EFFECT OF LASALOCID AND LENGTH OF MORNING GRAZING ON WEIGHT AND SHRINK OF STEERS GRAZING BROMEGRASS PASTURES

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Summary

A total of 72 mixed breed steers from two sources was used in an experiment to determine the effect of lasalocid and length of morning grazing prior to weighing on weight and shrink of steers grazing smooth bromegrass pastures. Steers were divided into eight groups and weighed at either 6, 7, 8, or 9 a.m. on 4 separate days. Half of the steers received a control mineral mixture and half received a mineral mixture containing lasalocid. Weights of purchased steers having an excitable disposition were not affected (P>.10) by length of morning grazing prior to weighing. However, weights of steers raised at the Southeast Kansas Branch Experiment Station (SEKES) increased with length of morning grazing. Steers allowed to graze for 3 hours before morning weighing had the lowest (P<.05) total % shrink and total % shrink/hour by 3 p.m. Lasaloid did not affect shrink. Using these figures, cattlemen could add additional weight to cattle by simply allowing them to graze longer before gathering them for sale.

(Key Words: Shrink, Steers, Grazing Time, Marketing.)

Introduction

Cattle generally graze for 3- to 4-h periods beginning at daybreak and prior to sunset, and for 1- to 2-h periods scattered throughout the day. In a fall-grazing study on smooth bromegrass at the Southeast Kansas Branch Experiment Station (SEKES), steers allowed to graze in the morning for 3 h before weighing were 16 lb heavier than those weighed as the morning grazing period began. This study was conducted to determine the effect of lasalocid and length of morning grazing prior to weighing on weight and shrink of steers grazing smooth bromegrass pastures in the summer.

Experimental Procedures

Forty purchased, mixed breed steers and 32 Simmental × Angus crossbred steers from the SEKES herd were allotted by source to one of eight, 10-acre, smooth bromegrass pastures. Within each cattle source, steers grazing two pastures were offered a control mineral mixture and steers grazing the two remaining pastures were offered a mineral mixture containing lasalocid (600 mg/lb). Steers were allotted to their respective pastures on June 3 and had grazed smooth bromegrass for at least 30 days prior to starting the study. Steers were allowed free access to water and their respective loose mineral mixture throughout the study.

All steers were removed from pasture on the afternoons of June 24 and July 13 and weighed before and after a 16-h shrink. Steers from the control and lasalocid groups were weighed full on June 28 and 30 and July 2 and 6 at either 6, 7, 8, or 9 a.m. On each day of weighing, each group of steers was weighed only once, and each group of steers was weighed at a different time on each

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weigh day. Following their respective weighing on July 6, steers were placed in pens without feed or water and weighed at approximately 2-h intervals until 3 p.m. This was done to determine how lasalocid or length of morning grazing would affect rate of shrink.

Results and Discussion

A cattle source × grazing time interaction was detected (P<.10) for average full weights measured between June 28, 30 and July 2, 6 and weight change from the initial and final shrunk weights (Table 1). Neither weight nor weight change from shrunk weights of purchased cattle differed (P>.10) among lengths of morning grazing. Conversely, SEKES steer weights increased with length of morning grazing such that steers weighed at 9 a.m. weighed 14.3 lb more (P<.10) than those weighed at 6 a.m. Because steers started grazing at approximately 6 a.m., waiting until 9 a.m. gave them 3 hours to gain fill. Weight changes from shrunk weight were greater (P<.10) for steers from SEKES than for purchased steers at the 7 a.m. and 9 a.m. weighings and tended (P>.10) to be greater for SEKES steers at 6 a.m. and 8 a.m. weighings. These values represent fill and the ability of the cattle to regain fill following a shrink. The reason for the differential response between cattle sources probably can be attributed to cattle disposition. Purchased steers were difficult to manage, were extremely excitable when weighed, and did not appear to settle into their normal routine rapidly following handling. The SEKES steers were calm, moved quietly through the weighing facilities, and resumed a normal routine rapidly following handling. This is the most probable reason for the increased fill acquired during the intensive weighing period.

Rate of cattle shrink throughout the day also was affected by length of morning grazing (Table 2). Steers allowed to graze for 3 h before being removed from pasture shrank .86 %/h less during the first 2.2-2.6 h following removal from pasture than steers not allowed to graze. Steers allowed to graze for 3 h shrank at a faster rate (%/hour) during the ensuing 1.9 to 2.7 h period, but cumulative rate of shrink at any length of time following removal from pasture was lowest (P<.05) for steers allowed to graze for 3 h prior to removal from pasture. Total shrink at 3 p.m. was 2.9% less (P<.05) and rate of shrink was .19 %/h less (P<.05) for steers allowed to graze for 3 h compared with those removed from pasture at the time grazing began.

