



Spring 2009

Issue 1

CSU Extension Small Acreage Website Launched

By Jennifer Cook, Front Range Small Acreage Management Coordinator

Have questions about managing your land, or want to learn more about topics such as pasture, fencing, weeds, composting, and much more? Visit the new CSU Extension Small Acreage Management website <http://www.colostate.edu/sam> Search frequently asked questions, ask us a question through AnswerLink, and browse small acreage related events.



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Worms in My Kitchen

By Linda Kennedy, CSU Extension Master Gardener, Broomfield

I have a secret I share rarely. My family was a long time in accepting my secret and I notice that my children still do not share it with friends. Boyfriends have come and gone in my daughters' lives without knowing what I keep hidden in tubs in the garage. So far the neighbors have no idea.

But it is a new year and as a budding Colorado Master Gardener, I need to share

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Front Range Small Acreage Newsletter is edited and published by Jennifer Cook, Small Acreage Management Coordinator, NRCS/CSU Extension, 57 West Bromley Lane, Brighton, CO 80601
303-659-7004 ext.3 jennifer.cook@colostate.edu
Please direct all inquiries regarding this publication to Jennifer Cook.



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openly and honestly. I am a vermicomposter. I keep a container of vegetable peelings, coffee grounds, tea bags, and dryer lint on my kitchen counter. I compost with worms.

Several years ago, I dragged my husband to a presentation at the Broomfield recycling Center



on vermicomposting (composting with worms). It changed my life and my kitchen habits. I had always composted, but in the winter it was a chore that I had dismissed. No one wanted to trek through the snow 20 feet to compost potato peelings. But worms in the garage! Now that was the answer.

A rubber storage bin with holes punched in the bottom and the lid, some shredded newspaper, 1 pound of worms and I was on my way. These are no regular worms; these are red wigglers that feed from the bottom up, eating all my kitchen garbage (except meat and dairy products), lint, tissues, and shredded paper. They excrete “castings” that is nutrient-rich compost for mixing into garden soil. The holes in the bottom drain the liquid produced—worm tea. It is not to be humanly consumed, but diluted and fed to houseplants instead of fertilizer.

My worms did so well that within a year I moved them into a “worm condo.” Through the internet I bought a 4 tier tray system. The worms will move upwards eating the garbage

and producing castings. Eventually they will climb through the plastic screen bottom of the next tray to eat the garbage, leaving a lower tray of dark humus for my garden.

Vermicomposting is inexpensive, odorless, and efficient. The suggested worm:garbage ratio is 2:1. One pound of worms will keep up with 1/2 pound of daily garbage. What a great way to dispose of those shredded credit card bills! And a great science fair project!

For more information, visit ATTRA Soils & Compost Info <http://attra.ncat.org/soils.html>

Leafy Spurge *Euphorbia esula* L. A Colorado Noxious Weed

By Jennifer Cook, Small Acreage Management Coordinator, NRCS/CSU Extension

Leafy spurge is a non-native creeping perennial which reproduces by seed and extensive wide-spreading roots. It is one of the earliest plants to emerge in the spring.



Leafy spurge can be identified by its small yellow-green flowers which are enclosed by a pair of yellowish-green, heart-shaped bracts. The bracts have the appearance of flowers.

Shoots can grow 1 to 3 feet high. Leaves are alternate, narrow, linear with smooth margins, about ¼ inch wide, and 1 to 4 inches long. The roots can extend as deep as 30 feet!

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One large leafy spurge plant can produce up to 130,000 seeds which are projected up to 15 feet from the parent plant! Leafy spurge is extremely difficult to control because of its extensive root system. It is adapted to a wide variety of habitats and is very competitive with other plant species. If it becomes established in rangeland, pasture, and riparian sites, it may exclude all other vegetation due to its competitive nature.

Another key identifying characteristic is the entire plant, including the roots, has a milky white latex. Be aware, the sap is damaging to



eyes and to sensitive skin. Although horses and cattle will not generally eat leafy spurge as

forage, if eaten the weed can increase photo sensitivity to light or cause colic and burns.

Your best bet for controlling leafy spurge is to develop a management plan using a combination of control methods. For example graze the infestation in the spring, release insects in the summer, and use herbicides in the fall.

Mechanical methods include grazing and mowing. Graze sheep and goats in spring, but prevent overgrazing as bare ground is prime habitat for leafy spurge. If leafy spurge has set seed, quarantine animals in a corral for 7 days after grazing before releasing them into a non-infested pasture. Mow to reduce seed production, every 2 to 4 weeks during the growing season.

