

Spring 2015



Issue 25

[www.ext.colostate.edu/sam](http://www.ext.colostate.edu/sam)

**Inside this issue:**

<b>New Regulations for Small-Scale Producers of Chicken Eggs Focus on Food Safety</b>	<b>1</b>
<b>Backyard Poultry Safety</b>	<b>2</b>
<b>Soil Health and Vermicompost</b>	<b>4</b>
<b>Raspberries!</b>	<b>5</b>
<b>Grasses and Growth Cycles</b>	<b>8</b>
<b>What is Soil and How Does it Form?</b>	<b>9</b>
<b>Russian Thistle</b>	<b>11</b>



## **New Regulations for Small-Scale Producers of Chicken Eggs Focus on Food Safety**

Martha Sullins, CSU Extension

Small-scale producers, selling fewer than 250 dozen chicken eggs per month, have two options for selling chicken eggs they produce on their property. If producers want to sell directly to the end consumer at the farm, at a farmers market or through a community supported agriculture (CSA) organization, then they are exempt from licensing per the Colorado Department of Agriculture (CDA), under Colorado's Cottage Food Law (even

though chicken eggs are not a cottage food by definition). If small-scale producers want to sell their chicken eggs to schools, restaurants or other institutions, then they must be licensed as a Class 1 dealer by CDA.

### **New handling and packaging requirements**

CDA now requires that all producers selling chicken eggs (either as cottage food producers or as Class 1 licensed dealers) wash and sanitize their

**Continued on page 2**

Colorado Sustainable Small Acreage News 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](mailto:jennifer.cook@colostate.edu)  
*Please direct all inquiries regarding this publication to Jennifer Cook.*



Colorado State University Extension and U.S. Department of Agriculture programs are available to all without discrimination. Colorado State University Extension, U.S. Department of Agriculture and Colorado counties cooperating.

## New Regulations for Egg Producers continued from page 1

eggs before selling them in farmers markets and CSAs. The wash water temperature should be at least 120°F, and the rinse water must be a minimum of 115°F. Dishwashing liquid that is free of scents and dyes is acceptable. Eggs can be sanitized by dipping in a solution of 1 tablespoon bleach (preferably labeled for use on eggs) to 1 gallon of water before storage. Dry eggs before storing as moisture may enter the shell pores when eggs cool upon refrigeration.

Egg cartons used for selling eggs may not be re-used; rather they must be new and generic, without a store or brand name. Label all egg cartons with the following:

- ◆ Name and address where eggs originated
- ◆ Packaging date
- ◆ Safe Handling Instructions: *"To prevent illness from bacteria, keep eggs refrigerated, cook eggs until yolks are firm, and cook any foods containing eggs thoroughly."*
- ◆ Statement: *"These eggs do not come from a government-approved source."*

Lastly, chicken eggs sold at farmers markets must be transported in a clean and sanitary environment between **33°F and 41°F**, and this temperature must be maintained while eggs are being offered for sale.

Following these new regulations will help Colorado's egg producers provide a safe and healthy food from the farm directly to the consumer.

For additional information:

*Small Flock Egg Producers*, CO Dept. of Agriculture:  
[www.colorado.gov/pacific/aginspection/egg-producers](http://www.colorado.gov/pacific/aginspection/egg-producers)

*Home-Produced Chicken Eggs*, Colorado State University Extension: [www.ext.colostate.edu/pubs/foodnut/09377.html](http://www.ext.colostate.edu/pubs/foodnut/09377.html)

*Shell Eggs from Farm to Table*, USDA, Food Safety Inspection Service (FSIS): [www.fsis.usda.gov](http://www.fsis.usda.gov)

## Backyard Poultry Safety

What you should know if you keep backyard poultry- chickens, ducks, geese, or turkeys

- ◆ **Protect Yourself** from *Salmonella* and other germs which even healthy-looking chicks, ducks, and other backyard poultry can transmit to your family. Children under 5 and persons with weakened immune system are at greatest risk.
- ◆ **Protect Your Flock** from *Avian Flu* (highly pathogenic H5N2) which was recently found in a Canada goose in the Cheyenne, WY area. This strain of bird flu has arrived in the Central Flyway of migratory waterfowl, so keeping your flock away from wild birds, ducks, and geese is more important than ever.

