BARNYARDS & BACKYARDS

SPRING 2006

RURAL LIVING IN WYOMING

Growing garden fresh vegetables in Wyoming

How to test the health of your soil

Featured landowners: Dennis and Lucile Taylor

Rest, recovery key to small-acre pasture management

Portable fencing helps eliminate overgrazing

Native and non-native plants

Get control of weeds on your place

Raising chickens begins with basics

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Native & non-native Weeding

Invasive, non-native weeds have caused serious problems for years.

Sometimes, these problems are primarily economic. For example, land values can be reduced 60 to 80 percent due to serious infestations of invasive non-native weeds such as leafy spurge or one of a number of knapweeds. Economic damage often results from reduced land productivity and the expenses associated with managing these problem plants using chemical, biological, and mechanical approaches.

Ecological damage can also occur and, in many cases, is hard to put a price tag on. Some invasive, non-native weeds can transform native plant communities into almost a monoculture of the invader. This can completely change an area to the point where the benefits the land previously provided to society and wildlife are lost.

There are many beneficial non-native plants. Here, non-native plants were used to stabilize and revegetate abandoned tailings piles from mining activity. This mix of non-native plants includes species known not to be invasive such as orchard grass, bromes, timothy milk vetch, and alfalfa.

There is no question our worst problems are caused by invasive plant species that are not native to North America, but does this mean that all non-native species are bad?

Consider the following:

1) Non-native species are typically invasive.
2) Invasive species are typically non-native.

Which is more accurate? Given the magnitude of problems caused by invasive non-native plants, it may be tempting to accept statement 1 as fact; however, statement 1 is not very accurate. Of the thousands of plants that have been purposely introduced to North America, far less than 10 percent have escaped cultivation and become problematic invaders. Many of the plants used for crops, landscaping, and other applications are not native to North America but were brought here from other continents. Most of these are generally considered beneficial plants.

The patch of plants growing in the center of this picture shows how some invasive non-native plants can grow in almost pure stands often called monocultures. In this example, the invader is a perennial plant called Russian knapweed. There are several species of knapweed that are aggressive, non-native invaders.

Statement 2, on the other hand, is very accurate. Our most problematic invasive plants are not native to North America. Many are natives of Europe or Asia and have been introduced to North America either on purpose or by accident. Intentional plant introductions include those used for agriculture, as ornamentals, or for soil stabilization. In the 19th century, there were groups known as acclimatization societies, whose main mission was to bring species from the Old World to North America to determine which ones would survive here and be used to benefit life in the New World. As a result, plant introduction has been going on for quite some time. A small percentage of these intentionally introduced plants have escaped and become problem plants.

plants:
out the bad from the good

There are also a number of ways non-native plants are and have been introduced to North America by accident. Some were introduced because their seeds were mixed in with the seeds of plants intentionally introduced as crops or ornamentals (seed contaminants). Others attached themselves to animals or humans and were brought in as "hitchhikers."

Some of our worst problem invaders were introduced in soil used by ships, which would commonly use soil from their country of origin to provide weight stabilization for the trip to North America. When cargo was loaded in a North American port, a portion or all of that soil would have been offloaded here in North America.

So what? Who cares, and what does it mean for life in Wyoming? First, it is important to remember not all non-native plants are problem invaders. Actually, many have proven to be beneficial to society, including food production and landscaping, and may even be ecologically benign. Some are important for revegetating previously disturbed land, creating and improving wildlife habitat, or helping manage problems caused by invasive weeds.

That being said, landowners should use caution when selecting seeds to plant. Recall that, although not all non-native plants are invasive, our worst problem invaders are non-native. Stay away from seeds identified as "aggressive," that "may escape cultivation," or that are "difficult to remove after establishment." There is a pretty good chance these will end up as future problem invaders.


Here is another problematic non-native invader. Leafy spurge is fairly common in Wyoming and is another example of a very aggressive perennial plant.

Finally, familiarize yourself with the designated noxious weeds and other problem invaders in Wyoming. These are plants already known to cause big problems, and the reality is you can still buy seeds for many of these from a number of sources. It is strange and disturbing but true.


Pictured are two aggressive non-native invaders. The plant on the left with pink flowers is spotted knapweed, which prefers relatively moist, or slightly higher elevation, areas. Diffuse knapweed on the right with white flowers does just fine in relatively drier areas and lower elevations. Some close relatives of these two can still be purchased for ornamental purposes and many Centaurea spp. can be found in seed mixtures – buyer beware!

Local offices of the University of Wyoming Cooperative Extension Service (UW CES), federal Natural Resources Conservation Service, county weed and pest control districts, and conservation districts can provide information on problem plants.

Consider the use of native plants, but resist concluding a plant must be native to be "good." The availability of native plant material is improving, and prices are becoming more competitive.

Taking a few simple precautions when it comes to selecting plants can go a long way when it comes to helping Wyoming weed out the bad from the good.

Paul Meiman is a UW CES state range specialist stationed in Lander. He can be reached at (307) 332-1840 or by e-mail at pmeiman@uwyo.edu.

Portable fencing creates multiple paddocks, helps eliminate overgrazing

Grass needs grazing to thrive and a rest period to recover.

Overgrazing is really a function of time and not necessarily acreage, stock numbers, or even stock density. A good rotational grazing system grazes the grass plant once then allows an adequate rest period for the plant to recover.

Electric fencing can be the most cost-effective method of controlling the time stock graze a given area. Don't hesitate to seek help with a grazing or watering plan and fence design and placement. There are many configurations that allow control of many species, including horses, cattle, sheep, and goats.

Another factor that will influence the design is wildlife. A fence that must coexist with deer and elk may have a substantially different design than one that does not.