Flea beetles can be released for biological control of leafy spurge. The flea beetles *Apthona*

nigriscutis, *A. lacertosa*, and *A. cyparissiae* are especially effective when combined with grazing and/or herbicides. Flea beetles feed on the leaves in the summer and the insect larvae feed on leafy spurge roots underground. Call the CO Department of Agriculture Insectary at 970-464-7916 for free beetles or visit Weedbusters Bio-control to order beetles. <http://www.weedbustersbiocontrol.com/>

Refer to the CSU Extension Leafy Spurge Factsheet or call your local weed district for herbicide recommendations, rates, and application timing. Always read the label instructions before spraying.

For more information, refer to: CSU Extension Leafy Spurge Factsheet at <http://www.ext.colostate.edu/pubs/natres/03107.html>

Colorado Department of Agriculture Leafy Spurge Fact Sheet at <http://www.colorado.gov/cs/Satellite?c=Page&cid=1178305507391&pagename=Agri-culture-Main%2FCDAGLayout>

Creating an Heirloom Vegetable Garden

By Jennifer Tucker, Small Acreage Coordinator, Adams County CSU Extension

There has been a sudden interest in Heirloom gardening. Hopefully this article will explain what heirloom gardening is, and some facts related to growing these special vegetables.

What is an Heirloom?

Heirlooms are an open pollinated variety that has history tracing back 50-100 years... or more! Heirlooms are considered plants that were created before 1951, which is when hybrid and other genetically controlled plants first

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made an appearance. Many of these seeds have been saved by families for their annual garden, while others, are a widely known variety commercially available, but still fitting of Heirloom description. Some of the varieties of Heirlooms are not something you will see on store shelves. They lack the “perfection” of modern varieties. Colors may be different, they may be odd shaped, and they may have a different taste! Heirloom Gardeners relish this change from the norm. One of the major advantages of Heirloom plants is that the seeds are “save-able”, meaning that a gardener can collect their seeds and grow them the following year.

Tomatoes are by far the most popular Heirloom.



Gardeners love the options of the wild colors ranging from yellow, to purple and striped varieties to boot! Peppers can be found in the typical colors as well

as wild ones, and many other vegetables are found in odd shapes and sizes, with memorable flavor. Going into many garden centers, Heirloom varieties are found in seed packets as well as live plants!

Often times, the heirloom varieties require more care and protection of their precious bounty. Without the aid of modern advances, they are sometimes susceptible to diseases, insects or other adversities that standard, modern varieties are able to combat. However, these old blood originals have the advantage of genetic diversity, which cannot be touted by modern varieties. Heirlooms may indeed hold the secret key if modern varieties are stricken by a pest or problem that they have not had centuries to adapt to.

Locating heirloom seeds can be quite simple, especially this year, with the popularity of heirlooms. Seed companies completely devoted to

odd varieties are showing record sales all over the country! Seeds may also be found through local sources, and often, heirloom gardeners become involved in seed trading to keep their varieties out there, and in new plots of ground!

When considering varieties of heirlooms, keep in mind that just as conventional vegetables, some type and varieties of plants do better in specific soil and moisture conditions. These considerations are still important, although heirlooms are known to be a bit more adaptable to conditions. Heirlooms are often more leafy with less production value per plant, however growers are willing to give up production value for the pure flavor of olde-tyme vegetables that they remember growing up with.

As mentioned above, Heirloom seeds can be saved for next year. There are a few considerations with seed saving. Seeds have a different life in storage schedule based upon their type. Typically, most seeds do best if saved in a sealed glass jar in a cool dry location. Many seeds will maintain viability for 5 or more years if kept in the refrigerator, with silica in the jar to absorb moisture.

For more information, please review the following websites:

Clemson University <http://www.clemson.edu/extension/hgic/plants/vegetables/gardening/hgic1255.html>

The Heirloom Vegetable Gardener’s Assistant <http://www.halcyon.com/tmend/heirloom.htm>

Vegetarian’s in Paradise <http://www.vegparadise.com/heirloom.html>

The Seed Saver’s Exchange <http://www.seedsavers.org/>

Heirloom Tomatoes, CSU Fact Sheet <http://www.ext.colostate.edu/PUBS/columngw/gr090221.html>

The Impact of Weeds

By Sharon Bokan, Boulder County CSU Extension Small Acreage Coordinator

Have you ever stopped to consider the impact of weeds? Not just the flat bicycle tire or the cost of an herbicide to kill the weed or your time to go out and deal with the ones in your pasture or garden. The impact goes much further than that.