### Protect Yourself

Baby and adult poultry can carry *Salmonella*, *E.Coli*, and other bacteria and parasites. Even if they don't appear to be sick, they can still spread their germs. Holding, cuddling, or kissing the birds can infect people, as can touching their bedding, droppings, and feed or water bowls. *Salmonella* can make people sick with diarrhea, vomiting, fever, and/or abdominal cramps. Young children, elderly persons, and those with weakened immune systems are more likely than others to develop severe illness, and may need to be hospitalized. If bacteria get into the bloodstream, they can even cause death unless the person is treated promptly with antibiotics.

**Continued on page 3**

Safe Handling Instructions: To prevent illness from bacteria, keep eggs refrigerated, cook eggs until yolks are firm, and cook any foods containing eggs thoroughly. These eggs do not come from a government-approved source.

**Happy Valley Farm**  
**123 Valley Road**  
**Fort Collins, CO 80524**

**Sample egg carton label with required information.**

## Backyard Poultry Safety continued from page 2

Young children are especially at risk for illness because their immune systems are still developing and they are more likely to put their fingers or other items in their mouths. Over the past 2 years, 50 Coloradoans have contracted salmonella infections from baby chicks.

### To reduce the risk of Salmonella infection from live poultry

- ♦ Wash your hands thoroughly with soap and water right after touching live poultry or anything in the area where they live and roam. Use hand sanitizer if soap and water are not readily available. Adults should supervise hand washing for young children.
- ♦ Don't let children younger than 5 years of age handle or touch chicks, ducklings, or other live poultry.
- ♦ Don't snuggle or kiss the birds, touch your mouth, or eat or drink around poultry.
- ♦ Don't let live poultry inside the house, in bathrooms, or especially in areas where food or drink is prepared, served, or stored, such as kitchens or outdoor patios. Keep live poultry outside.
- ♦ Don't eat or drink in the area where the birds live or roam.
- ♦ Don't clean any equipment or materials associated with raising or caring for live poultry, such as cages or feed or water containers, inside the house.

### Protect your Flock

Backyard flock biosecurity is more important than ever as wild birds could bring a new strain of severe bird flu (H5N2) to your poultry.



Source: foodsafety.gov

Outbreaks of highly pathogenic (highly deadly) avian influenza (HPAI) were first identified in U.S. commercial and backyard flocks in late 2014 in the Pacific Northwest. Minnesota, Arkansas, Missouri, and eastern Kansas reported outbreaks in commercial and backyard flocks in March 2015. A wild Canada goose from Laramie County (Cheyenne) Wyoming is the first confirmed infection in wild waterfowl along the Central Flyway for migratory birds. (see <http://tinyurl.com/WY-goose-flu>).

A press release (<http://tinyurl.com/CDA-avian-flu>) from the Colorado Department of Agriculture—sent prior to the detection of the goose infected in Wyoming—emphasizes the steps local poultry keepers should take to protect their flocks. Important steps include keeping poultry away from ponds and grassy areas used by wild ducks and geese. So far, no outbreaks in domestic birds have been identified in Colorado, but poultry farmers, as well as falconers, and even hunters should be aware of the possibility of exposure.

No people have been sickened by this H5N2 virus at this time, nor is it thought to be capable of being transmitted between people. The U.S. Center for Disease Control (CDC) considers the risk to people low from the current U.S. strains of avian flu virus in wild birds, backyard flocks and commercial poultry. The H5N2 virus is better adapted to infecting birds than humans. However, influenza viruses change over time, so thorough hand washing after contact with wild waterfowl or their droppings is strongly encouraged, and will also help prevent infection from the bacteria and parasites these birds can carry.

