

## GRAZING MANAGEMENT OF CRESTED WHEATGRASS RANGE FOR YEARLING STEERS

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Improved crested wheatgrass ranges of eastern Oregon have a growing season of April, May, and June. The forage is of high nutritive value early in the season but decreases rapidly in digestible protein and energy with increasing maturity. A grazing management plan should consider the seasonal quality and quantity of forage resources and adapt them to animal requirements to obtain maximal forage utilization and animal production.

Young, rapidly growing animals can best utilize the early season high quality forage and yearling steers will maintain gains of two pounds per day or better through mid-June. After this time, the decreasing forage quality reduces gains. A problem with crested wheatgrass is the high stem to leaf ratio and the development of stiff, unpalatable culms with increasing maturity. A grazing program designed to remove 30 to 50 percent of the available forage on a field and then moving to a fresh field should increase the animals selectivity for the higher quality forage parts (leaves) and result in a higher level of gain. The following studies were conducted to evaluate such a grazing program.

### EXPERIMENTAL PROCEDURE

Thirty yearling Hereford-Angus steers were used in grazing trials on crested wheatgrass for two successive years to determine differences in steer gains between grazing treatments. Grazing treatments started in early May and consisted of either continuous grazing or movement to a fresh field after removing one-third of the available forage in the current field (short duration or cream grazing). Steers on both grazing treatments were fed a daily supplement developed at Squaw Butte to account for decreasing forage quality and to maintain steer gains through the spring and summer at two pounds per day or better. Steer weights were taken at the beginning and ending of the grazing season for Trial 1 and additional weights were taken at monthly intervals during Trial 2.

Forage production was sampled by hand clipping 20 quadrats in each study field before and after grazing. Additional samples were clipped at monthly intervals in the continuously grazed field and in eight 10 by 100 foot exclosures randomly located across all study fields. Pasture movement dates were determined from clipping estimates of available forage just before grazing and the estimated consumption of steers.

### RESULTS

The forage growth curves for Trial 1 (1978) and Trial 2 (1979) are shown in Figure 1. Forage production in 1979 was 130 percent of the average year because of the above average spring precipitation. A more typical to slightly below average forage year is represented by the 1979 growth curve. Growth

peaked in early July of 1979 but the precipitation pattern of 1978 delayed the peak two to three weeks. An important consideration to the range manager is the loss of forage dry matter after growth has stopped. This dry matter loss, mainly from leaf shatter, causes a considerable nutrient and digestibility loss. Grazing most of the forage before leaf shatter (August 1) is more efficient utilization.

