WASHINGTON STATE UNIVERSITY
KITTITAS COUNTY EXTENSION

Tipton D. Hudson
Rangeland & livestock management
507 Nanum Street, Room 2
Ellensburg, WA 98926
(509) 962-7507
hudsont@wsu.edu

Fall grazing & supplementation

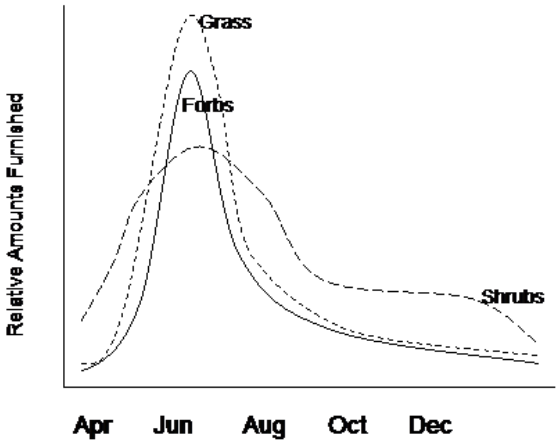
Tuesday, September 30, 2008
11:44 AM

Low-cost producers are generally those who most effectively utilize standing forage resources. Fall and early winter grazing offers an excellent opportunity to shorten the hay feeding period and the tremendous expense associated with feeding hay. This requires some forethought and planning to avoid wasting forage and to prevent damaging the pasture, delaying regrowth in spring or introducing invasive plants. It may also require protein supplementation.

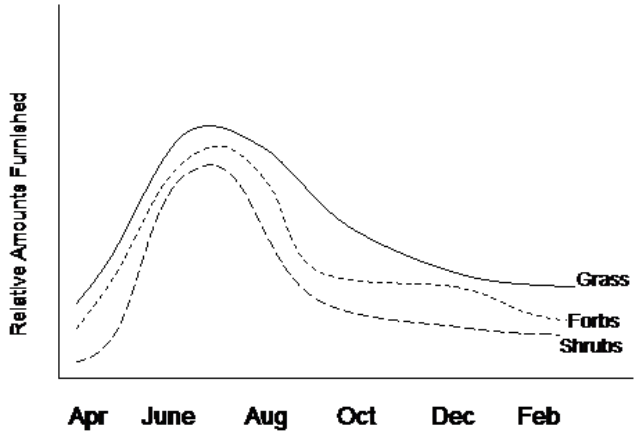
FORAGE NUTRIENT VALUES

Native rangeland grasses hold their forage value well; they are said to "cure well." Generally, forage plants' protein value declines with maturity as the plant lignifies and the ratio of cell wall to cell contents increases. Once the plant has stopped growing, usually when soil moisture becomes unavailable in June-August, the forage value holds, much like it does when you cut hay. For example, bluebunch wheatgrass crude protein value will peak in May at as much as 16%, then steadily decline to 5-7% by September 1. Exposed to the weather after dormancy, the protein values will slowly fall. Digestible energy value declines more slowly. By October 1, one could expect native bunchgrass range forage values to be below what is required by a ruminant (7.5%) to 4-5% crude protein. Other forage quality attributes can be measured, such as digestibility, vitamin and mineral concentrations, but these tend to decline along with protein, so protein serves as a decent indicator.

Seasonal Trend in *Protein, Phosphorus, & Carotene* (Parker 1969)



Seasonal Trends in Digestible *Energy* (Parker 1969)



SUPPLEMENTATION

Forage intake also declines with forage quality. Some protein is required for rumen microbes to function, and below about 7% protein, intake falls. For example, animals will consume 1.6% of their body weight when dietary protein is 5%, but 2.3% of body weight at 7% protein. As intake falls, energy consumption is inadequate and performance suffers significantly. The objective of supplementation is to make up the difference between what the available forage provides and what the animal requires so that forage intake levels remain above 2% body weight and body condition remains stable.

When forage has turned yellow/brown, protein levels are below 7% and supplementation is necessary. Energy supplementation is usually not necessary as long as forage quantity is not limiting. If cows are in adequate body condition at this point, providing a supplement at 32% CP or greater at .1-.3% body weight per day will facilitate proper digestion of low-quality forage (standing or harvested). Be sure to compare costs of available supplements on a cost per pound of protein basis.

If cows are **below a body condition score** (BCS) of **4.5**, providing a 28-32% CP *and energy* supplement at .25-.40% of body weight per day will improve rumen efficiency, provide some extra energy, and help recover body condition.

Energy supplementation may be necessary when nutrient requirements are high or when forage availability is low. Energy supplement such as grain may cause animals to shift most or all of their consumption to the supplement, so forage intake declines. Non-starch energy sources such as soybean hulls, wheat middlings, etc., alleviate this problem somewhat. High-quality alfalfa hay is often the cheapest energy supplement and doesn't hurt forage intake.

It is not necessary to feed supplement daily. Research indicates that "protein supplement can be delivered as infrequently as once or twice per week without decreasing animal performance, while energy supplements (<20% crude protein) should not be fed less frequently than every other day." (Cattle Producer's Library 2007).

RANGE GRAZING

Limiting access is important to avoid wasting forage when grazing in fall/winter. If live water is available, it may be possible to advance a hot wire incrementally to provide access only to a few days' worth of forage. If water is not well-distributed, it will be important to monitor forage stubble levels to avoid overgrazing. While dormant grazing is has a more benign effect than growing season utilization, grazing

too close can still damage bunchgrasses. Sodgrasses are less sensitive to dormant season defoliation. Some of the carbohydrates necessary for initiating leaf tissue in the spring are stored in the base of this year's stems. Consequently, fall or winter grazing below about 3" will delay regrowth in the spring and may cause light plant mortality.

Take care not to turn onto rangeland cattle or sheep that have weed seeds in their hide or in their digestive tract. Fall grazing animals with weed seed in or on them is one of the most effective ways to introduce invasive species. Conversely, it also represents a very good opportunity to stimulate reproduction of desirable grasses. Fall grazing after the seed has shattered will enhance seed-to-soil contact by virtue of the hoof action as animals move through a grazing area. Seed-to-soil contact is probably the second most limiting factor in germination and establishment of native grasses (second to spring moisture). You may also consider broadcasting a dryland seed mix ahead of the animals. Broadcast seedings (artificial regeneration) typically suffer from a failure to get good seed-to-soil contact just like natural regeneration. This is an excellent opportunity to introduce desirable perennials into bare areas or areas with undesirable species like cheatgrass or knapweed.