THE SAMUEL ROBERTS NOBLE FOUNDATION

AG News and Views

Originally published June 2013

LIVESTOCK

Forage allowance determines stocking

by Ryan Reuter / rrreuter@noble.org

In grazing enterprises, forage allowance is a key management variable. Forage allowance is defined as the amount of forage dry matter available to an animal. It can be expressed on a per animal basis, but we have found it useful to express it as a ratio to an animal's body weight. For example, we talk about targeting a forage allowance of 2.5 pounds dry matter per pound of animal body weight.

Why is forage allowance important? Forage allowance is related to the more familiar variable – stocking rate. Stocking rate is the number of animals grazed on a given area of land for a period of time. Stocking rate is the main variable that determines key production and economic responses of grazing systems, such as average daily gain (ADG), gain per acre, stand persistence and net return. Typically, conservative stocking rates produce greater ADG and stand persistence, while aggressive stocking rates produce more gain per acre along with greater risk.

Forage allowance is the underlying variable to stocking rate. For example, we might graze cows at the stocking rate of 10 acres per cow. However, we arrive at that stocking rate by considering a target forage allowance. We estimate what we think forage production will be, determine the amount of residual forage that we desire, consider the size of our cows (and therefore their forage demand), then put enough acres to each cow to achieve the forage allowance we want. Therefore, forage allowance determines a lot of those important economic responses to grazing systems. In a research setting, it is often more valuable to measure forage allowance directly rather than crudely measuring just stocking rates. For example, it is more precise to say that we stocked pastures at a forage allowance ratio of 2.5 rather than saying we stocked two steers per acre. Using forage allowance also makes our research results more applicable to other situations.

In many of our grazing experiments, we seek to measure and control forage allowance directly. Sometimes we want all of our paddocks in an experiment to maintain the same forage allowance. This would allow us to compare other treatments without the confusing influence of different forage allowances. In other experimental designs, we seek to maintain different forage allowances so that we can understand the effects of forage allowance on animal and plant responses.

At the Noble Foundation, we are developing tools to help measure forage allowance more accurately. When we are able to measure forage allowance, we will then be able to manage it. In the end, we want to understand these relationships so that ranchers can make more informed grazing management decisions, which will lead to increased sustainability. ■