For more information on Salmonella in baby birds: [www.cdc.gov/Features/SalmonellaBabyBirds/](http://www.cdc.gov/Features/SalmonellaBabyBirds/)

For more information on the H5 Avian Flu strains that have appeared in the U.S. over the past four months: [www.cdc.gov/flu/avianflu/h5/index.htm](http://www.cdc.gov/flu/avianflu/h5/index.htm)



## Soil Health and Vermicompost

By Jana Carson and Kathy Doesken, Soil Stewardship, LLC

Current thinking often tends to focus on the mineral properties of soil; however, there is a more holistic way to look at and understand this important element of nature. Soil is an amazingly complex living ecosystem that involves interconnections between all soil life: actinomyces, bacteria, fungi, nematodes, protozoa, and more. Together these living organisms in soil can be called soil biology, and are quite important for soil health. Way back in 1985, researchers at Colorado State University concluded that grass growing in soil with nematodes and bacteria grew significantly better than plants grown in sterile soil (Ingham et al, 1985). More recently researchers at Ohio State University showed that certain soil-borne diseases can be suppressed by high populations of nematodes that prey on the nematodes responsible for infecting plant roots (Arancon et al, 2003).

There are many ways to enhance soil biology; one



**At Soil Stewardship, worms live in raised beds in a greenhouse. They are fed composted horse manure which the worms turn into vermicompost.**

such way incorporates the addition of vermicompost to soil management practices. Vermicomposting uses earth worms (red wigglers) to convert organic wastes into compost. Worms have a com-

plex digestive system which excrete castings that are rich with microorganisms, bacteria, and fungi. This biology can be incorporated into soil, impacting soil not only biologically but physically as well. For example, worm castings are coated with compounds from the worm's gut which cause particles of soil to cling together. This "glue" increases soil aggregation which in turn enhances root growth, pore space, and water holding capacity of soils. All are important for building soil health.

Vermicompost can be added to soil as a top dressing, incorporated into the soil at planting time, and made into a liquid extract called compost tea. Studies show (Atiyeh et al, 2000) that when twenty percent by volume vermicompost is mixed with potting soil, plants and seeds grow stronger and are more disease resistant.

Compost tea, when made with good quality vermicompost and brewed using correct practices (Radovich and Arancon, 2011) can contain more biological activity than was present in the original vermicompost. Applying compost tea to soil in the root zone stimulates biological activity at the root's surface, which can enhance nutrient cycling and disease suppression (Edwards et al, 2007). Some studies have also shown that microorganisms in the tea colonize the leaf surface, essentially protecting the leaf from colonization by pathogenic organisms (Palmer et al, 2010).

Vermicompost is a sustainable, organic, living soil amendment. Utilization of vermicompost for nutrient management, the suppression of plant diseases, and as a component of potting media for transplants may have real merit on your small acreage. Many studies have shown the importance of healthy soils for plant production. Vermicompost, a product of the lowly earth worm, may benefit our soils in ways we have not yet imagined.

**Continued on page 5**

## Vermicomposting continued from page 4

To learn how to get started with vermicomposting check out

[www.ext.colostate.edu/pubs/columngw/gr141101.html](http://www.ext.colostate.edu/pubs/columngw/gr141101.html) ;  
[www.ext.colostate.edu/sam/vermicompost.pdf](http://www.ext.colostate.edu/sam/vermicompost.pdf) ; and  
[www.cowormman.org/](http://www.cowormman.org/)

Vermicompost and vegetable trials [http://  
cwmi.css.cornell.edu/vermicompost.htm#suppression](http://cwmi.css.cornell.edu/vermicompost.htm#suppression)

### Resources:

Arancon, N. Q., Galvis, P., Edwards, C. A., & Yardim, E. (2003). The trophic diversity of nematode communities in soils treated with vermicompost, *Pedobiologias*, 47, pp. 736-740.

