

## SHORT DURATION GRAZING SYSTEM

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Presently there is a great interest in grazing systems for the Northern Great Plains. Two main purposes for using grazing systems are (1) to improve or maintain range forage productivity and/or (2) to increase carrying capacity of the rangeland. This should lead to an increase in sustained forage and livestock productivity and profitability from rangeland. To date, rangeland grazing systems have not adequately maximized these benefits. This has resulted in further research for more effective grazing systems.

A successful grazing system is one that will result in more uniform utilization of all plants available on the range and control the frequency and intensity of grazing on the more desirable forage plants. Short duration grazing (SDG) appears to have the potential for combining the above grazing system features. SDG systems use: (1) multiple pastures, 3 to 60, (2) 1 to 15 day grazing period, depending on the number of pastures, (3) 30 to 60 day rest period, again dependent on the number of pastures, and (4) a heavier stocking rate when compared with recommended season-long stocking rates.

Short grazing periods eliminate animals grazing re-growth of preferred plants. Relatively short rest periods allow plant re-growth, but not maturation. As a result of short grazing and rest periods, animals are not forced to graze as much low quality forage, so animal nutrition is enhanced. Concentrating livestock on small pastures tends to disperse the herd, resulting in improved grazing distribution. Heavier stocking rates may be necessary to optimize livestock performance under SDG to eliminate excessive accumulation of mature, less nutritious, forage.

This grazing trial utilizes one full section of native rangeland, divided into: one 320 acre season long (SL) pasture and, eight 40 acre short duration pastures (Figure 1). On June 25, 20 cow-calf pairs and 1 bull were allocated to the SL pasture and 35 cow-calf pairs and 1 bull allocated to the SDG system. Cattle were rotated every 5 days on the SDG system as pastures received 35 days rest between grazings. Drought, causing low forage production, forced removal of livestock from both systems on September 3.

Soil Conservation Service Range Site Guides for this vegetation zone state that these sites should be producing 1400 to 2000 lbs/acre air dry forage. Less than half of the potential production was realized this year because of low rainfall. In this first year, forage production should have been, and was, similar between systems.

Utilization was quite similar between systems even though the SDG system carried a heavier stocking rate of 15 additional cow-calf pairs. Fifty-five percent utilization of forage occurred on the SDG system and 51% on the SL system.

Livestock performance did not reflect the dry conditions and associated low forage production. However, the length of the grazing season was shortened to 70 days on both systems. Average gain per head and daily gain were slightly higher for cows grazing the SL pasture (Table 2). The average gain per acre for cows was the same between systems reflecting the higher stocking rate on the SDG system. Calf average gain per head and daily gain were similar between systems, though average gain per acre was higher on the SDG system again reflecting the higher stocking rate (Table 2).

Despite a significantly higher stocking rate on the SDG system, forage utilization and livestock performance were similar between grazing systems. Forage utilization for SD and SL grazing systems were 55 and 51%, respectively. Cow and calf average daily gains were slightly lower on the SDG system, 0.4 and 2.2 lbs., compared to the SL system, 0.7 and 2.3 lbs., but gains per acre favored the SDG system.

**Table 1. Forage Production and Utilization by Range Site on  
Two Rangeland Grazing Systems, 1981**

<b>System</b>	<b>Site</b>	<b>Forage Produced Lbs/Acre</b>	<b>Forage Utilized Lbs/Acre</b>	<b>Percent Utilization</b>
<b>Short Duration</b>	Silty	665	364	43
	Shallow	672	416	62
	Clayey	721	361	50
	Clay loam	689	381	55
	Sandy	642	413	64
	<b>Average</b>	678	387	55
<b>Season- Long</b>	Silty	728	323	44
	Shallow	958	544	57
	Clayey	550	229	42
	Clay loam	470	281	60
	Sandy	691	344	50
	<b>Average</b>	679	344	51

**Table 2. Livestock Performance on Season-Long and Short Duration  
Grazing Systems, 1981**

<b>Days Grazed 70 Class</b>	<b>System</b>	<b>Avg. Initial Wt. Lbs.</b>	<b>Avg. Final Wt. Lbs.</b>	<b>Avg. Gain/hd Lbs.</b>	<b>ADG Gain Lbs.</b>	<b>Avg. Gain/A Lbs.</b>
32 hd*	SD	1024	1055	31	0.4	3
<b>Cows</b>						
20 hd	SL	1080	1129	49	0.7	3
32 hd*	SD	235	391	156	2.2	16
<b>Calves</b>						
20 hd	SL	240	399	159	2.3	10

\*Three cow-calf pairs removed during trial due to 2 calf deaths and one catching pneumonia.

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