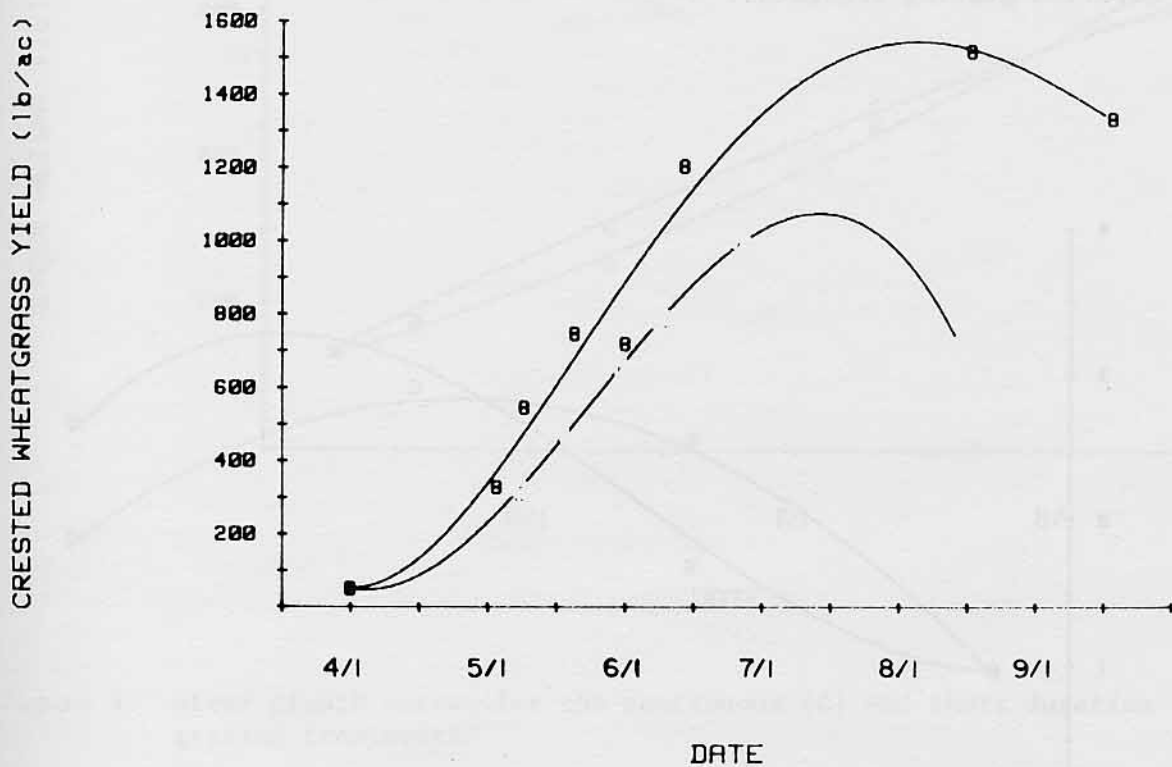


Figure 1. Crested wheatgrass yields for 1978 (8) and 1979 (9).

The short duration grazing treatment increased steer average daily gains (ADG) over the continuous grazing treatment by .23 and .17 pounds per day for Trials 1 and 2, respectively. Steer rate of gain curves for the continuous (C) and short duration (S) grazing treatments of Trial 2 are shown in Figure 2. Average daily gains were reduced during the first half of the grazing season by the short duration grazing treatment. Similar gains were expected during this period since both treatment groups had access to an abundance of high

quality forage. The gain response probably is from management factors. The short duration grazing treatment utilized four small fields (16 to 23 acres) followed by a larger field (69 acres) and pasture movement was frequent (8 to 17 days). This contrasted the continuous grazing treatment where steers grazed the same field (72 acres) for the duration of the grazing season. The frequent movements on the short duration treatment, generally early in the morning (a peak grazing time), reduced grazing time by the steers. After movement, the steers walked the fences of the new field, reducing grazing time and walking off weight. The ADG's were considerably higher during the last 45 days of the grazing season on the short duration grazing treatment. This period represents the grazing time of 49 days after the last movement. The increased ADG during the final 45 days resulted in higher overall ADG for the short duration grazing treatment.