Atiyeh, R. M., Edwards, C. A., Subler, S., & Metzger, J. D. (2000). Earthworm processed organic wastes as components of horticultural potting media for growing marigolds and vegetable seedlings. *Compost Science and Utilization*, 8, pp. 215-233.

Edwards, C. A., Arancon, N. Q., Emerson, E., & Pulliam, R. (2007). Suppressing plant parasitic nematodes and arthropod pests using vermicompost teas. *Biocycle*. December, pp. 38-39.

Palmer, A. K., Evans, K. J., & Metcalf, D. A. (2010). Characters of aerated compost tea from immature compost that limit colonization of bean leaflets by *Botrytis cinerea*. *Journal of Applied Microbiology*, 109(5), pp. 1619-1631.

Ingham, R. E., Trofymow, J.A., Ingham, E., & Coleman, D. C. Interaction of Bacteria, Fungi, and their Nematode Grazers: Effects on Nutrient Cycling and Plant Growth. *Ecological Monographs*, 55(1), pp. 119-140.

Radovich, T., & Arancon, N. (Eds.). (2011). *Tea Time in the Tropics: A handbook for compost tea production and use*. Honolulu, HI: College of Tropical Agriculture and Human Resources, University of Hawaii. Retrieved from [www.westernsare.org/  
Learning-Center/SARE-Project-Products/Tea-Time-in-the-Tropics](http://www.westernsare.org/Learning-Center/SARE-Project-Products/Tea-Time-in-the-Tropics)



**Horse manure and leaves are composted inside straw walls for insulation. Then the compost is fed to the worms.**

## Raspberries!

Andy Hough, Hidden Mesa Research Orchard manager, Douglas Cty



**Black raspberry tip-cluster ripening.**

Colorado climate can be challenging for gardening and fruit production. However, with the right plants and innovative methods of growing, the home gardener or commercial grower can be successful. Raspberries are a great option for all but the highest elevations in Colorado; and who doesn't like raspberries!

There are many different types of raspberries. Their growth form, season, and method of culture vary according to variety. Let's start by breaking raspberries down into some major categories.

**Color:** Raspberries come in a variety of colors, including red, purple, yellow or gold, and black. Purple raspberries are crosses between red and black raspberries.

**Growth form:** Red and yellow raspberries typically produce erect canes that need little support in our climate. Some varieties grow a little bit longer canes that might benefit from trellising or topping. These raspberries propagate most commonly by sending out 'suckers', which are new shoots breaking ground some distance away from the mother plant at a node off the root. These raspberries can spread and cause problems in a formal landscape.

Black raspberries typically have more trailing or droopy canes that benefit from trellising. These varieties naturally propagate by 'tip rooting', where a trailing cane that touches the ground roots and starts a new plant. Self-propagation is much easier to control in tip rooting varieties. These types of raspberries have a very different pruning regime.

Purple raspberries are somewhere in between. They are frequently managed like red raspberries,

**Continued on page 6**



## Raspberries continued from page 5

although they grow longer canes, and are often 'topped' or cut back to 32" to promote lateral branching. Purple raspberries generally do not sucker.

**Summer bearing** (floricane fruiting) raspberries are the more traditional type that fruit on second year canes (floricanes). This means that the plant grows canes one year which must survive the winter. Then in their second season, the floricanes grow side branches called laterals, which typically bear fruit in July. Hardy summer bearing varieties include Killarny, Boyne, and Nova.

**Fall bearing or ever bearing** (primocane fruiting) raspberries are capable of bearing two crops a season. They bear a fall crop on first year canes, called primocanes, anywhere from late August to mid-September through hard frost. If those canes survive the winter, they can also produce a July crop on second year canes, just as the summer bearers do. Fall bearing varieties produce a whole new crop of primocanes each year, so winter injury is not a concern. Managing fall/ever bearing varieties for only the fall crop also greatly reduces labor. Pruning can be done with hedge trimmers, a brush cutter, bush hog etc. Simply prune off all the canes December through March. Mass pruning is much sim-

pler than the selective pruning required to cut out the spent two year canes of the summer bearing varieties. Good primocane fruiting cultivars include: Autumn Bliss, Autumn Britten, Caroline, Jaclyn, Polana, Anne, Fall Gold, and Heritage.

