

COOS AND CURRY LIVESTOCK NEWS

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Multi-Species Grazing for Weed Control

Multi-species grazing means grazing two or more livestock species *together* on the same land area. This is not the same as grazing cattle after sheep or vice versa. The objective is to better utilize the resources and have a positive effect on animal production.

Multi-species grazing is one tool that can be used for weed control. In the early 1900's, settlers introduced weeds into the United States. The increase in weed problems follows the trend of decreasing sheep numbers and increasing cattle numbers. So, the trend is away from using the type of animal that will graze some of our weeds (sheep & goats), and toward animals that avoid these weeds (cattle).

Most studies show that grazing cattle and sheep are complementary. When properly managed and monitored, multi-species grazing can result in stocking rate increases of 10-15%. With heavy weed infestations, stocking rate increases have been reported as high as 30-40% for sheep.

One of the keys is to understand dietary and behavioral differences

among livestock species. You also need to manage pasture effectively.

Multi-species grazing works because sheep, goats, and cattle prefer different plant species in their diets. Cattle prefer grasses, sheep prefer forbs, and goats prefer browse. Multi-species grazing uses these dietary differences to complement each other. So, if you have a mixture of grasses, forbs, clovers, and browse in your pasture, a combination animals might work well to keep the weeds under control and to efficiently utilize your pasture resource.

Behaviorally, sheep are able to graze steep slopes and rough terrain better than cattle.

Multi-species grazing depends on good pasture management, including proper stocking rates. Without this, multi-species grazing will not be effective.

A severely grazed cattle pasture will not benefit from the addition of sheep nor will a sheep pasture where dirt shows more than grass suddenly thrive with the addition of cattle. If your pasture is in relatively good shape, the general rule

of thumb is that 2-3 sheep can be added per cow without decreasing cattle numbers or causing over-grazing.

Effective grazing programs for weed control require a clear statement of the kind of grazing animal, timing, and rate of grazing. These are necessary to reduce weeds and maintain productive pastures.

There are pros and cons to multi-species grazing. It allows the ranch to maximize net profit by producing and marketing more forage through livestock. In a ryegrass/white clover pasture, cattle grazing alone will lead to clover dominance and eventual reduced total dry matter production. Repeated grazing by

Multi-species grazing depends on good pasture management

sheep reduces clover and leads to grass dominance, promoting coarse, up-

right grasses, which sheep find unpalatable. In either case, pasture productivity declines with time.

Fencing and separate handling and loading facilities are more

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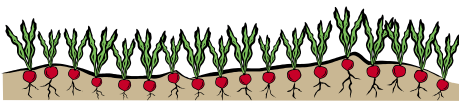


Agriculture, Home Economics, 4-H Youth, Forestry, Community Development, Energy, and Extension Sea Grant Programs, Oregon State University, United States Department of Agriculture, and Coos and Curry Counties cooperating. The Extension Service offers its programs and materials equally to all people.

Soil pH and Liming

Acidity or pH is the most commonly determined chemical characteristic of soil. Soil pH may be a common measurement and term, but can be a puzzle to growers, gardeners, and suppliers of lime and fertilizer. This article will explore soil pH and crop growth.

Acidity is a measure of the hydrogen ion concentration in soil solution. Soil solution is water held by the soil particles. Soil pH is a chemical property of soil that controls the over-all condition of suitability for root growth. The importance of soil pH or soil acidity on plant growth can be explained using the following swimming pool analogy.



Think of yourself in a swimming pool. If the water is too cold, too hot, or the chlorine content is so high your eyes hurt, you don't want to be in the pool or you might limit your time in the pool. Now think of roots trying to grow in soil. If the soil pH is too high or too low, plant roots are like you in the pool, they don't want to be there. Unfortunately, plant roots don't have a choice about being in the soil or not. If they are not "comfortable" from a soil pH that is too high or too low, the roots don't grow normally or nutrients are not taken into the plant in sufficient quantity.

Soil acidity is measured and expressed as soil pH. Soil pH is measured on a scale from 0 to 14. Soil pH values below 7 indicate acidic soil, and numbers above 7 indicate basic or alkaline soil. As pH numbers decrease, soil acidity or the hydrogen ion concentration increases. Lime is added to acidic soil to raise the pH. Amendments such as elemental sulfur are added to basic soil to reduce the pH.

The scale used for pH is logarithmic or has a 100-fold difference for each unit change. Most of the measurements familiar to us are not expressed with a logarithmic scale. For example, if you have \$60 dollars and a friend has \$50, you have \$10 more dollars than does your friend. The scale here is not logarithmic, rather it is normal. Let's explain soil pH or a logarithmic scale using money.

If your soil pH is 6.0 and your neighbor's soil is 5.0, your neighbor's soil pH is 10 times more acidic than yours. Using a monetary example where hydrogen ions equal dollars, your soil pH would be represented by \$6 and your neighbor's soil pH would be \$60.

Soil acidification is a naturally occurring process in western Oregon. Centuries of leaching the soil with the abundant winter rainfall removed chemical constituents called bases, making the soil acidic.