Permanent, multi-strand, high-tensile electric systems are a good choice for the perimeter of a pasture. The number of wires will vary according to the animal involved. Horses and mature cattle can quite often be contained with three wires while small calves, sheep, and goats may require five or six.

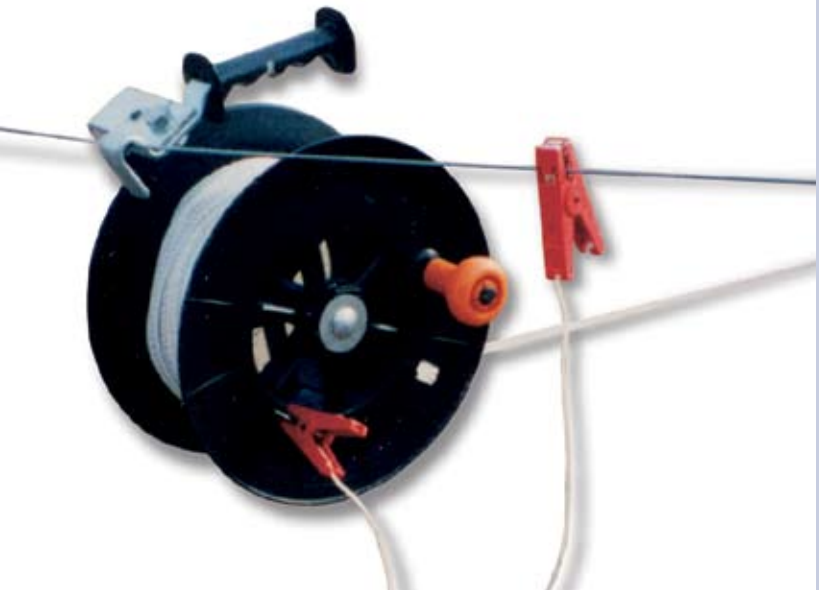
There are two common mistakes people make when trying high-tensile fencing for the first time: Posts too close! Wires too tight!

Post spacings of around 50 feet are adequate. The wires should be tightened just to the point of removing most of the sag between posts. Solid fiberglass posts have proven the best to use in areas with snow loads and wildlife. There are no plastic insulators to break, and the flexibility of the post helps to overcome side loads.

For interior cross-fences, a mixture of high-tensile permanent and portable "polywires" and tapes often prove best. Try to create paddocks by placing several permanent cross-fences on obvious topographical changes, not forgetting to include stock water inside the paddock or access down a lane to the water. Ditches can also be a water source if grazing irrigated pasture. Two wires are usually adequate for mature cattle and larger calves, while three wires are a better choice for horses or cattle with smaller calves.

Use portable "polywires" and "polytapes" on handy reels for some internal fencing. Plastic "treadin" posts with multiple wire lugs are the most adaptable. They can be placed at 30- to 50-foot spacings and the wires tightened by hand. One charged wire may be sufficient on irrigated pasture with horses and mature cattle but, when on dry soils or winter-grazing on frozen soil or dry snow, a ground wire run with a hot wire may be needed. Spacing between the wires is very important and is dependent upon the animal.

Portable fencing allows the greatest flexibility in changing paddock size and allows rotations to match the growth of the plant. Aim for the shortest



grazing period per paddock needed to harvest the available forage, say one to four days, then a minimum 30-day rest period during fast plant growth. As plant growth slows, adjust to five to 10 days grazing and 60 to 80 days of rest per paddock. Multiple paddocks are needed to reach these levels of rest but, by subdividing with portable electric fencing, it becomes achievable.

There are also a few methods of constructing the fences to help in maintenance and troubleshooting.

The heart of any electric fence system is the power source or energizer. A 110-volt plug-in energizer is generally recommended over a battery or solar unit because more of one's dollars can go to power and not batteries, solar panels, etc. This is not to say a battery unit is unacceptable; they are a great choice but only if you don't have 110-volt power available. Also, get specific recommendations as to the size of the energizer by matching it to the job at hand: How long is the perimeter fence? What type of animal are you controlling? Does the fence run through high vegetation? Will you add on to the system eventually?

All these questions will help a supplier match an energizer to one's needs.

Lastly, consider investing in a digital voltmeter designed to monitor fences and energizers. They are hand-held meters that measure the voltage output of an energizer or at any point along a fence line. They are invaluable for diagnosing any problems.

Morgan Renner of Meeteetse is the territory manager for Gallagher Animal Management Systems and can be contacted by calling (307) 868-9274 or by e-mail at ucme4shox@tctwest.net.

Barnyards & Backyards workshops

Practical information for rural living enthusiasts

These workshops will have speakers and sessions that will help every landowner better manage their land. A combination of classroom and hands-on activities will give attendants tools they can use.

April 22, Casper
Contact Tom Heald, Natrona County Cooperative Extension Service office at 235-9400 or theald@natronacounty.wy.gov

May 13, Cheyenne
Contact Laramie County Conservation District at 772-2600

May 18, Wheatland
Contact Platte County Cooperative Extension Service office at 322-3667

For details on these and other events happening across the state, visit www.barnyardsandbackyards.com/ and click on "Events"

Growing garden VEGETA

Gardeners like to stir the soil in Wyoming, where soils are notoriously lacking in organic matter.

To produce garden fresh vegetables, we must take care of the soil. Building organic matter increases soil friability or "crumbliness," improves the ability to till, facilitates aeration and water penetration, and improves the moisture-holding capacity. It also provides a source of many plant nutrients.

