	21.6	92.6	7.4	93.4
Mild Scours - No Treatment	1.9		0.4		0.7
Mild Scours - Treated	12.9		4.6		4.3
Severe Scours	4.5		1.2		1.6
Relapse Occurred	2.2		1.2		0.1
					6.6

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Table 2. Incidence of scours by counties with average snow depth and temperature for February, March and April

	1975			1976			1977		
	AVERAGE SNOW DEPTH (IN.)	AVERAGE TEMP. (°F)	SCOURS INCIDENCE (%)	AVERAGE SNOW DEPTH (IN.)	AVERAGE TEMP. (°F)	SCOURS INCIDENCE (%)	AVERAGE SNOW DEPTH (IN.)	AVERAGE TEMP. (°F)	SCOURS INCIDENCE (%)
Barnes	14.7	19.0	17.7	6.0	28.9	7.6	7.0	31.3	13.1
Bowman	16.0	23.0	34.7	4.8	34.5	2.7	8.7	36.7	22.6
Griggs	10.3	22.3	36.7	7.3	30.2	5.4	8.3	33.7	5.5
Kidder	13.3	23.3	11.5	6.7	32.0	5.1	5.3	36.0	9.9
Logan	11.0	22.2	30.7	7.7	31.0	17.0	7.6	34.7	11.5
Ransom	10.3	22.9	19.5	6.0	33.5	2.5	6.3	35.3	3.5
Stark	18.7	22.6	20.4	3.3	33.4	3.3	6.3	35.3	5.7
Stutsman	16.7	22.1	29.5	5.3	31.3	6.5	5.0	34.3	8.5
Walsh	7.7	20.2	9.6	12.3	28.0	2.4	6.0	34.0	1.8
Ward	12.3	20.7	12.1	9.3	29.8	1.6	2.8	34.3	5.7
Wells	7.0	23.2	22.5	7.3	31.0	16.6	3.0	34.7	7.4
Williams	12.7	23.2	16.5	5.7	31.6	5.2	2.0	36.7	1.2

treatments in the treatment of scours. A summary of this information is presented in Table 3. The number of calves treated in this particular manner is limited, so this information is preliminary at best. Four different methods of providing electrolytes to the calf are available, but information on only two is presented in this table as the number of calves treated by injections under the skin or by intravenous treatment was very limited.

After visiting with a number of the producers who used electrolytes, the one factor that appeared to be present in all herds was that calves given electrolytes were considered very sick and the probability of their survival was small. Looking at the death loss by itself (17-23 per cent) indicates a relatively high loss of calves, but if it were to be assumed that the majority of animals would possibly have died without treatment, then saving approximately 75 per cent of the calves would be a recommended management practice.

Data were also collected on the effect of isolation of the calf from the cow during the treatment period. Limited information from this study would indicate that

some of the producers had difficulty in returning the calf to the cow after a treatment period. The calf probably consumes very little milk during the period of time that it is seriously ill with scours. Therefore, it appears that it would be satisfactory to treat the calf while with the cow.

Table 3. Electrolyte Summary Data

ITEM	TREATMENT		
	Stomach Tube		Bottle/Nipple
	1976	1977	
Number of calves treated	57	44	18
Number herds	13	7	3
Amount per treatment (qts)	1.5	1.4	0.8
Range (qts)	1-3	1-2	0.5-1.5
Average number of treatments	4.0	3.3	5.8
Total given (qts)	6.1	4.6	6.2
Hours between treatments	8.7	8.4	9.1
% Death loss	23	23	17