



WHAT IS MEANT BY 'TAKE HALF, LEAVE HALF'?

WE EXPLAIN

Barton Stam

Those managing dryland pastures grazed by livestock are frequently told to take half and leave half.

By half we mean 50 percent of the weight of the main forage species (i.e., not all the plant species in the pasture). If there were half grass and half weeds, you wouldn't want to take all the grass and leave the weeds. So, if an acre of ground produced 1,000 pounds of forage, 500 pounds could be grazed. The remaining half of the forage is left to avoid overgrazing, weed infestations, and erosion.

Estimating 50 percent of a grass's height is easier than its weight. Unfortunately, 50 percent of a grass's height is not the same as its weight. Most of the weight of a grass is near the base. After removing the top half of a grass plant, much more than 50 percent of the total weight would remain.

Grass species also differ slightly in how their biomass is distributed through their height. For instance, removing the top half of the height of an alkali sacaton plant only removes about 10 percent of its weight, but removing the top 50 percent of Indian ricegrass utilizes about 25 percent by weight. See chart page 27

Fortunately, there is an easy way to estimate half of the weight using a height measurement.

An Easy Way to Measure

Bind together a small bundle of grass plants of one species, ideally at full growth, including all parts from the soil surface to the top of the plant. Then, find where the balance point is using your finger as the fulcrum. When the bundle lies horizontally, there is 50 percent on each side. The length from the bottom of the plant to your finger will be the height that would remain if taking half and leaving half.

Varying precipitation or irrigation amounts cause differences in production. Completing this quick procedure once a year will allow adjusting for these differences. Many pastures also have more than one species, so repeat this test on each species of interest. You may choose to focus on one or two species because of their importance to the site, or they may be more palatable to your animals than other species.

If You Use Other Percentages

This system gets a little more complicated when we choose a different utilization level than 50 percent. We might choose a 75 to 80 percent utilization level on an irrigated pasture. On some dryland pastures, we might only allow our livestock to take 25 to 35 percent of the biomass to allow use by other grazers such as wildlife while still leaving 50 percent.

There are utilization gauges available for sale that will help determine use levels by height for a variety of species. The gauges come with the height-weight ratios for 54

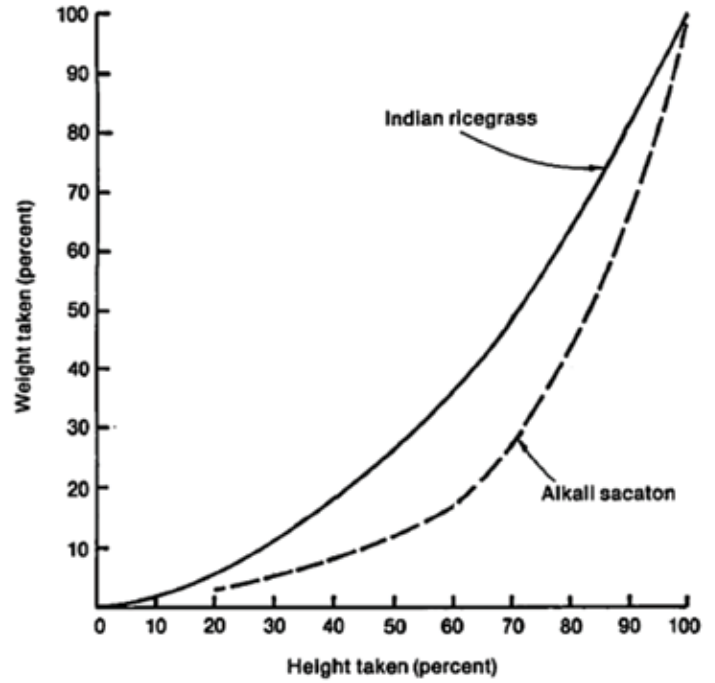


different grass species. These gauges are available from the Colorado State University Bookstore. Before ordering the gauge, ensure the species you are interested in are included. Many common Wyoming pasture species are not listed on the gauge.

A better plan may be to develop a height-weight distribution curve for the species on your property. You'll need a grass plant from that property that is full height and bundled from several locations. Divide the plants into height segments. Each segment should represent the same percentage of height – maybe 10 percent. Weigh each of those segments separately and then calculate the total weight. Convert the weight of each segment into a percentage of the total weight. Then, plot a height-weight distribution curve on a simple line graph as shown at right.

Final Thought

Utilizing 50 percent of the forage fits a moderate intensity grazing level. This will generally allow forage species to survive and thrive in Wyoming soils.



Height-weight utilization percentages for Indian ricegrass and alkali sacaton.

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