Good sources of organic matter include sphagnum peat moss, composted leaves and grass, and composted livestock or poultry manure. Composting the material kills weed seeds. Each year, till in a couple of inches of compost to enhance the organic matter of your garden. The publication *Backyard Composting: Simple, small-scale methods*, B-974R, is available at http://www.uwyo.edu/CES/PUBS/b974R.pdf

Use caution if using manure on a garden. I hauled in a load of manure from a friend's feedlot and spread it on my garden many years ago. It wasn't composted manure (the weed seeds weren't dead). I never used to have to hoe out purslane until then. To this day, I'm still fighting that @#%#@#@ weed. It reproduces vegetatively. If I leave a piece of it in the soil, it will reproduce from that piece. Believe me; you don't want this weed in your garden if you don't already have it.

Adding lime as a soil amendment is not recommended for Wyoming soils, which tend to be alkaline. Lime is added to soils in the eastern United States, which are acidic. Sulfur can be a helpful soil amendment on Wyoming's highly alkaline soils. Applying sulfur at up to a half-a-pound per square foot is recommended on high pH soils. Most garden sites will do fine without the addition of micronutrients or sulfur.

Nutrients

Do you want to grow an organic garden without the use of commercial fertilizers and herbicides to control weeds? Patience is one key to success. Organic gardeners must provide needed plant nutrients with organically produced manures or green manures (leftover plant material, such as sweet clover, tilled back into the soil before it turns brown). Weeds must be tilled, pulled, or burned out. Manures do not work like commercial fertilizers. Soil microbes take considerable time to break composted manures down to release needed nutrients for the plant. Commercial fertilizers release needed nutrients within days of application.

Ammonium nitrate, one of the more popular nitrogen fertilizer products, will no longer be available to the farming and gardening community. The product, a main ingredient for bomb making, is being taken off the market in part because of homeland security reasons. Urea-based products will replace ammonium nitrate.

University of Wyoming research conducted at the UW Powell Research and Extension Center shows that Agrotain-treated urea offers one option as a dry granular product to replace ammonium nitrate granules. Agrotain inhibits the activity of the urease enzyme, which converts urea to ammonia, according to the research. Urea without Agrotain can quickly be released into the air. When purchasing granulated nitrogen, make sure it contains a stabilizer such as Agrotain.

A problem I often see in the garden is sprinkler irrigation. I recommend furrow irrigation or, better yet, a drip irrigation system. Sprinkling water on big-leaved plants like squash, tomato, watermelon, etc., will subject the plants to disease problems. The splashing water droplets from the sprinkler will pick

fresh BLES in Wyoming

up and spread bacterial disease organisms, such as early blight on potatoes and tomatoes, from plant to plant like a firestorm. The water droplets also provide a wonderful environment on the plant for fungal diseases. Furrow irrigating keeps water off plants.

Weed management

Weed-control options in the garden include plastic mulches in the form of plastic landscape fabrics, which work particularly well with transplants like tomatoes and peppers. Organic mulches like bark or weed- and herbicide-free grass clippings added between the rows will help suppress invading weeds. Be careful not to overdo grass clippings. Too much too close to a plant can do more harm than good; they will cut off needed oxygen and suffocate the vegetables we work so hard to grow.

Preen® is an example of a pre-emergent herbicide that can be applied to garden soil at planting time. The active ingredient, trifluralin, will control weed seed as it germinates, yet it is selective for a wide variety of vegetables in the treated garden. It will work well in the flower garden, too. Preen is short-lived in the soils so it should not be applied too much ahead of planting. Selectively spraying weeds with a herbicide such as Roundup® or other glyphosate product is an option. Be careful not to let the product drift onto your or a neighbor's precious vegetables or flowers when using it around the garden.

The publication *Gardening Vegetables in Wyoming*, B-1115, is an all-around gardening source. It is available at http://www.uwyo.edu/CES/PUBS/B1115.pdf. Downloads are free or a hardcopy version can be obtained by e-mailing the College of Agriculture's Resource Center at bixbyd@uwyo.edu, calling the center at (307) 766-2115, or writing to the University of Wyoming, College of Agriculture, Department 3313, 1000 E. University Ave., Laramie, WY 82071.

We in the UW Cooperative Extension Service (CES) are proud of our heritage in helping homeowners and gardeners achieve their production goals! Every county in the state has a CES office. We can be found in the phone book in the county government section. County CES office contact information is also available on the Web at http://www.uwyo.edu/UWces/Counties.asp

Other resources:

Gardening: Extending the Vegetable Growing Season– http://www.uwyo.edu/ces/PUBS/B1148.pdf

Gardening: Hot Beds & Cold Frames– http://www.uwyo.edu/CES/PUBS/B1151.pdf

Landscaping: Water-wise Wyoming Gardens– http://www.uwyo.edu/CES/PUBS/b1143.pdf

Jim Gill is a CES educator serving Park, Big Horn, Washakie, and Hot Springs counties. He can be reached at (307) 347-3431 or by e-mail at jrgill@uwyo.edu

Getting the

HOW TO TEST

Soil tests can help assess the quality of a specific field for growing a crop or a garden plot, whether it is grass, alfalfa, vegetables, or flowers.

There are many types of tests available. If production has been acceptable to the owner and there are no obvious problem areas in fields or gardens, a standard fertility test (nitrate, phosphate, organic matter, pH, salt estimate, qualitative lime, and texture) or a standard fertility test plus potassium, iron, and zinc may be all that is needed. Your local University of Wyoming Cooperative Extension Service (UW CES) county educator or the UW Soil Testing Laboratory in Laramie can help determine needed tests. The standard fertility test will provide valuable information to help growers make decisions about fertilizer application.