Weeds also:

- Increase crop production and processing costs
- Increase equipment wear, tear and fuel costs
- Increase seed cleaning costs
- Reduce product/crop quality
- Add to the amount of water and nutrients required for crop production
- Act as alternate hosts for insects and diseases
- Increase animal production costs and product quality
- Decrease land values
- Affect human and animal health (allergies, poisonings)
- Decrease wildlife habitat
- Increase soil erosion by wind and water
- Decrease water quality and damage watersheds and systems
- Decrease recreational opportunities
- Displace native, threatened and endangered species (both plant, animal, insects)
- Increase costs for transportation due to control and asphalt damage
- Increase fire danger
- Increase costs at industrial and utility sites (costs to control weeds)

In 1967, 9.7% of the world's crop production was lost to weeds. Least we think that in the U.S. we are immune to the problem, 8% of the U.S. crop production was lost the same year. Over the last 30 years total loss estimates due to weeds range from \$6 to 18 billion per year. Currently in the United States there are 100

million acres infested with noxious weeds and this is growing by at least 8% each year. Only about 1400 introduced plants are designated scientifically as pests and 94 as Federal Noxious Weeds and a few more listed on state noxious weed lists.

Leafy spurge can decrease the carrying capacity (how many animals can graze in an area) by up to 50%.

Economic impact of spotted knapweed infestations both directly and indirectly is \$42 million, which translated to 518 South Dakota jobs.



Spotted Knapweed

Most weeds have traits that allow them to out-compete native vegetation such as earlier spring growth, more extensive root systems or higher seed production. Mustard family plants need 2 times the nitrogen and phosphorus and 4 times the potassium and water than oats.

Weeds alter the environment in several ways like reducing the plant, animals, insects and microorganism biodiversity. They can create monocultures, which are undesirable native plants, animals, insects and other microorganism habitat. Even if they don't create a monoculture they can eliminate certain species critical for other species survival. The monoculture increases wind and water erosion, alters water movement in the soil and nutrient cycling.

Weed-infested area soils tend to have less organic matter due to increased erosion by both water and wind. This reduces water infiltration and availability to other plants. Nitrogen, phosphorus and potassium can be reduced by 40-90% in spotted knapweed infested areas.

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The Impact of Weeds Continued from page 5

Noxious weeds have different growth habits and growth structures that can alter how wind, rain, etc. are handled. Grass structures absorb rain energy preventing erosion plus their fibrous root systems hold soil. In spotted knapweed areas, runoff is 1.5 times higher and sediment loss is 3 times higher than in uninfested areas. They also alter plant community composition for wildlife by reducing forage, altering thermal (due to reduced canopy) and escape



Cheatgrass

known to drop over 50% if the property is infested with a noxious weed.

Some weeds are thought to have an allelopathic effect on the soil. This is when the roots or other plant parts exude a chemical that prevents

other plants from growing in the area. Litter from noxious weeds may leach compounds that inhibit germination of other seeds. Weeds alter historic fire cycles (i.e. Cheatgrass). Native plants cannot survive

cover, altering water flow and availability to wildlife and may reduce territorial space available for wildlife survival.

Noxious weeds cause more extreme soil temperatures due to lower water levels, soil exposure to sunlight (reduced canopy), poorer soil aggregation and organic material content. In riparian areas, native plants reduce stream bank erosion by absorbing and dissipating floodwater energy and also filtering water along with providing wildlife habitat. Some weeds (i.e. Tamarisk) can utilize more water thus reducing water available for wildlife, municipal and agricultural use.

Weeds impact us also by reducing final product quality. Either the crop received less water and nutrients and is therefore lower in quality or quantity or the crop has been infected with a disease harbored by weeds or damaged by insects that live in the weeds. Weeds also affect human and animal health every year from mild allergies to poisonings. Land prices are also

the more frequent or intense fires.

Utility and transportation costs are increased by weed control and road and utility damage.

Weeds grow in asphalt cracks and eventually damage the asphalt. Also, roadside and utility right of ways must be kept noxious weed free.

Agricultural and utility area control costs are passed along in food, clothing, etc. prices. Hunters, anglers, hikers, landscape contractors, building contractors and other outdoor enthusiasts should also be aware of and practice good control strategies and report any suspected noxious weed infestations. Weeds spread seed or vegetative matter via animals, clothing, and equipment. Monoculture weedy areas are not nearly as interesting or contain as much wildlife as areas with flora and fauna variety. When infestations get established in large parks and wilderness areas, the control is much more difficult and more expensive.

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So what can the average person do and how can weeds be controlled? Here are some steps to help limit their spread.

