

## REST-ROTATION GRAZING

# Description Principles

Rest-rotation grazing is proposed for the area.

**Definition:** A rest-rotation grazing system is one that fully meets the growth requirements of plants.

**Purpose:** The purpose of a rest-rotation grazing system is to promote and maintain a maximum cover of vegetation on the land under grazing use.

**Attainment of Purpose:** Through periodic resting of the vegetation from grazing use.

A particular form of rest-rotation grazing management is developed for each range area separately. The amount of resting prescribed is based on the growth requirements of the plants on the particular area. So each rest-rotation grazing system is unique. It is tailored to fit the particular situation and is as effective as the land manager makes it.

### Plant requirements

The essential plant requirements to be met in management are:

1. Food
2. Seed for reproduction
3. Reproduction establishment

FOOD. The plant makes its food in its leaves when the leaves are green. If the leaves are grazed off for several years running the plant dies for lack of food.

In the case of perennials, which are the main concern on range lands, the plant makes a supply of food each year and stores some for future use. In herbaceous plant reserves are stored in the roots mainly and in woody plants in both roots and stems. The bulk of the reserves are carbohydrates, mainly starch. The trend in carbohydrate resources in plants throughout the year is shown on page 22.

In perennials enough food accumulates in storage to last the plant several years. So even if the plant is cropped closely for a year or two and

is prevented from making food it does not die. It subsists on reserves. But during this time it gets weaker and smaller.

The plant uses food materials continuously to stay alive and also at times for growth. It uses reserves heavily when it is dormant and during the store part of the growing season. Reserves are at lowest level about the time the plant is half grown. They are replenished thereafter and reach highest level a few weeks after the plant is full grown or fully developed.

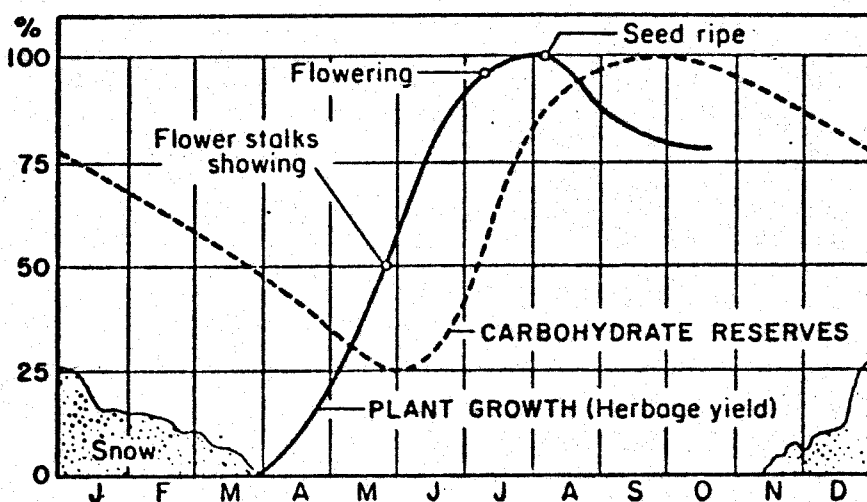


Figure 1.—Trend in carbohydrate reserves in relation to shoot growth. Shoot growth of Idaho fescue and based on data by Hormay and Talbot (1961). Carbohydrate curve, based on data by McCarty and Price (1951), is related to curve of Idaho fescue by plant growth stages.

Grazing of the plant anytime during the green period, from start of growth until the plant is fully developed, reduces the amount of food made and stored so it is harmful. Continuous close cropping during this period ultimately results in death of the plant. Cropping from the start of growth until the plant is half developed is especially harmful because the plant has not yet started to replenish reserves. Injury to the plant becomes progressively less thereafter until reserves are fully stored.

Two years of rest are provided in treatments B(1) and C for restoration of plant vigor following a year of grazing, treatment A. Production of ripe seed is provided by treatment B(1) and trampling of seed by B(2). Also with treatment C all vegetation is left ungrazed providing surface litter which helps control soil erosion and enhances soil fertility. The cycle of treatments are repeated over and over indefinitely to maintain the vegetation. If more rest than shown in the 3-treatment formula is needed for any reason more rest treatments should be added. The amount of rest needed in any situation is determined by the land manager. His on-the-ground experience with management as well as technical knowledge is important in making sound decisions.

Seed ripe date is set on the basis of a desirable plant species grazed by livestock that ripens seed latest in the season. Thus seed would be produced by all species that ripen seed earlier. So reproduction of all species is favored.

Neither stocking rate nor season of grazing are specified with rest-rotation grazing, these practices are determined for each area by the land manager as in the case of any grazing system. Rest-rotation grazing systems are formulated with enough rest to cope with the heaviest use and with the longest season of grazing that can occur in a year.

To practice rest-rotation grazing, an area is divided into pastures. Some of these are rested and others grazed in a particular year. The number of pastures is determined by the number of treatments in the grazing formula. With 3-treatments three pastures are needed, with 4-treatments four pastures and so on. A particular treatment is applied in each pasture in a given year. Each pasture is grazed according to formula in A B C order over time.

Man has seriously deteriorated both vegetation and soil on the Home Camp-Tuledad Area in a short span of 20 to 30 years or less. Yet he has no means of restoring these resources himself. He cannot restore the soil, nor the vegetation. These invaluable resources can be replaced only by nature in her slow but sure way. As someone once said about the capacity of man: "A common thing is a grass blade small, trod by the feet that pass but all the kings and giants tall working until doomsday shadow falls can't make a blade of grass."

Restoration can take place only when natural forces have free play without interference by man--when the land, and particularly, the vegetation is rested from use. During rest periods, vegetation and soil develop toward climax conditions at a normal rate. The natural ecosystem tends to establish normal balance. Soil, plant and animal resources are renewed and increased and the natural environment is enhanced.

With adequate rest from use land will recover production capacity under any climate, topography, kind of soil, vegetation or condition of land. Resting is universally effective and applies anywhere.