TIMING

Soil sampling a few weeks before fertilizer application is usually best. Equipment and time constraints can sometimes prevent this, and samples are taken at other times. Nutrient content will change over time. Some nutrients leach, and others can be released and made available from the organic matter or the mineral material in the soil. It is important to be consistent with the timing so results can be compared year to year. Establish a sampling time that suits your management practices. Keep records showing production results. Remember, fertilizer recommendations are based on average performances, and other factors (sample timing, water, slope, etc.) may require slightly increasing or decreasing the suggested rates.

WHERE

Next, identify the areas to sample. There are three basic approaches to choosing these areas – whole field, grid sampling, and management-unit sampling.

If using the whole-field method, take 15 to 20 cores from random areas in the field. The cores are mixed together in a clean bucket, and a representative sample is sent to the laboratory for analysis. Unusual areas in the field such as salt deposits, animal watering or feeding areas, and old building sites should be avoided. The whole-field method treats the entire field in the same manner and can result in over fertilizing some areas and under fertilizing others.

With grid sampling, the field is divided into uniform cells, usually one to two acres in size. Ten to 15 cores from random areas within each cell are taken. Avoid unusual areas. Grid sampling usually results in more accurate estimates of nutrient availability. If variable-rate fertilizer application equipment is not available, growers will not be able to take advantage of that accuracy. It requires many samples for one field and can be expensive.

A compromise between whole-field and grid sampling is the management-unit approach. Divide a large field into several smaller sampling areas based on known characteristics. These may be soil type (from soil survey data), historical management differences, yield data, or aerial photographs that show distinct differences in plant growth. Fifteen to 20 random cores are taken from each management-unit area.

Straight Dirt

THE HEALTH OF YOUR SOIL

TAKING THE SAMPLE

A good soil test requires collecting good soil samples. First, decide if surface (0-6 inches or 0-8 inches) samples will be taken or if surface and deep samples (to 2 or 3 feet) will be taken. Deep samples are only tested for nitrate. A fertility recommendation can be made from the surface sample only, but nitrogen recommendations are more accurate if deep samples are also taken.

Start with clean tools. A plastic bucket and a shovel are all that are needed; however, a soil probe, which removes a soil core, makes taking consistent samples easier. To sample, remove the debris from the top of the soil and use a soil probe to remove a 6- or 8-inch-long core. If using a shovel, dig a hole and then shave a 1- to 2-inch slice off the side of the hole to a depth of 6 or 8 inches. Make sure the slice is as thick at the bottom as at the top.

Go to other random sampling areas and repeat the process. Mix the cores or slices well, and discard any large stones. The soil should be spread on a clean surface and allowed to dry in the shade. Mix the soil again, and put about a quart of soil in a clean plastic bag. Do not dry it in the oven or microwave to speed the process. This will ruin the sample.

SUBMIT YOUR SAMPLE

You are now ready to send your sample for testing. The more information provided to the laboratory, the better the quality of the fertilizer recommendation. Watering schedule, method of irrigation and water source, condition of current plant life, expectations for future plant life, depth of soil, drainage, and the type of fertilizer used are all considered when making a fertilizer recommendation.

Soil testing information sheets can be obtained at any UWCES office or online at http://www.uwyo.edu/CES/PUBS/MP6.2.pdf

The laboratory charges $20 for the standard test, which includes pH, salts, organic matter, phosphate-phosphorus, nitrate-nitrogen, lime, and texture.

Kelli Belden is a research associate in the Department of Renewable Resources and is director of the UW Soil Testing Laboratory. She can be reached at (307) 766-2135 or by e-mail at soiltest@uwyo.edu.

featured

Ranch's goat production

Dennis and Lucile Taylor

Nestled in the foothills of the Laramie Mountains near La Prele Reservoir, Dennis and Lucile Taylor operate their Wyoming Boer Goat Ranch about 20 miles southwest of Douglas.

His great-grandfather, Dennis Leman, homesteaded there in the mid-1870s, and the bedrooms in their house occupy the original cabin.

Lucile is the county clerk for Converse County, a job that keeps her busy, and Dennis holds down a part-time job outside the ranch operation. Altogether, it makes for a very long and busy day.

Dennis chuckles while pointing out he is a fourth-generation rancher but a first-generation goat rancher.

Dennis and Lucile started the goat operation in 1995. This east-central area of Wyoming underwent five years of drought, and Dennis said he had to sell most of his cattle. He kept 10 head and is rebuilding the cow herd. They also have horses.

In 1995, he purchased some dairy goats to help his sister feed some bum lambs. "I originally bought some goats to feed some orphan lambs and then developed an interest in the meat-type goat," Dennis says.

The couple made the choice to raise Boer goats, which are bred for their meat, in 2001 when they purchased 27 head from a breeder in Oklahoma City, Oklahoma. The couple's Boer goat herd consists of 100-125 does – 35 registered and the rest are full blood or percentage blood does. Many may not understand that Boer means "farmer" in their country of origin – South Africa.

Goat meat is an important food source. The American Meat Goat Association lists goat meat as the most widely consumed meat in the world. Goat has a strong ethnic significance and is a major food in the diets of many ethnic cultures throughout the world.

Although interest in raising Boer goats for meat is strong, the Taylor's most enjoyable reason for raising them is to see the response between youths and goats.

"You cannot believe the magic that happens between a child and a goat kid when a young person owns a goat of their own," Dennis quickly points out. "It's pretty much raising kids to help raise kids."

Goats have the perfect personality for youth projects. They are not aggressive but are smart, social animals that love to follow you, are easy to trim and handle, yet small enough for children to work with. Ultimately, they develop a special bond with children, he says.

Dennis says he first noticed the kid-kid relationship while watching his grandchildren playing with goats in the corral. "The kid (goats) and the kids were having a blast climbing in and out of the bunks and jumping from one spot to another," Dennis says.