1. Control or limit seed dispersal
Clean equipment when leaving known infested areas.
2. Control or contain existing infestations
Use integrated weed management techniques to get infestations under control or eradicated.
3. Minimize soil disturbances
Disturbed soils encourage germination of weed seeds
4. Detect and control new infestations early
Be aware when you are hiking, walking your property, etc., look for weeds and report suspected ones to local weed control agencies. Start a routine monitoring program to detect infestations early.
5. Establish competitive vegetation
Areas lacking vegetation are prime areas for weeds to get established, keep pastures healthy.
6. Manage the existing vegetation properly
Don't overgraze.

References:

“Fundamentals of Weed Science”, Second edition, Zimdahl, R. L., Academic Press, 1993, pp. 30-35

“Biology and Management of Noxious Rangeland Weeds”, Sheley, R. L., Petroff, J. K., Oregon State University Press, 1999, pp.4-15. pp. 44-84

“Economic Analysis of Containment Programs, Damages, and Production Losses From Noxious Weeds in Oregon”, Oregon Department of Agriculture, Plant Division, Noxious Weed Control Program, 11/2000

Bureau of Land Management website:
http://www.nv/blm.gov/Resources/noxious_weeds.htm

Minnesota Department of Agriculture website:
<http://www.mda.state.mn.us/plants/badplants/noxiousweeds.htm>

Utah State University website:
<http://extension.usu.edu/weedweb/nweeds/status.htm>

“Economic impacts of noxious weeds, other weeds, and tree growth, on agricultural production in the New England Tablelands, New South Wales”, Townsend, J., Sinden, J. A., No. 99-5, May 1999, University of New England Graduate School of Agricultural and Resource Economics

“Assessing the Economic Impact of Noxious Weeds: The Case of Leafy Spurge”, Bangsund, D. A., Leistritz, F. L., Department of Agribusiness and Applied Economics, North Dakota State University, Leafy Spurge Forum Proceedings, January 16-17, 2003



Noxious Weed Workshop

Saturday, June 6 from 8-11:30 at Valley Bank & Trust Community Room in Strasburg. Contact Deer Trail and East Adams Conservation Districts 303-822-5257 x101.

A Weed Walk in the Park

Saturday, June 6, from 9-11:30. A guided tour of Frank State Wildlife Area to see noxious weeds and native plants first hand. Contact Tina Booton at 970-304-6496 ext. 3770.

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CHANGING LANDS, CHANGING HANDS:

A National Conference on Farm and Ranch Access, Succession, Tenure and Stewardship
June 10-11, Denver, Colorado
To register go to www.farmlasts.org/conference.htm

Managing Grass Profitably

Friday, June 12 from 3-8pm at Stults Ranch northwest of Wray. Contact Yuma County Conservation District 970-332-3173 x3.

Livestock Grazing Behavior Basics

Saturday, June 13 from 8-5 at El Paso County Fairgrounds. Register with East Central CO RC&D 719-743-2408 x112, Double El Conservation District 719-541-2358 x101, or CSU Extension Kiowa 303-621-3162.

Training Livestock & Rangeland Inventory Workshop

Tuesday, June 16 at Knielvel Ranch in Wiggins. Guest speaker Kathy Voth will share how to train cows to eat weeds. Contact Morgan Conservation District at 970-867-9659.

Small Acreage Weed ID and Control Workshop

Choose a workshop date: June 16 or August 18. 6-8 pm at Boulder County Fairgrounds. Contact Sharon Bokan at 303-678-6238.

Rangeland Monitoring Workshop

Tuesday, June 16 from 8-4:30 at Pawnee National Grassland. Contact Randy Reichert at 970-346-5006.

The Grazing & Land Management Seminar

Friday, June 19 from 9:30-3, at San Luis Field office. Contact Costillo Conservation District at 719-588-3533.

Colorado Division of Wildlife is hosting free workshops on wildlife and conservation value added opportunities for land-owners.

Workshops will be on a host family ranch and will include a tour of the ranch showcasing conservation programs applied to the property. Continental breakfast and lunch will be provided.

June 18 - Wallace Ranch, Bent/Baca County
June TBA - Zech Ranch, Delta
Contact Ken Morgan, Private Lands Coordinator Colorado Division of Wildlife at ken.morgan@state.co.us, 303-291-7404.

High Altitude Canning Classes

Longmont: June 25 from 6:30-9 or June 27 from 9-11:30, Register at CSU Extension Boulder 303-678-6238;

Littleton: July 7 from 6:30-9 or July 11 from 9-11:30, Register at CSU Extension Arapahoe County 303-730-1920;

Online Classes: Thursdays at 11:00 starting June 25-July 30. Call Boulder County Extension 303-678-6238.

Biological Control of Bindweed Workshop

Saturday, July 11 from 8:30-10:30 at Adams County Fairgrounds. Learn hand-on and receive your own bio-control agents. Register at 303-637-8100 or

www.adamscountyextension.org