Calcium and magnesium are the primary bases that when removed, results in acidic soils. They were either leached into the groundwater and now cause well water to be called "hard" or found their way into surface streams and were carried to the ocean. The natural process of soil acidification is accelerated by the addition of nitrogen fertilizers, crop residue removal, and

Soil pH controls suitability for root growth

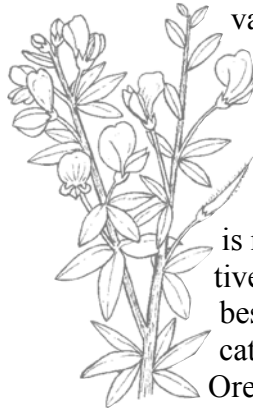
farming or gardening in general.

Soil pH tells us the chemical condition roots will experience. As soil pH decreases, the solubility of iron, zinc, manganese, copper, and aluminum increases. The concentration of manganese and aluminum can reach levels that are toxic or at least inhibit root growth. Crop sensitivity to manganese and aluminum vary. Blueberries and rhododendrons are quite tolerant compared to alfalfa and garlic. The most common approach to crop management is to decide what crop will be planted and how the soil in the area needs to be treated or amended. We do not decide to plant blueberries if the soil pH is low or alfalfa if the soil pH is near neutral. From a management viewpoint, soil pH tells us if the soil is suited to the crop we desire to grow or conversely, if lime is needed to raise the soil pH to a suitable level.

Scotch Broom Control

Scotch broom (*Cytisus scoparius*) infestations are increasing throughout Western Oregon, and to some extent, in Eastern Oregon. It is a large aggressive bush that spreads to form pure stands at the expense of desirable grasses, broadleaves, and young trees. It spreads primarily by seeds. Seedpods split at maturity and eject the seeds for some distance. The seeds can be spread by vehicle tires, animals, birds, and reportedly by ants. Seeds can last for 60 years in the soil, so the problem is not solved even if all living plants are eliminated. Besides being competitive, Scotch broom can cause severe hay fever in some people.

So how do we control it? Several seed weevils have been introduced, but none have been especially effective. Goats will eat seedlings, and if grazing pressure is intense enough, can keep infestations at bay. Periodic tillage kills the seedlings, so Scotch



broom is not a problem in cultivated land. Scotch broom does not burn readily, so fire has been ineffective. 2,4-D with oil is really quite effective. March is the best time for application in Western Oregon. Get good coverage over the entire plant, and treat for two consecutive years. Triclopyr in Garlon or Crossbow might be marginally more effective, but probably would not be worth the additional cost. (*Note: Garlon has no pasture label*). However, if other woody weeds, like blackberries, are mixed in with the broom, then triclopyr becomes much the better choice. Either 2,4-D or triclopyr would be fairly selective in conifers in March. Metsulfuron (Ally/Escort) is pretty effective on Scotch broom as well as on blackberries, at about an ounce/acre with surfactant. Be-

cause of the long seed life, pastures must receive attention for years, and reapplication may be necessary. In tree plantings, getting control while the trees are small is the important thing. The trees, once they get some size, will out-compete Scotch broom seedlings.

When is this weed a weed? After all, it is a beautiful plant, turning our hillsides a golden yellow. It is a legume and can fix nitrogen, helps reduce erosion and stabilize slopes, provides wildlife cover, and recycles nutrients. It seems to me that, with 2,4-D at hand, we should be able to control it where we don't want it and keep it in place where it does more good than harm. I don't think that is a popular idea with persons suffering from hay fever or who have been battling it as a pest in pastures or young trees.

-Arnold Appleby, Professor Emeritus

Antibiotics in Feed

The livestock feeding industry has been accused of feeding sub-therapeutic levels (low levels) of antibiotics that are used in human medicine. This practice possibly leads to drug resistance when that antibiotic is used to treat a disease in humans. In beef feeding, the antibiotics used at low levels continuously in finishing rations are Bovatec (lasalocid) or Rumensin (monensin sodium). Neither of these are used in human medicine.

Forms of chlortetracycline and oxytetracycline are used in human medicine. Neither of these is fed continuously to cattle in finishing rations. However, both are fed for a very short time at a high level for a specific purpose. Part of sulfamethazine (sulfanilamide) is used in human medicine. It is also fed at a high level for a short time for a specific purpose. It is never fed at low levels continuously. It should be noted that these drugs are used in isolated instances

when pens of cattle are at a great risk for disease or have shown symptoms of a disease.

Bacitracin is used topically, on the skin, in human medicine. It is not fed continuously at a low level in finishing rations for cattle.

Hopefully this will give you some factual information when faced with questions about the use of antibiotics in livestock operations.

-Amy Peters Ruddell
From an article by Mike Mehren

Multi-Species Grazing

(continued from page 1)

expensive when grazing more than one livestock species. Also, when a farming operation consists of two livestock species, the number of purchased vaccines, drenches, and other supplies increases, but the quantity of each is reduced. There may be an increase in unit price. Raising more than one species of livestock also requires knowledge of nutrient needs, disease recognition and control, grazing and handling behavior, breeding practices, and marketing.