The goats also have an effect on adults. His oldest daughter teaches and coaches volleyball at a school in Idaho Falls, Idaho, and he notes, "When she gets home you can catch her in with the goats just wandering around watching them. I don't know. Maybe it's stress release."

The grandchildren also show the goats at regional competitions. "At every show, you can see the interaction between goats and kids. Great 4-H projects," says Dennis.

Boer goats are also very versatile. Goats can transport supplies into an area on small carts, and many are used in the mountains as pack animals by wildlife and wilderness enthusiasts due to their easy manageability and low impact on the environment. The goats are also used to reduce plant materials around buildings by grazing, thus reducing the chances of wildfire. Boer goats can control weed infestations in environmentally sensitive areas near streams and lakes where most herbicides cannot be safely used.

landowners began in response to drought

Fencing is the most important consideration for herd management. A woven wire fence with 9-inch spacing on one side of the fence post and two electric fence wires on the inside of the pen seems to work best.

"You have to have the 9-inch woven wire for Boer goats because of the horns," says Dennis. "The goat will get its head through the spacing but cannot get it back out if the opening is any smaller, and it will eventually choke down and die. The electric wire keeps the goats from rubbing the other wire down – and they will rub it down without it."

Producers may want to give consideration to hiring a herder if the goat operation is going to be large or if the goats will be used for vegetation control.

Dennis is on the board for the Mountain States Meat Goat Association that represents Utah, Idaho, Nebraska, Colorado, and Wyoming. The association promotes and markets meat-type goats. Does and bucks are marketed by a cash price, while wethers, a castrated goat, usually sell by a contract for a specific weight range.

The problem in Wyoming is getting enough goats at market weight to make up a required load (600 70- to 80-pound goats).

The potential for the small-acreage landowner plays a critical role in the marketing process. "With several people producing small numbers of goats, it gives us the chance to put together more loads at the ideal weight. It also allows us the opportunity to sort the goats for more uniformity," says Dennis.

Dennis indicates he and his wife initially did not write a business plan for the operation; however, since 2001, he has received help from the Converse Area New Development Organization and has written a business plan.

"The business plans helps you focus on the business. It helps to write down your goals, see what the business is doing, and change some things you have always done in the past that were not working that well," he says.

Dennis is in the process of receiving certification as an American Boer Goat Association judge and would like to judge meat-goat shows. He could be the first certified Boer goat judge in Wyoming.

Anyone with an interest in raising Boer goats can go on-line to the Livestock for Landscapes Web site at http://livestockforlandscapes.com or the American Boer Goat Association www.abga.org.

Milt Green is a UWCES educator serving Natrona, Converse, and Niobrara counties. He can be reached at (307) 235-9400 or by e-mail at mgreen@natronacounty-wy.gov.

Rest, recovery key to small-

"Do you know anyone who has extra pasture for lease? I'm a little short this year."

It's a question I hear all the time about a common problem, especially during the last few years of drought.

Those who pasture livestock, whether one 4-H horse or hundreds of beef cattle, are, in reality, grass farmers. We raise and care for grass and other herbaceous plants, which are then harvested by our animals. A grass plant's health, and ultimately the soil's water and mineral cycles, are directly related to the type and duration of grazing we allow. Notice I say "we allow." If your critters are dictating how you graze, there may be a better way!

Most grasses evolved with grazing and so are equipped to respond to grazing. In fact, some grasses need grazing, fire, or some other type of top-growth removal to survive. One of the adaptations many grass species use to their advantage in a grazing environment is locating their growth points close to the soil surface as opposed to up in the air where they may be removed by grazing animals. The growth points for most other plants, shrubs, and trees are located higher on the plant and, if you remove it, their growth pattern may be severely altered. Removal of the growing points may cause these plants to hedge out, or their growth may be entirely curtailed.

Not so with those grass plants whose growth points are down in their plant crowns . They're built to not only survive grazing but thrive with it if managed properly.

Let's think about a grass plant's mission – to make its own food. To do this, grasses capture solar energy from the sun and absorb carbon dioxide from the air. These inputs, combined with water and minerals absorbed from the soil through the root system, allow plants to produce sugars and starches to fuel their own growth. Plants rely heavily on their actively growing leaves for the capture of solar energy and the uptake of carbon dioxide. Because of this, it is very important to provide grass plants with opportunities to grow in the absence of grazing pressure so that they may benefit from their actively growing leaves.

The key is rest – the recovery period between grazing events. If the plant is grazed a second time too quickly – before the leaf area is large enough to support growth – its health and production can be expected to decline. This is actually a good definition of overgrazing: biting an individual grass plant a second time before it has had adequate time to recover from the first bite.

Giving that plant sufficient time between bites will build root mass and leaf production and may boost plant vigor. If not, the results are dwindling roots, slower leaf growth, the inability to recover from grazing, and lots of bare soil.

Do you know any good examples of this scenario? How about your yard? Does it rest between "grazings"? Is it thicker and fuller than your pasture? I bet it is, and I bet you "harvest" it by mowing it repeatedly all summer! You may be able to do the

acreage pasture management

same with your pasture by changing from season-long grazing to "rotational" or "intensive" grazing.

Modern electric fencing (see related article on page 4) is the easiest method to subdivide a pasture into paddocks and begin rotational grazing. Portable electric polywire lets landowners match the speed of the rotation to plant growth. Because plants grow fastest in the spring when soil moisture typically peaks and then slower for the remainder of the growing season, it is critical to rotate "fast during fast growth, slower during slow growth."

Think about this for a minute. If our objective is to graze the plant once then rest it adequately so growth can resume and root reserves aren't dipped into before it is bitten again, this stands to reason. An actively growing plant will recover faster than one that is in the slower growth phase later in the summer. As for winter grazing, the plant is not actively growing and will not suffer root damage. This can be beneficial as it removes old leaf matter and clears the way for a fresh start for the plant next spring.

