

Poloxalene as a Bloat Preventative for Beef Steers
Grazing Immature Alfalfa (Project 623)

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Poloxalene has proved to be an effective agent to prevent legume bloat in cattle, however, intake of the compound at regular intervals during the day is important. Intake twice daily at approximately 12-hour intervals has been shown to control bloat. This presents a management problem with beef cattle under most grazing conditions. This trial tested the effectiveness of poloxalene administered to beef cattle grazing immature alfalfa in a molasses-salt block¹ and as "Bloat Guard"² mixed with rolled sorghum grain fed free choice in a self feeder.

Procedure

Three plots consisting of two acres each were fenced and four Hereford steers were placed in each area. One plot served as a control with no bloat preventative agent. Steers in the remaining plots received poloxalene, one from a molasses-salt block; the other as a mixture of "Bloat Guard" and rolled sorghum grain from a self feeder. The blocks contained 30 grams poloxalene per pound, and 10 grams of "Bloat Guard" was added per pound of rolled sorghum grain. Control and self fed lots contained molasses-salt blocks containing no poloxalene. Molasses-salt blocks provided the only source of salt.

The trial was started in June, but due to a tornado which destroyed the pens and equipment and hot dry weather which reduced alfalfa growth and made it necessary to feed all the steers; therefore, information was not recorded until August 17, 1966. The steers had been on their respective treatments some time before phase 1 (table 15) started. Both steers and treatments were switched at 14-day intervals as indicated in table 15.

The steers were checked each morning and evening for bloat and rated according to the bloat scale presented in table 14.

Results

Poloxalene in a molasses-salt block most successfully prevented bloat in this trial. As shown in phase 1, where the animals were already accustomed to the self feeder, there were no indications of bloat. The steers

1. Molasses-salt blocks containing 0 and 30 grams poloxalene per lb. were provided by A.E. Staley Mfg. Co., Decatur, Ill. Blocks contain 20% salt and 70% cane molasses impregnated with soybean mill feed.
2. "Bloat Guard" provided by Smith Kline and French Laboratories, Philadelphia, Penn. "Bloat Guard" contains 53% poloxalene.

ate large amounts of grain which apparently added to the bloat problem. Further studies attempting to limit grain intake with salt are planned.

The information in table 15 also shows variation in bloat susceptibility among steers within a lot. Some steers appeared slightly bloated most of the time while others would bloat less often but more severely.

No steer died or was treated by a veterinarian but the steers not receiving poloxalene or "Bloat Guard" often bloated enough to cause concern from a practical standpoint.

Table 14
Description of Scale Used in Assigning Bloat Scores¹

Score	Description
0	No bloat - No distention in left paralumbar fossa
1	Slight - Slight distention in left paralumbar fossa; "puffy"
2	Mild - Marked distention in left paralumbar fossa; well rounded out between hip and rib on left side; little or no distention on right side.
3	Moderate - well rounded out on left side, drumlike; full on right side; restless
4	Severe - Both sides badly distended; left hip nearly hidden; skin tight; defecation; urination; incoordination; protruding annus; mild respiratory distress
	Terminal - Extreme abdominal distention; severe respiratory distress; cyanosis; prostration; death unless treated

¹Subjective scale for bloat evaluation as outlined by R. H. Johnson et al. 1958. J. Animal Sci. 17:894.

Table 15
Effectiveness of Poloxalene for Controlling Bloat in Steers Grazing Immature
Alfalfa. August 17 to September 28, 1966 - 42 days.

Phase 1 ¹ (14 days)	Alfalfa plot											
	1 "Bloat Guard" in feed				2 Poloxalene block					3 Control		
Treatment	1	2	3	4	5	6	7	8	9	10	11	12
Steer no.	0	0	0	0	2	3	3	1	0	12	12	8
Incidence of bloat ²	0	0	0	0	2	1	1	1	0	3+	3+	3
Highest bloat score ³	0	0	0	0	2	1	1	1	0	3+	3+	3
Av. bloat score ⁴	0.0	0.0	0.0	0.0	1.5	1.0	1.0	1.0	1.0	1.4	2.3	1.6
Phase 2 (14 days)	Control				"Bloat Guard" in feed					Poloxalene block		
Treatment	5	6	7	8	9	10	11	12	1	2	3	4
Steer no.	10	4	13	8	2	10	8	0	0	4	0	0
Incidence of bloat ²	3	2	3+	2	2	2	2	0	0	1	0	0
Highest bloat score ³	1.6	1.3	1.5	1.6	1.5	1.4	1.4	0.0	0.0	1.0	0.0	0.0
Av. bloat score ⁴	Poloxalene block				Control					"Bloat Guard" in feed		
Treatment	9	10	11	12	1	2	3	4	5	6	7	8
Steer no.	0	0	7	0	9	12	7	3	10	0	16	2
Incidence of bloat ²	0	0	10	0	2	2	2	2	3	0	3	1
Highest bloat score ³	0.0	0.0	1.0	0.0	1.2	1.3	1.4	1.3	1.8	0.0	1.2	1
Av. bloat score ⁴	Control				Poloxalene block					"Bloat Guard" in feed		
Treatment	98				20					48		
Incidence of bloat ¹	3+				2					3		
Highest bloat score ²	1.38				0.54					0.69		
Av. bloat score ³												

1. Steers had been on treatments prior to phase 1.
2. Checked twice daily and counted twice daily.
3. Refer to table 14 for explanation.
4. Calculated by dividing number of times bloated into sum of bloat score for each phase.