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Modoc Ranch Roundup

2nd Quarter, 2013

COOPERATIVE EXTENSION

STRATEGIES ON GRAZING PASTURES

Now is the time to start thinking about the upcoming year's grazing strategies and monitoring. It is important to monitor what you have before implementing anything new. In order to qualify what you are monitoring it is important to think of your grazing and record the results in terms of: 1) How many animals are in a given area for a set amount of time (intensity); 2) The distribution of the animals in relation to the intensity (utilization) ; 3) How often is grazing done or frequency (are pastures rotated through?) 4) when does grazing occur in the plants' cycle (season of use); 5) What plants are being eaten (selectivity of use).

As you gather information on utilization, streambank alteration, species composition or look at photos, the above information will give you the context to analyze data. Duration, stocking rate, animal distribution and times of grazing in relation to plant growth stage (not calendar date) are the most important factors in grazing.

By having this data a land owner or manager can determine what tool to use for improvement. Consider the following:

- Use salt and water to distribute grazing;
- Move fence location if it will help;
- Watch for incidence of poisonous plants and noxious weeds (make sure to mark them for follow up treatment);
- Make utilization checks and;
- Establish a photo monitoring program.

These can enhance, maintain, or reduce your current program and should be monitored to determine what effect is happening.

Grazing pressure at the proper time combined with appropriate seasonal rest periods can improve range productivity. Grazing may loosen soil, plant seed, tromp litter into the surface and cycle nutrients. However, in order to get such benefits it is important to understand how plants as well as animals respond to management.

Use of stock water as a way to distribute cattle throughout the landscape or concentrate them in an area can be beneficial. Making water available in only certain areas of a pasture may be as beneficial as fencing and give areas relief from continuous grazing.

Additionally, it may be beneficial to herd animals away from historic overuse areas to parts of the pasture which hasn't received much pressure in the past. Without effective monitoring and recording, it may be difficult to determine where these areas are year to year.

Successful grazing strategies that enhance performance and sustainability are a matter of common sense, good records, and knowledge of plants and animals. They also change to meet altering environmental conditions and animal needs.

Remember to have clear concise objectives prior to making any changes or implementing a monitoring plan.

Cameras and training are available through the FAO.

What is pH and Why do we care?

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What is pH?

In chemistry, pH is defined as the negative logarithm of the hydrogen-ion activity. More simply, it is a measure of the relative amount of free hydrogen (H+) and hydroxyl ions (OH-), or how acidic or basic soil, water or any solution is. pH is reported in "logarithmic units," like the Richter scale, which represents strength of earthquakes. Each number represents a 10-fold change in the acidity or alkalinity of a substance. The range goes from 0 - 14, with a span around 7 being considered neutral. For example, water with a pH of 5 is ten times more acidic than water having a pH of six. Additionally, pH of less than 7 indicates acidity, whereas a pH of greater than 7 indicates alkalinity or a base.

Why do we care?

Soil pH. The pH value of a soil is influenced by many factors including vegetation, topography, mineralogy, texture and the kinds of parent materials from which the soil was formed. Those soils which are developed from basic rocks, such as basalt rocks found in the Warner Mountains in California, generally have higher pH values than those formed from acidic rocks, such as the granite rocks found in the Sierra Nevada Mountains of California. Rainfall also affects soil pH. Water passing through the soil leaches basic nutrients such as calcium, sodium, potassium and magnesium from the soil. They are replaced by acidic elements such as aluminum and hydrogen. For this reason, soils formed under high rainfall conditions are more acidic than those formed under arid (dry) conditions. Application of fertilizers containing ammonium or urea adds to soil acidity. The decomposition of organic matter also adds to soil acidity.

Optimal plant growth is dependent on soil pH because it affects the availability of all plant nutrients. Plant production and health are impaired at either high (>8) or low (<6) pH, because of nutrient limitations and potential toxicities. A pH of 6.0-6.5 is an ideal range that optimizes availability of many micro- and macro-nutrients and minimizes toxicity of some micronutrients. Some micronutrients can be toxic at extreme pH. In highly acid soils, aluminum and manganese can become more available and more toxic to the plant. Also at low pH, calcium, phosphorus and magnesium are less available to the plant. At a pH of 6.5 and above, phosphorus and most of the micronutrients become less available. pH directly affects how fertilizers change into a form that plants can easily uptake. Different environments will influence the pH needs as an agricultural crop. However, most productive agricultural soils range between 6.0-7.5.

Water pH. The pH of water is most affected by the soils through which the water flows before getting into the stream, ditch, or river channel. Additionally, many other factors influence the pH of stream water: the source of the water, precipitation, root and microbial respiration and contaminants. The only one of these that can be controlled is input of contaminants.