So, what benefits might you realize from this type of grazing? There are many, including tighter plant spacings, improved soil fertility, new plants started by hoof action, faster manure breakdown, less fly and pest bother, higher production (meat, milk, wool, etc.) per acre, and stockpiled grass for winter grazing – less hay expense!

Many people report the ability to graze twice the normal stocking rate per acre or more when shifting from continuous grazing systems to those incorporating adequate rest periods.

Morgan Renner of Meeteetse is the territory manager for Gallagher Animal Management Systems and can be contacted by calling (307) 868-9274 or by e-mail at ucme4shox@tctwest.net.

Where can I turn for more information?

Electric fence design and dealers:

Gallagher Animal Management Systems
http://www.gallagherusa.com/pf.types.aspx

High Country Ag Marketing Inc.
http://www.hcam.net/

J.L. Williams Company
http://www.safefence.com

Morgan Renner, territory manager, Gallagher Animal Management Systems
e-mail: ucme4shox@tctwest.net

Tru-Test
http://www.trutest.co.nz/speedrite_new

Grazing planning:

Rangelands West Consortium
http://www.rangelandswest.org/

Holistic Management International
http://www.holisticmanagement.org/

University of Wyoming Cooperative Extension Service
http://www.uwyo.edu/UWces/Counties.asp

Wyoming Association of Conservation Districts, local offices
http://www.conservewy.com/

Natural Resources Conservation Service, Wyoming
http://www.wy.nrcs.usda.gov/technical/rangemgt/range.html

Oregon Small Farms Pasture Management
http://smallfarms.oregonstate.edu/pasture/

Small Pasture Management Guide for Utah
http://extension.usu.edu/files/agpubs/pasture.pdf

Get control of

A weed warrior's se

Weed control can be frustrating – time, money, and sweat thrown at a problem that doesn't seem to get any better.

There is a recipe for success, and that "recipe" is better now than ever. This "recipe" will be outlined in the next several issues of *Barnyards & Backyards*. This spring, let's start to get control of weeds.

Equipment and Resources

- *Weeds of the West* is a comprehensive book that shows and describes important weed species in the western United States. It is available through local weed and pest control districts or the University of Wyoming Cooperative Extension Service (UW CES). Wyoming weed and pest district addresses are at http://www.wyoweed.org/wp_dist.html. County CES office information is available at http://www.uwyo.edu/UWces/Counties.asp
- *Weed Management Handbook, 2006-2007* is a quick and ready reference of weed control practices used in Wyoming, Montana, and Utah. It is available free at https://uwadmnweb.uwyo.edu/UWCES/WeedManagementHandbook.asp. A book may be obtained for $15 by e-mailing the College of Agriculture's Resource Center at bixbyd@uwyo.edu, calling the center at (307) 766-2115, or writing to the University of Wyoming, College of Agriculture, Department 3313, 1000 E. University Ave., Laramie, WY 82071.
- *UW Wyoming Weed Identification Site: Identifying Weeds by their Photos* at http://www.uwyo.edu/CES/WYOWEED/NewWYOweedSite/WeedsByLeafs.htm

- A "backpack sprayer" – these simple, rugged sprayers should be standard equipment for every weed warrior and are available through local feed and hardware stores and local weed and pest control offices. Calibrate the backpack so you know how many gallons per acre it will treat under your spraying conditions. Contact your local weed and pest district office, a local CES office, or visit this Web site http://www.team.ars.usda.gov/herbicidemanual.pdf, pages 22-24, for calibration procedures.

WEEDS on your place

asonal approach...spring

Local weed and pest districts can offer treatment recommendations and tips on weed identification, spray equipment calibration, and biocontrol options. They have equipment for loan and rent. They are there to help you, the landowner. Use them!

Weed Control Basics

There are four basic processes involved in weed control:

Education – Learn to identify weeds and their life history and habits. Learn about herbicides, biocontrol, and weed science.

Prevention – Prevent weeds from coming onto your place and establishing (i.e., feed certified "weed-free" forage wherever possible) and avoid tracking in weed seed by vehicles, pets, or other means. Catch tumbling weeds in winter with temporary snow fences then bag and dispose of or burn them. Minimize bare or disturbed ground areas with proper livestock management, and contain vehicles to roadways.

Control – Mechanical (mowing, cultivating, and digging up), chemical (herbicides), biological (using natural insect predators), and cultural (see Competition, below) practices can effectively be used. Many weed species respond well to a combination of two or more control methods. Some hard-to-control perennial weeds can only initially be controlled with herbicides.

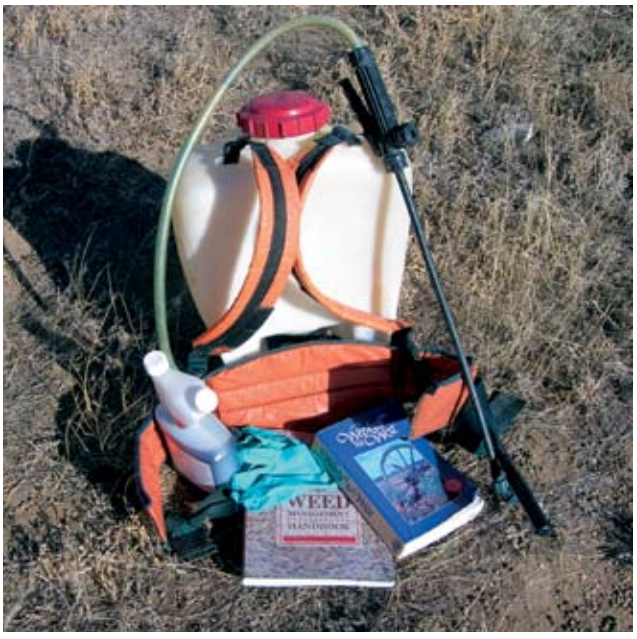
Competition – Using competitive, adapted, and desirable plants to outcompete future weeds after initial control is the real key to long-term success.