There are ways to work around winter injury if you want a summer crop. Plants can be grown in high tunnels and probably low tunnels. Canes may be laid down and mulched for the winter. Row covers may be used. An anti-desiccant such as Wilt Pruf can be sprayed on canes to be overwintered. This treatment should help with desiccation, but would not help with cold injury. Wind breaks in the vicinity can help with desiccation. I usually wait to prune my second year canes until I see what winter killed. I can then thin the floricanes to no more than 10 strong canes per linear foot of row.

**Black raspberries** have been a pleasant surprise in our research orchard near Franktown. We have been growing only since 2011, but we have never had a total loss on black raspberries, even the year we lost all our overwintering red raspberry canes. Typically, you'll want to 'tip' or cut back the primocane to 28" during the summer, making sure you are removing at least 4" of cane to stimulate proper lateral branching. More fruit is produced on lateral branches. Varieties that did well for us are Jewel, Pequot, wild Minnesota, Cumberland, Logan, Munger, Bristol, and Mac Black.

Another challenge that has arisen in the last few years is the Spotted Wing Drosophila (SWD). The SWD is a new variety of fruit fly that has come to the Front Range. Its larvae penetrate the skin of developing fruit. Fruit that is infected gradually degrades in quality and becomes unpalatable. For the first few days, it is relatively edible. SWD does not seem to affect fruit until mid-summer. So summer bearing varieties or floricane crops on ever bearing varieties are more likely to avoid SWD problems due to their earlier ripening season. Good field hygiene and picking often reduces the level of infestation. We also drag a large pot with a trash bag liner



**Pruning primocane brambles during the winter with a brush cutter.**

**Continued on page 7**

## Raspberries continued from page 6

down the row as we pick. Any compromised fruit goes into the black trash bag, which is later tied off and baked in the sun for a couple of days to kill the larvae, then thrown in the trash.

Raspberries do best in a well-drained loamy soil with a pH of 6-7. If the pH creeps higher, they can become chlorotic, or deficient in iron, which appears as lightening or yellowing leaves often with green veins remaining. Iron supplements such as Ironate, chelated iron, or iron sulfate help with this problem. Foliar applications of iron containing fertilizers work very quickly. Raspberries greatly benefit from 2-3 high doses of nitrogen from late winter or early spring through early June. We use a lawn fertilizer (without weed killer!!).

Phytophthora root rot can be a problem on heavy soils that are slow to drain. If wet areas cannot be avoided, planting in raised rows helps. To avoid soil borne diseases, it is best to avoid planting into soil that has grown tomatoes, potatoes, peppers, eggplant, strawberries, or annual vine crops within the last four years.

With a good choice of varieties, appropriate cultural methods, and just a little care, you could be enjoying your own raspberry delights as early as this fall or next summer. There is a great world of Colorado-adapted bramble fruit out there that can make your life that much brighter!

For more variety information, including performance and taste, read the full version of this article at [www.douglas.co.us/documents/raspberries-on-the-front-range.pdf](http://www.douglas.co.us/documents/raspberries-on-the-front-range.pdf)

For more info on raspberries, watch a one-hour recorded SAM Webinar on Raspberries for Colorado below 7000' available at [www.ext.colostate.edu/sam/garden.html](http://www.ext.colostate.edu/sam/garden.html)

## Grow food and livestock on your small acreage!

May 16, 2015

8:30 am – 3:30 pm

The Ranch, Loveland, CO

- Soils and Soil Health
- Small Fruit Production in Colorado
- Finishing Beef Cattle on a Small Acreage
- Backyard Chickens
- When to Call a Veterinarian
- Food Safety for Backyard Production.
- Weeds
- Pasture Management
- Using Cover Crops

Register at <https://small-acreage-workshop.eventbrite.com>

Participants can choose the sessions they would like to attend to match their specific interests and needs. The cost to attend this all-day event is \$25 per person or \$40 per couple, which includes refreshments and expert information. Lunch is on your own. Sponsored by Colorado State University Extension, West Greeley Conservation District, and the Natural Resources Conservation Service.