Table 1. Average Full Weight (lb) and Weight Change from a 16-hour Shrunk Weight of Two Cattle Sources following Different Lengths of Morning Grazing on Smooth Bromegrass Pastures

		Pasture Removal Time			
Item	Source	6 a.m.	7 a.m.	8 a.m.	9 a.m.
Average weight, lb	Purchased	669.8^{d}	665.6^{d}	674.8^{cd}	666.6^{d}
	SEKES	680.7^{bc}	683.9^{b}	686.6^{ab}	695.0^{a}
Weight change, lb	Purchased	25.5^{c}	21.3^{c}	30.5^{bc}	22.3^{c}
	SEKES	31.3^{bc}	34.5^{b}	37.2^{ab}	45.6^{a}

^{abcd}Means for average weight (both sources) or weight change (both sources) without a common superscript differ (P<.10).

Lasalocid supplementation did not affect (P>.10) rate of shrink.

Examples of the economic impact of this information are shown in Table 3. Example 1 is for 20 steers gathered at different times and sold at the local auction at 3 pm. Example 2 is for a group of 432 steers loaded under different scenarios and sent to a feedlot in western Kansas. A sale price of $80/cwt was assumed, although some price differential might occur because of cattle weight. Data gathered from this study indicate that cattlemen could add over $26/head to the value of steers sold at a local auction or over $11/head to the value of steers loaded off of pasture and sold to western Kansas feedlots.

Table 2. Rate of Shrink (%/hour) by Steers Gathered from Pasture following Different Lengths of Morning Grazing on Smooth Bromegrass Pastures

		Pasture Removal Time				Mineral	
Item	Period[a]	6 a.m.	7 a.m.	8 a.m.	9 a.m.	Lasal.	Cont.
Shrink, %/hour	1[b]	1.25[c]	1.19[c]	1.05[c]	.39[d]	.91	1.03
Shrink, %/hour	2[f]	.61[d]	.96[c]	.17[e]	.94[c]	.68	.66
Shrink, %/hour	1-2	.89[cd]	1.08[c]	.71[de]	.64[e]	.81	.85
Shrink, %/hour	3[g]	.16[d]	.02[d]	.59[c]	.15[d]	.19	.26
Shrink, %/hour	1-3	.67[c]	.72[c]	.67[c]	.49[d]	.62	.67
Total shrink, %[h]	to 3 pm	6.2[c]	5.9[cd]	5.0[d]	3.3[e]	4.9	5.3
Total shrink, %/hour	to 3 pm	.69[c]	.71[c]	.67[c]	.50[d]	.62	.67

[a]Periods are designations for times following removal from pasture. [b]Period 1 is the first 2.2-2.6 hours following removal from pasture, except for steers removed at 8 a.m. For those steers, period 1 was 3.4 hours. [cde]Means for pasture removal time within the same row without a common superscript letter differ (P<.05). [f]Period 2 is the next 1.9-2.7 hours following period 1. [g]Period 3 is the next 1.9 to 2.2 hours following period 2. [h]Total % shrink is based on the weight measured immediately upon removal from pasture and water and weight measured at approximately 1500 hours.

Table 3. Examples of the Effect of Different Lengths of Morning Grazing Allowance on Cattle Value

Example 1 - 20 steers gathered from pasture at different times and sold at local auction at 3 p.m.

	Pasture Removal Time			
	6 a.m.	7 a.m.	8 a.m.	9 a.m.
# head	20	20	20	20
Off pasture weight, lb	681	684	687	695
Shrink, %	6.2	5.9	5.0	3.3
Sale wt., lb	639	644	653	672
Average value, $/head[a]	$511.20	$515.20	$522.40	$537.60

Example 2 - 432 steers loaded off of pasture. Group 1 has all steers in one group and removed from pasture starting at 6 a.m. and loaded at a rate of one truck every 30 minutes. Group 2 has 432 steers divided onto three pastures and gathered at either 6, 7:30, or 9 a.m., with half loaded immediately and half loaded 30 minutes later.

	Group 1		Group 2	
	Depart	Arrive[b]	Depart	Arrive
Average weight, lb/head	671	634	685	651
Average value, $/head[a]	$536.80		$548.00	

[a]Total value is based on total sale weight multiplied by $80/cwt.
[b]Arrival weight at a western Kansas feedlot after an 8-hour transit time.