Spring Weed Control

The main focus this time of the year is annual weeds (plants that germinate, flower, set seed, and die in one year – a one-year lifecycle) and early biennial weeds (those plants that germinate, produce a plant the first year, then come up the second year, flowers make seed then die – a two-year lifecycle). When treating annual or biennial weeds, there are three things to remember. You are trying to control: 1. The weed that can be seen (germinated plant), 2. The "seed bank" (dormant seed from previous generations) in the soil, which can remain viable for several years, and 3. New weed seed from coming into an area.

The goal is to keep these plants from producing seed for several generations (several years). Treat these weeds before they go to seed for several years, thereby wearing out the seed bank in the soil.

Annual/biennial weed species often germinate at different times during the spring, so keep a close eye on weeds, and treat each species before it makes seed! This will entail several treatments during the spring. When starting treatment of annual/biennial



weeds, start a "control clock" – in other words the number of years it will take to wear out the seed bank and get control of the weeds. If a generation is missed or a bunch of seeds are imported into the treatment area, the "control clock" is reset to day one! This simple fact is the number one reason many annual/biennial weed-control efforts fail.

Chemical control is often the most effective means for spring weed control. Contact a local weed and pest district office for specific recommendations. Mechanical control can be effective on annual and biennial weeds. Mowing often close to the ground can prevent seed production in many species. Hoeing or pulling weeds can also be effective; however, avoid rototilling, as this can bring another seed bank into the germination zone (top 2 inches of the soil).

Many perennial noxious weeds have spreading, reproductive root stock that, when chopped up in cultivation, generate new plants! Canada thistle, Russian knapweed, and field bindweed are three examples of plants spread through cultivation.

After this initial season of successful control measures is employed, it is time to implement competition! Plant highly competitive, adapted, and desirable plants in bare-ground treatment areas. Grasses are often a good choice as many species fit the above criteria and, after they are established, broadleaf weeds can be spot treated using a broadleaf selective herbicide. See a county weed and pest and/or CES office for specific herbicide(s) and competitive plant(s) recommendations.

Conclusion

Let's educate ourselves about weeds and weed science, prevent future weed problems, and control the weeds we have EVERY YEAR until good control is reached.

Start to establish competition with desirable, adapted, and competitive plants to prevent future weed infestations. Weed control for those hard-to-control noxious weeds will be addressed in upcoming issues of *Barnyards & Backyards*. Noxious weeds are those plants that are exotic (come from another continent), invasive, AND harm the environment. This is important to remember as these weeds are rapidly destroying many native ecosystems. We all must fight this scourge of noxious weeds to help preserve our wonderful Wyoming!

Brian Connely is the education coordinator at the Natrona County Weed and Pest Control District and can be reached at (307) 472-5559 or by e-mail at brianwp@alluretech.net

Raising chickens begins with basics

Hopeful chicken producers can feather their nest egg and have the enjoyment of raising their own animals by following some common-sense guidelines.

Do you want to raise chickens for egg production or meat? Chickens for laying eggs are layers, and those that produce meat are broilers.

Successful poultry producers take care of many details to ensure their animals are comfortable. Starting with healthy hatchlings and maintaining their health is extremely important. Hatchlings should be obtained from a reputable hatchery with a history of producing healthy birds

Identifying the difference between a healthy bird and an unhealthy bird is important. A healthy bird will be alert, bright eyed, and full breasted, and it will have erect posture, clean feathers, a bright and full comb and wattles (the skin on top of the head and under the chin), and clean nostrils. A healthy bird will drink plenty of water and eat with frequent eagerness. The stool (manure) will be moist and grayish in color with a white cap.

An unhealthy bird will have a decreased appetite and will not drink as much**.** It will also appear listless, depressed, shrunken, and dull eyed. The stool may be very dry and hard (constipation) or just the opposite – very watery and loose (diarrhea). If a bird appears to be sick, separate the sick animal from the other birds. After getting advice from a veterinarian or other professional, follow that advice very carefully.

Most health problems can be avoided or kept to a minimum by following these five simple steps:

* Buy only healthy birds from healthy flocks.
* Keep vaccinations up to date.
* Clean coops at least once a week.
* Clean feeders and waterers at least once a week; twice a week is much better.
* Immediately remove and replace wet or dirty bedding.

A bird needs a proper home (called a coop) as well as proper care, feeding, and watering. The