Berries from 2014 variety trial at Hidden Mesa Research Orchard



## Grasses and Growth Cycles

Megan Lowery, Conservation/ Education Technician, West Greeley Conservation District

It is important to know a little about grasses to fully understand your hay and forage pastures. Various species of grasses are better suited to grow during different times. There are three important factors which affect grass response to grazing - frequency, intensity, and season. As grazing pressure increases, grass productivity typically declines.

Cool season grasses, or  $C_3$  species, are those that grow during cooler times of the year. These include many wheatgrasses, needlegrasses, brome species, and bluegrasses. Cool season grasses grow when temperatures are 40-75°F. Thus they begin growth in early spring as soon as the soil temperatures are above freezing and daytime temperatures are conducive to growth. These grasses produce high quality forage early in the growing season. During the hot midsummer period, these species do not produce much growth and often become semi-dormant. Depending on species and temperatures, a plant may grow again in the fall as temperatures cool and late summer rains replenish soil moisture.

Warm season grasses, or  $C_4$  species, grow during warmer periods when temperatures reach 70-95°F. Common warm season grasses include blue grama, buffalograss, and bluestems. Warm season species utilize soil moisture more efficiently than cool season species and are thus generally more drought tolerant. They also have a different leaf cellular structure which causes them to be more fibrous, contain more lignin, and be less digestible. Therefore, livestock generally prefer cool season species. However, during the time that warm season species are beginning new growth, cool season species are entering the reproductive stage, so livestock will seek out the sweet new growth of the warm season species.

No matter which type of grass you have, new foliage or regrowth is always more digestible than

more mature growth. This new growth or regrowth is often referred to as “ice cream”. Livestock will continue to graze a single plant to get at the tasty ice cream or new growth. So to protect the health of your pasture grasses, owners must not allow grazing in the same area for more than 5-7 days at one time.

A rangeland or pasture with both warm and cool season species has a longer season of green, palatable vegetation. Knowing your grasses and their physiology can be utilized to your advantage in establishing a grazing program. Depending on the size of your operation, you could graze a single pasture twice in a growing season to utilize both types of grasses. Or in larger operations you could seed separate pastures to warm and cool season species. In the early spring you would utilize the cool season pasture(s) and in the heat of the summer you would use the warm season pasture(s).

No matter your grazing plan, it is vital that enough photosynthetic material remain for regrowth. If heavy defoliation occurs, a plant's regrowth potential is diminished and root growth is negatively impacted. This makes a plant less competitive and more susceptible to drought. Grasses can withstand greater defoliation during early and rapid growth stages because with a rest period they have an opportunity for regrowth. It is important to always leave approximately 3-4 inches of grass to allow for adequate regrowth opportunity. Thus wait until your grass is 6-8 inches before grazing then pull the animals off once they have grazed to 3-4 inches.

It is important to have a flexible grazing management plan that allows for rest following grazing and movement of animals through pastures. Each year's conditions are unique as the result of precipitation, climate, insects, wildlife and number of grazing animals. Always base your decisions on on-the-ground monitoring results, not on a predetermined date.

Source: Trlica, M.J. 1999. Grass Growth and Response to Grazing. Colorado State University Extension. Fact Sheet No. 6.108.



## What is Soil and How Does Soil Form?

By Francine Lheritier, Resource Soil Scientist,  
Natural Resources Conservation Service

Soils serve as the living interface between the atmosphere and the lithosphere (rock). Soils are comprised of minerals, air, water, and organic matter (including living organisms). Soils are both a product of their environment and driver of many ecosystem functions (i.e. nutrient cycling, infiltration).