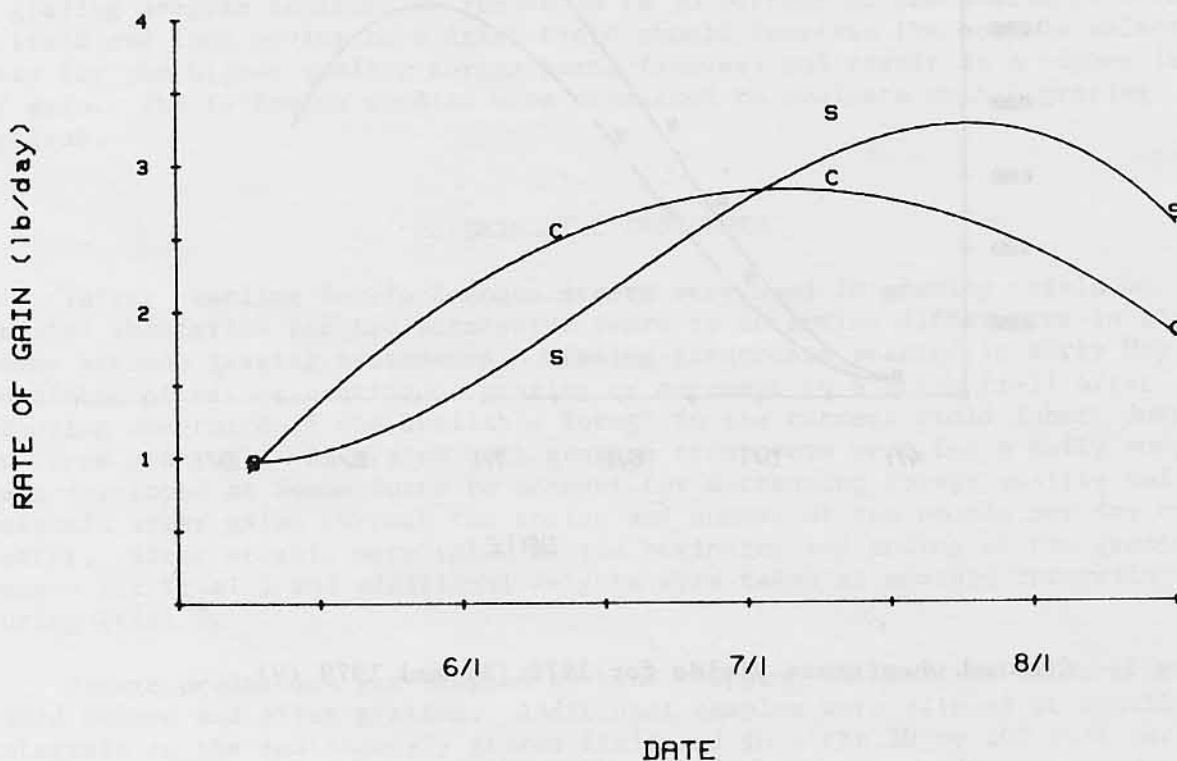


Figure 2. Rate of gain curves for the continuous (C) and short duration (S) grazing treatments.

The short duration grazing treatment also produced heavier steers at the end of the grazing season. However, this weight response came late in the grazing season because of the earlier reduced ADG (Figure 3).