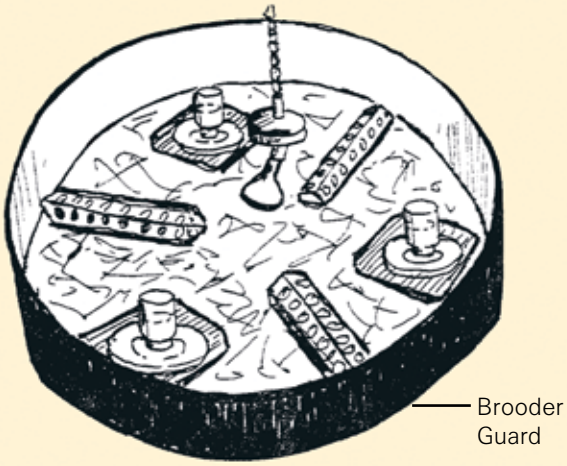


Figure A – Brooder set-up recommendation

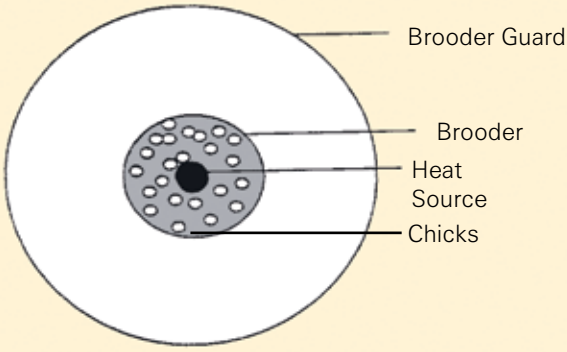


Figure B – Too cold

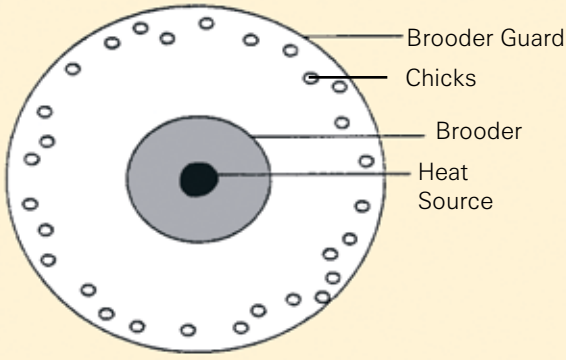


Figure C – Too hot

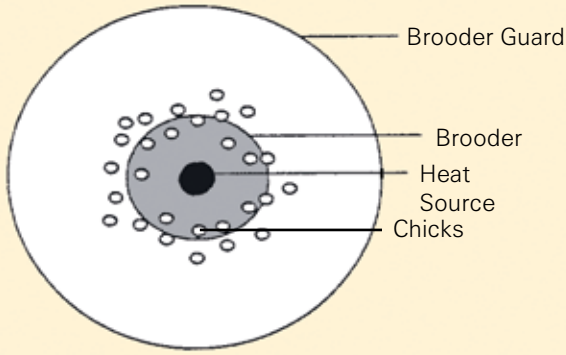


Figure D – Just right

basic requirements of poultry housing are simple:

* Space for resting, feeding, watering, and movement.
* Protection and escape from the weather and from predators.
* Adequate ventilation to avoid stale air and moisture buildup.

Space requirements vary according to the species and type of bird. Smaller birds such as bantams require 2 to 3 square feet of floor space, and egg-production birds take about 3 square feet of floor space. Larger chicken breeds and ducks require 4 to 5 square feet of floor space. Large birds such as geese and turkeys need even more room.

Clean and disinfect a brooding house (a structure used to raise hatchlings before moved into a coop) and equipment before each new set of hatchlings arrives. Place 4 to 6 inches of bedding such as wood shavings, sawdust, chopped straw or similar materials in the brooder when it is dry.

A 250-watt infrared heat lamp 15 to 18 inches above the bedding easily provides heating. It should be turned on the day before the hatchlings arrive to allow time for temperature adjustments. Use a rope or chain to hang the heat lamp. The recommended temperature for the first few days is about 90 degrees. If hatchlings crowd under the heat lamp, they are cold. If they move away from the heat lamp, they are hot. If they are scattered and dispersed in the brooder, they are comfortable. Move the heat accordingly. **Figures B, C, and D illustrate each of these situations when viewed from above.** Decrease the temperature by 5 degrees after the first week, and then decrease it by 2 to 3 degrees every third or fourth day until the temperature is between 70 and 75 degrees**.**

Waterers and feeders should be alternately placed around the edge of the brooder and not placed directly under a heat lamp. Fill the feeders and waterers the day before the hatchlings arrive. **Figure A provides an illustration of a typical setup.**

Nutrition requirements are different for each type of bird. Pullets are female birds under 1 year old. Twenty percent is recommended for younger pullets (under 8 weeks old), and the guideline for older pullets (8 to 20 weeks old) is 16 percent.

The recommendation for laying hens is 15 percent protein. Broilers should receive feed with a protein content of at least 24 percent.

Hens and pullets lay more eggs as the hours of light increase. Use electric lighting to make chickens produce more eggs. Layers need about 15 hours of light per day (do not allow the light period to decrease). A 40-watt bulb will provide enough light for approximately 100 layers and enough light for brooders up to 20 square feet in size. Pullets will start laying eggs at about 22 weeks old under normal conditions. Hens will average laying approximately 260 eggs per year.

In addition:

- Provide vitamins in the water. Commercial feed contains vitamins and minerals, but they should also be provided in the water because all birds, even sick ones, will drink water after they go off feed.
- Provide medications as needed. These are usually best given by adding them to water. Be sure to follow all label recommendations for medications.
- Gradually change from one ration to another ration specific to the animal and age. Mix them together (first more of the original and then more of the new one), and make the change over three to four days.
- Control rats and mice as much as possible since they can spread disease.
- Isolate a flock, limit visitors, and keep dogs, cats, and pets away from a coop.
- Only keep birds of a similar age together.

Stephen Schafer is a 4-H youth development specialist with the University of Wyoming Cooperative Extension Service and can be reached at (307) 766-5027 or by e-mail at sschafer@uwyo.edu.

University of Wyoming
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Wyoming Private Grazing Lands Team

This newsletter is a publication of the Small Acreage Issue Team, a cooperative team of the University of Wyoming Cooperative Extension Service, Wyoming Association of Conservation Districts, Historic Trails Resource Conservation and Development Council, Wyoming Private Grazing Lands Team, the Natural Resources Conservation Service, and the Wyoming State Forestry Division.

University of Wyoming
Cooperative Extension Service
1000 E. University Ave.
Department 3354
Laramie, WY 82071

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