All soils have a story to tell if you know how to “read” them. Look at the pictures of the soils. How would you describe the differences between and within the soil profiles? (Hints: observe soil characteristics including color, rock fragments, texture, roots, water, etc.). The differences between and within soils can best be explained by the soil forming factors. Understanding the soil forming factors and observing soil characteristics are the keys to “reading” your soil. Differences in soils impact their potential uses and limitations.

“Every rock has what it takes to be part of a soil someday, writes James B. Nardi in *Life in the Soil*. Even the hardest of rocks will eventually succumb to the unremitting action of weather and plants. In the early days of earth there was neither soil nor living creatures- only rocks, water, the wind, and the sun. But these were ingredients enough for the

making of the earth’s first mineral soils. Four major factors worked together to form the first mineral soils: the weathering of rocks from which soil originate (parent materials) was influenced by the slope of the land (topography) where rocks were exposed to wind, rain, and sun (climate) as well as the length of time that rocks were exposed to weathering. Soil began to form slowly, imperceptibly as large rocks changed into small rocks, and small rocks changed into even smaller rocks.

A complete soil represents the marriage of the mineral or inorganic world with the organic world. It is a good marriage; and as in all good marriages, the two partners work together in harmony. Each partner’s attributes are often enhanced in the other’s company. Minerals come from the breakdown of rocks; organic matter arises from the decay of animals and plants. Minerals provide many essential elements for plant life, but so does organic matter. The marriage of the mineral world and the organic world is a marriage that improves the longer the two partners work together. In addition to the four major factors (climate, topography, parent material, time) that contribute to the formation of mineral soils, living organisms represent a fifth and final factor that not only controls but also completes the formation of soil. All these factors work together to create the great diversity of the earth’s

**Continued on page 10**



## Soils continued from page 9

soils, which differ so much from place to place.

The soil-forming forces are as effective now as they were when the earth was much younger. Soil is being born today just as it has been since the early years of earth. But the birth of soil is a slow and labored process. By one liberal estimate, just an inch of soil takes on the order of 500 years to form; and by a more