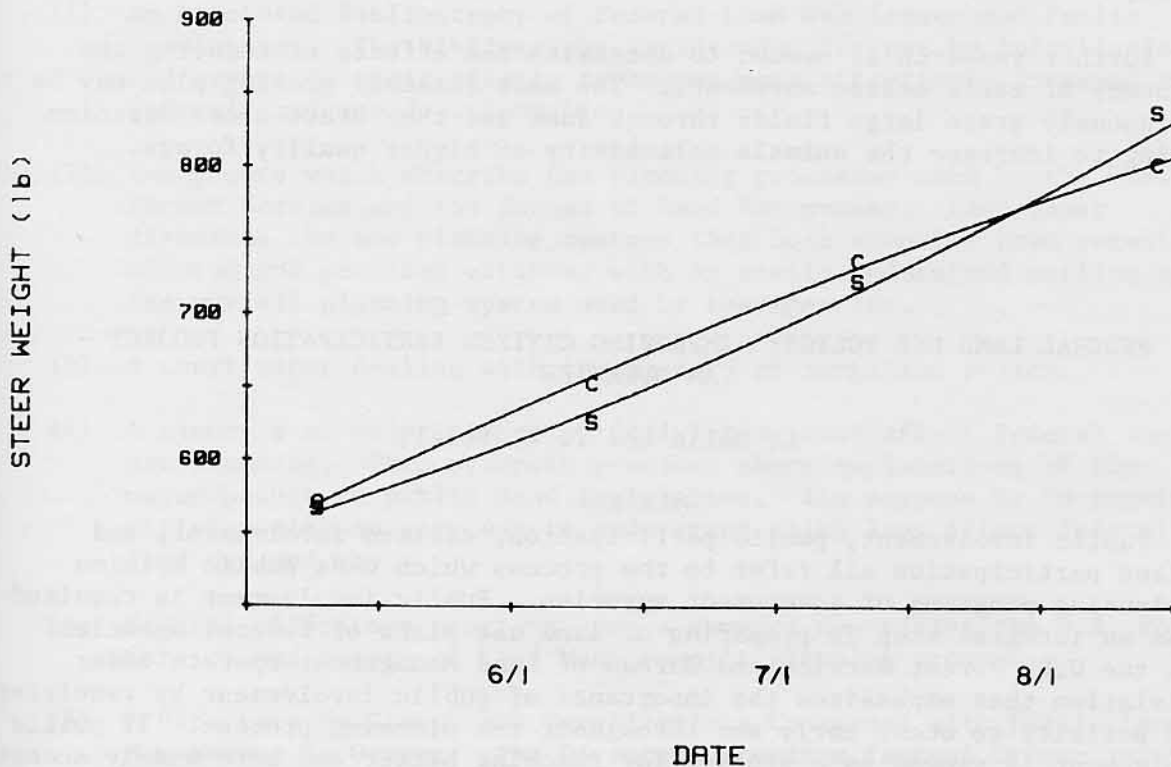


Figure 3. Steer growth curves for the continuous (C) and short duration (S) grazing treatments.

#### DISCUSSION

The results of these trials indicate that short duration grazing by yearlings will result in increased ADG and steer weight compared to continuous grazing. However, the grazing management in these studies should be modified. Reversing the order of grazing the short duration fields should result in similar gains by the steers during the early grazing season. The last field grazed in these studies was nearly equal in size to the continuously grazed field. Starting the short duration grazing treatment on the larger field would reduce the frequency of movements since forage yields would be greater on the smaller acreage fields by the time the steers were moved to them.

The reduction in early movements on the short duration grazing treatment should result in equal gains early in the season and still allow an increased forage selectivity later in the season. This may result in even heavier steers for the short duration grazing treatment. However, in the present trials there may have been some compensatory gains by steers late in the grazing season because of the lower early season gains. Any compensatory effect would be expected to be removed by reversing the grazing order of the short duration fields.

Further research is needed to determine the effects of reducing the frequency of early season movements. The most feasible grazing plan may be to continuously graze large fields through June and then start short duration grazing to increase the animals selectivity of higher quality forage.

FEDERAL LAND USE POLICY: IMPROVING CITIZEN PARTICIPATION PROJECT -  
AN OVERVIEW

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Public involvement, public participation, citizen involvement, and citizen participation all refer to the process which uses public opinion in planning programs of government agencies. Public involvement is required to be an integral step in preparing of land use plans of federal agencies. Both the U.S. Forest Service and Bureau of Land Management operate under legislation that emphasizes the importance of public involvement by requiring such activity to occur early and throughout the planning process. If public involvement is viewed as a process for reaching better and more widely accepted decisions, can be reached, then it is important for extension educators to be aware of planning programs used by the federal agencies. It is particularly important to be aware of time sequences in the process and to know when public participation opportunities occur.

At Oregon State University, a SEA-Extension-funded cooperative project between the Rangeland Resources Program and the Department of Agriculture and Resource Economics is well into its second year. The primary objective of the Federal Land Use Policy: Improving Citizen Participation project is to make citizen participation in federal land use planning programs more effective.

This project is concerned with the public involvement processes used by the Bureau of Land Management and the U.S. Forest Service. These two agencies manage public rangelands, and their land use allocation decisions have major effects on local rural communities as well as metropolitan communities generally located some distance from the land in question.

The Federal Land Use Policy project has a working advisory board of 12 extension specialists in range management, agricultural economics, and policy, which represent the other 10 western public land states. One goal of the project is to have materials and techniques developed in Oregon