The main use of pH in a water analysis is for detecting “abnormal” water. The normal pH range for irrigation water is from 6.5 to 8.4. An abnormal value is a warning that the water needs further evaluation. Irrigation water with a pH outside the normal range may cause a nutritional imbalance or may contain a toxic ion.

Low salinity water sometimes has a pH outside the normal range since it has a very low buffering capacity. This should not cause undue alarm other than to alert the user to a possible imbalance of ions and the need to establish the reason for the adverse pH through full laboratory analysis. Such water normally causes few problems for soils or crops but is very corrosive and may rapidly corrode pipelines, sprinklers and control equipment, especially when associated with a low pH.

Pollution can change water's pH, which in turn can harm plants and animals living in the water. Pollution is categorized by its source- point or nonpoint. Point source pollution is an observable, specific, discharge of pollutants into a water body- i.e. feedlots. Non-point source pollution consists of diffuse discharges of pollutants through the natural environment, and is usually as-

sociated with agriculture and forestry. One of the main non-point source contaminants of concern is phosphorus. Phosphorus contamination leads to blooms in microbial population which increase the amount of carbon dioxide in the water source. Increasing carbon dioxide leads to a decrease in pH thus making the water more acidic.

Water pH can differ with seasonal temperature changes. One of the causes is microbial respiration and the resulting carbon dioxide. Carbon dioxide is more soluble at cooler temperatures thus decreasing the pH (more acidic). Conversely, carbon dioxide is less soluble in warmer temperatures but there is more respiration occurring, so the actual change in pH is variable.

How to Measure pH?

Soil pH. It is important to know the pH of soil before seeding any plant. By knowing the pH of the soil a person can choose plants that are adapted to that condition or amend the soil to fit the chosen crop's needs. A soil test performed by a trustworthy lab is relatively inexpensive and will also have other information incorporated in it. Soil pH can also be measured using pH meters, standard dyes, or paper pH indicator strips. Each has pros and cons related to its ease of use, ability, hardiness, and expense.

Water pH. The same three methods for measuring pH in soil can be used in measuring pH in water. The main difference is water should be measured as soon as possible after taking the sample. This will decrease changes due to temperature variations, microbial respiration, etc.

As discussed, pH in soils and water has significant impacts on the productivity, sustainability and relative health of an area. Measuring pH is relatively simple, cost effective process. Plans for monitoring pH can be developed with the local farm advisor.

HORSE HINTS– ROTATIONAL GRAZING

The concept behind rotational grazing is to break up larger pastures into smaller sections, so you can control your horse's grazing and forage production in a smaller area. This practice persuades the horses to be less selective and to graze the available forage more evenly, promoting more productivity in the pasture. Once one section is grazed down, the animals are moved to a new portion of the pasture while the previously grazed portion is allowed to rest and recover from grazing, trampling, and hoof damage.

Ideally, you want to be able to divide a larger pasture into four smaller pastures providing enough grazing for seven to ten days. This rotational pattern gives each pasture a rest of three to five weeks, depending on condition and water availability. As the grass matures and growth slows during the summer, you will likely have to decrease grazing time and increase resting time to stabilize or improve pastures.

The movement of horses should be based on the growth rate of the pasture and the specific height of the forage, not on the calendar or whims. Grazing can begin when the forage is 6-8 in. tall. Once horses have grazed a pasture down to 3-4 in. or about half of the available forage rotate them onto the next pasture section.

If the size of your available acreage is small, you may find that your first pasture has not yet recovered to suggested grazing height by the time you have rotated through all the other pastures. To avoid overgrazing, supplemental feeding and/or reduced or restricted grazing time may have to be used to give each pasture adequate rest.

There may be several options for dividing your pasture into smaller plots for rotational grazing; however remember that all sections must allow access to water. Also, try to divide pastures in such a way that horses can have access to shade or shelter, especially if they will be confined to these areas for more than a few hours.

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INSIDE THIS ISSUE:

65TH ANNUAL JUNIOR LIVESTOCK SHOW AND SALE

June 17th	8 AM	Horse Show
June 18th	9 AM	Poultry and Rabbit Show
June 19th	2 PM	Weigh-ins and 1st ever ultrasound carcass contest (results during awards ceremony)
June 20th	8 AM	Market Swine
	11 AM	Market Beef
	11AM	Market Sheep– to follow Market Goats
	12:30 PM	Peewee Showmanship
	2 PM	Breeding Swine– to follow: Breeding Beef, Sheep and Goats
	4 PM	Livestock Judging Contest (open to the public)
June 21st	8 AM	Swine Showmanship
	9 AM	Beef Showmanship and Sheep Showmanship– Goat to follow
	12 PM	Round Robin Showmanship
	3 PM	Awards Ceremony
	5 PM	Community Barbeque– **Public WELCOME**