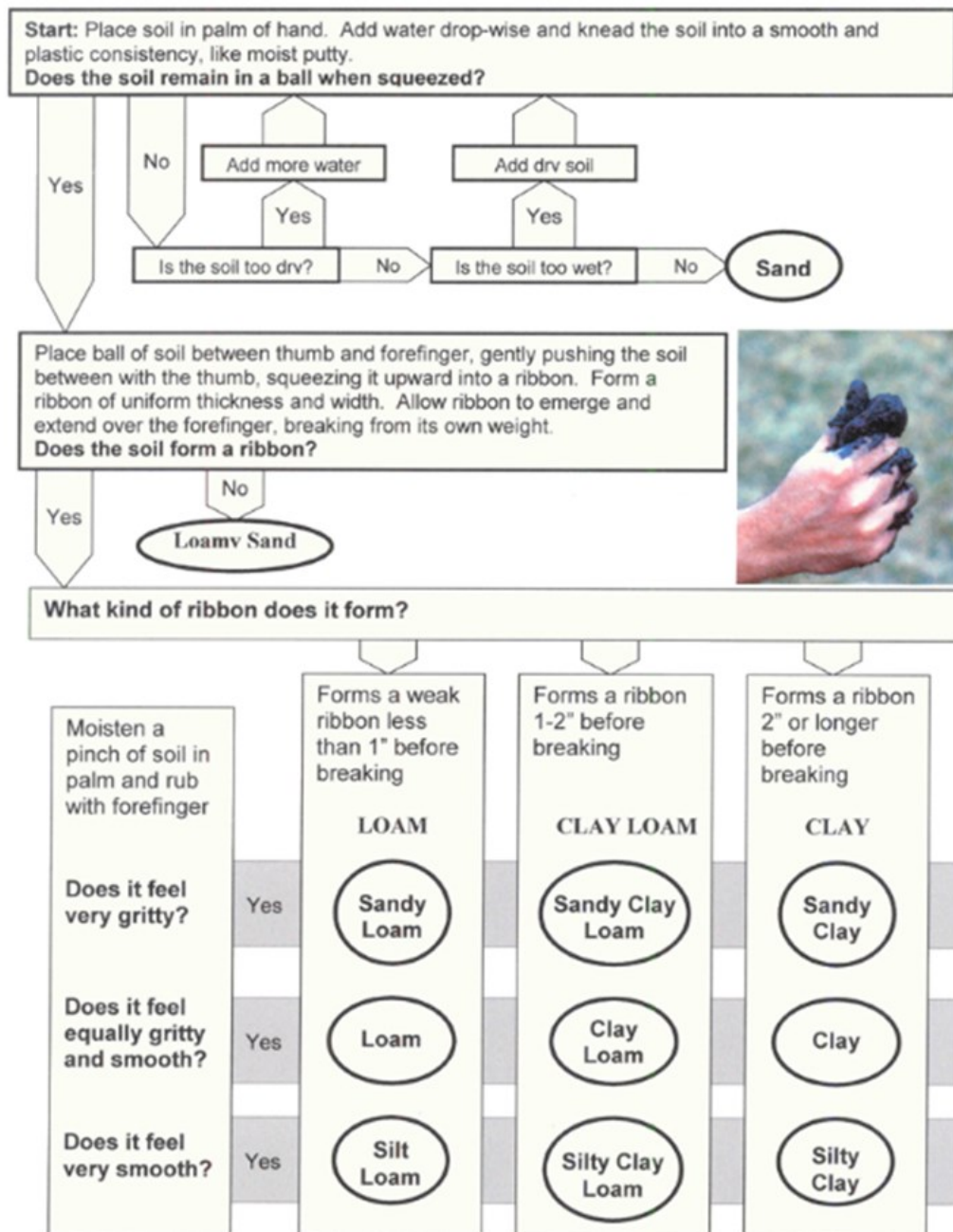
conservative estimate, one inch of soil forms every 1,000 years” Nardi concludes.

Now look at the soil picture on the previous page again, or better yet, dig some holes on your property. Observe the soil characteristics (color, texture, etc.) and ponder how the soil forming factors (climate, topography, parent material, time, and organisms) shaped the soil.

### Activity - Soil Texturing

For complete instructions visit [www.ext.colostate.edu/mg/gardennotes/214.html](http://www.ext.colostate.edu/mg/gardennotes/214.html)

#### Soil Texture by Feel



## Russian Thistle

Russian thistle germinates in April and May and turns into a tumbleweed in the winter. Read CSU Extension Factsheet for identification and control options of Russian Thistle and Kochia at [www.ext.colostate.edu/pubs/natres/06314.html](http://www.ext.colostate.edu/pubs/natres/06314.html)



**Mature Russian thistle**



**Russian thistle seedling**

**Upcoming Small Acreage  
Events**

For a list of upcoming events in your area  
visit CSU Extension Small Acreage  
Management website  
[www.ext.colostate.edu/sam/](http://www.ext.colostate.edu/sam/)

Do you have a question about managing your small acreage?

Contact CSU Extension /NRCS Small Acreage Coordinators:

Jennifer Cook  
Front Range Coordinator  
303-659-7004 ext. 116  
[jennifer.cook@colostate.edu](mailto:jennifer.cook@colostate.edu)

John Rizza  
Western Slope Coordinator  
970-243-5068 ext. 128  
[john.rizza@colostate.edu](mailto:john.rizza@colostate.edu)



Colorado State University Extension and U.S. Department of Agriculture programs are available to all without discrimination. Colorado State University Extension, U.S. Department of Agriculture and Colorado counties cooperating.