



Impacts of Winter Grazing on Alfalfa Production

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RATIONALE & SIGNIFICANCE

- Grazing alfalfa in the off-season is a common practice for many Montana producers.
- Dormant alfalfa is a high-quality forage source, providing large amounts of protein and energy to cattle that are often in mid- to late-gestation during the winter months.
- Little research is available that documents the impact of winter grazing on alfalfa production during the following growing season.

STUDY DESCRIPTION

Plot locations:

3 fields in 2 Montana Counties, Beaverhead (SW MT) and Custer (E MT).

Field details:

Stands were 2 years old.
Greater than 90% alfalfa.

Custer County.

- Dryland.
- 142 cattle grazed, average 269 kg.
- Grazed 118 days.

Beaverhead County.

- Irrigated.
- 81 cattle grazed, average 500 kg.
- Grazed 47 days.

4 randomly placed exclosures within each field, which included a paired grazed plot.

Measurements:

Soil penetrometer, plant height, stem and plant density, and root scores.

Measured in non-grazed exclosures and paired grazed locations.

Analysis:

Statistical analysis was conducted within location using the GLM procedure of SAS (9.4; Cary, NC).

RESULTS

- There were no negative impacts of winter grazing observed on subsequent year alfalfa production (Table 1).
- Trend for significance ($P = 0.10$) in height at the Ft. Keogh location, with the un-grazed plots being taller than the grazed plots at the June sampling.

Table 1. Impacts of winter grazing or non-grazing on alfalfa production the following year.

	Ft. Keogh			Dillon		
	Grazed	Un-grazed	<i>P</i> value	Grazed	Un-grazed	<i>P</i> value
April						
Stems/m ²	416	448	0.82	373	392	0.75
Plants/m ²	24.8	25.9	0.86	24.8	37.8	0.12
Height (cm)	10.9	12.2	0.63	8.4	9.9	0.24
Penetrometer	15.3	15.0	0.94	19.5	16.1	0.24
Root Score*	1.75	2.0	0.75	1.75	2.0	0.62
June						
Production (kg/ ha)	7337	5448	0.44	7006	6602	0.39

*Based on a 0-4 scale with 0 being a healthy root and 5 being a dead root.

MANAGEMENT DECISIONS/CONCLUSIONS

- This data supports the common practice of winter grazing, with no significant impacts of grazing on subsequent year production, height, plant root score, or soil compaction.
- This allows producers more flexibility when deciding how to manage their animals over the winter, particularly in years where forage may be in short supply.

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