Planning ahead will pay off with multi-species grazing. When planning your grazing strategy, keep in mind that you want to control the weed or weeds but keep the grasses and clovers healthy. This may take monitoring to find the best grazing strategy to accomplish your goals. Remember that you are trying to control the weed, not totally get rid of it.

A Purdue University study examined multi-species grazing. Treatments included: cows and calves grazed alone, ewes and their lambs grazed alone, and cows and ewes with their offspring grazing the pasture together. Forage base of the pastures were tall fescue with red and ladino clover.

Multi-species grazing resulted in higher lamb and calf performance. Weight gain per acre of lambs and calves favored the multi-species

only treatment.

Forage samples were also taken in this study. Pastures containing sheep had lower levels of weeds (plantain, crabgrass, knotweed) than pastures containing cattle only.

Grazing goats and cattle may be beneficial in pastures with brushy weed species. Like sheep, goats make the grasses more available to cattle. Another benefit to goats is that there is a growing goat meat market. I recommend you develop your market first before using goats.

In summary, there are many benefits to grazing cattle with sheep and/or goats together on the same piece of land. Increased forage production, improved forage utilization, enhanced livestock performance, sustainability, and weed control.

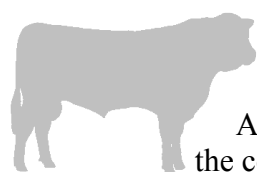
Multi-species grazing can result in more productive and better utilized pastures as well as reduce weed problems.

-Amy Peters Ruddell

Table 1. Lamb and Calf Performance by Pasture Treatment

Item	Cattle	Sheep	Mixed Species
Weight Weaned, lbs.	2755	2096	3271
Weight gain, lbs.	1665	1283	1985
Gain/acre, lbs.	208	160	248

treatment (Table 1). Pastures with both species of livestock present had 40 lb. more gain per acre than the cattle-only treatment and 88 lb. higher gain per acre than the sheep-



Bull Management

At the start of the conditioning period, the bull battery should be fairly well established. You should have determined bull needs for the upcoming breeding season and then have appraised the existing bull battery.

Evaluation should include a breeding-soundness exam which assures the reproductive capacity and physical soundness of each bull. Addition-

ally, an evaluation of a bull's libido (serving capacity) is gaining in popularity. The use of physically sound, high-libido fertile sires will result in a shorter breeding and calving season.


Bulls found to be unsatisfactory with the breeding soundness exam, and possibly those that are questionable, should be replaced. New bulls should be acquired at least 60 and preferably 90 days before the breeding season.

This provides ample time for the new acquisitions to adjust to the feed and climate of an area.

Group bulls to allow those working together to become familiar with each other and to develop a social structure. Social dominance can also influence the reproductive performance of a bull. Older, larger bulls are usually dominant in a group. However, the dominant bull may not have the highest libido or the

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Announcements



Summer Picnic & Tours

June 20—Oregon Cattlemen’s Assoc.
& Oregon Sheep Growers Business
Meetings

June 21—Goat Grazing & Multi-
Species Grazing workshop followed
by a special dinner to honor rancher,
Sam Dement

June 22—Farms & Ranches Tour,
ending with a BBQ hosted by the
livestock associations



Weed Control for the Rancher

May 14, 2002
7-10 pm
Bandon Community Center
City Park & 11th St.
Bandon



Biosecurity

Friday, May 17
10:00am—Noon

New River Learning
Center

Amy Peters Ruddell
Livestock Agent

Bull Management

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best breeding soundness score. The dominant bull will breed more cows than the others or inhibit the other bulls from breeding them. Therefore, if the dominant bull is infertile, the fertility of the herd will decrease regardless of the reproductive merit of the other bulls.

Newly acquired bulls as well as the carry-overs in the bull battery should be brought up to date in a complete health program with the balance of the herd. Insect control is especially critical for bulls. Lice and flies both find bulls a likely target for infestation.

Proper attention and care of the feet can prolong the useful life of a bull, and can help ensure a high rate of activity during the breeding season. After an extended period of inactivity, a bull's feet may be long and misshapen. Hoof trimming should be done at the start of the conditioning period, so there is time for some re-growth, which acts as a cushion during the breeding season.

Perhaps the most critical factor for proper bull development is exercise. Bulls that are physically fit when turned out will breed more cows during the breeding season because they will retain a high degree of libido and remain sound longer. Exercise before the breeding

season also reduces injuries from fighting and riding.

Before turnout, bulls should be at a relatively high nutritional level. This is necessary particularly to maximize growth and development of young bulls. Young bulls will usually lose weight early in the breeding season, so they need to have an energy reserve when they are turned out. Perhaps the best way to describe the ideal condition is bloomy but not fat.

Good bulls represent a substantial investment and are critical to the success of a breeding program. Proper care before the breeding season will help ensure fertile, active bulls during that time.

-Amy Peters Ruddell, from Cow-Calf Management Guide & Cattle Producer's Library CL 435