



Oregon Small Farm News

Oregon State University Small Farms Program

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Gales Meadow Farm

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Census of Agriculture: A Time for ALL Farmers to Participate

The Census is a complete count of U.S. farms and ranches and the people who operate them. Federal and state policy regarding agriculture is based on census of agriculture data. It is crucial for small farmers to participate in the census. Census forms were mailed December 28 to collect data for the 2007 calendar year. Completed forms are due by February 4, 2008. Producers can return their forms by mail or, for the first time, they have the option of filling out the Census online. Below are answers to frequently asked questions. For more information, go to <http://www.agcensus.usda.gov/>

What is the Census of Agriculture?

The Census of Agriculture, taken every five years, is a complete count of U.S. farms and ranches and the people who operate them. The Census looks at land use and ownership, operator characteristics, production practices, income and expenditures and many other areas. For America's farmers and ranchers, the Census of Agriculture is their voice, their future and their responsibility.

What if I only have a small operation or do not participate in government farm programs?

The Census of Agriculture is the responsibility of every farmer and rancher, regardless of the size or type of operation. For Census purposes, a farm is any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the Census year.

Will my information be kept confidential?

Absolutely. Respondents are guaranteed by law ([Title 7, U.S. Code](#)) that their individual information will be kept confidential. NASS uses the information only for statistical purposes and publishes data only in tabulated totals. The report cannot be used for purposes of taxation, investigation, or regulation. The privacy of individual Census records is also protected from disclosure through the Freedom of Information Act.

For those dragging their feet on filling out the census form, here are some inspiring words from Mary Peabody, Director of the Women's Ag Network, University of Vermont Extension. "There are people out there who think that women farmers don't want or need agricultural programs designed with them in mind. There are people out there who don't understand the need for funding sustainable agriculture, farmers' markets, and research into the effects of climate change on agriculture. There are researchers who wonder if farmers really do use computers, have health insurance or ever intend to retire. Every five years, the Census of Agriculture helps shine a spotlight on emerging trends in agriculture, on who is farming and where, on the importance of small farms to our food systems, on what new technologies farmers are using and whether farmers are being paid adequately for their products. We need you to be counted." From *Missouri Ag Opportunities*. 

Nitrate in Goundwater: A Hidden Concern

By: Melissa Fery

One of the most important responsibilities that come with rural living, is that of protecting the groundwater. Whether you operate a commercial farm, have a small acreage or enjoy a rural lifestyle, basic management practices will help provide good quality water for your family and animals.

All Oregonians should work towards protecting groundwater resources. There are three areas in Oregon, where nitrate contamination of the groundwater has been identified as a drinking water concern. The Southern Willamette Valley, Lower Umatilla Basin and Northern Malheur County have established Groundwater Management Areas to work to address nitrate contamination issues. The La Pine area of southern Deschutes County is also considered an area at risk for nitrate contamination.

Nitrate is a form of nitrogen that moves easily with water through the soil and therefore has potential to reach the water table. Areas most vulnerable to contamination are those with shallow or sandy soils, area of high rainfall or are under irrigation. There is health risks associated with elevated nitrate in drinking water. The EPA has set the maximum level of 10 mg/l or 10 ppm of nitrate for public drinking water supplies, because higher amounts of nitrate in drinking water have been associated with a type of blue baby syndrome. Water containing less than 10 mg/l nitrate is considered safe for people of all ages to consume. If the nitrate level in water is approaching or above 10 mg/l, infants and nursing and pregnant women should not drink the water.

Nitrate contamination in groundwater is the result of non-point source pollution from fertilizers and human and animal waste. Excess fertilization of gardens, lawns or fields, overstocked livestock on pastures, improperly managed animal feeding or holding areas or improperly maintained septic systems may be possible sources of contamination.

Nitrogen is necessary for optimum plant production; however, when fertilizers are applied in excess, it can be a cause for nitrate contamination in groundwater. All fertilizers should be applied at an appropriate rate, time and application method for the crop, garden or lawn to

utilize all of the nutrients in the root zone.

Manure from livestock and horses may impact groundwater quality. Animal manure contains nitrogen and bacteria that may contaminate drinking water, if not managed properly. Animal manure should be applied to crops or pasture as a plant nutrient source. Manure that is stockpiled should always be covered, especially in the winter to avoid run-off and leaching of nutrients.



Nitrate screening during an OSU Extension Service workshop.
Photo provided by Melissa Fery

Failing and improperly managed septic systems may also lead to contamination of drinking water. Pumping the septic tank regularly, depending on household and tank size, using water saving devices in the house and protecting the drainfield area from damage by heavy animals, vehicles and construction activities will reduce potential impact.

Inspecting the well, removing all hazardous materials from the well house, installing backflow protection and ensure there is never standing water around the top of the well are simple practices to safe guard the well from risk. A recommended practice is to test drinking water wells every 1 to 3 years for nitrate and bacteria.

Every rural resident should take a good look at their property and management practices and do all they can help keep drinking water clean for their families, neighbors and animals.

For more information about well water quality, nitrate in groundwater, and testing water go to Oregon State University's well water website at wellwater@oregonstate.edu 

Winter Livestock Management

By: Dr. Susan Kerr, WSU-Klickitat County Extension Director

Rain, sleet, snow, ice, freezing temperatures—winter can be a real struggle for two- or four-legged animals. Those of us with two legs can generally put on a warmer coat or go inside to warm up with a cup of something hot, but what can livestock managers do to keep animals healthy and comfortable in winter?

WATER

The necessity of a clean and reliable year-round source of water cannot be overemphasized. Novice managers often mistakenly believe that animals can meet water requirements by eating snow or licking ice. With daily water requirements varying from three gallons (sheep) to 14 gallons (cattle), one can see that livestock would need to spend every waking hour eating snow to meet their requirements. Ice and snow consumption also lowers body temperature and increases maintenance energy needs, so it should be discouraged.

Water consumption is encouraged when water temperature is 37°F or above. Tank heaters may be required to ensure that water sources do not freeze. Be sure to follow manufacturers' recommendations to prevent fires and electric shocks or electrocution of livestock. If heaters are not used, unfrozen water should be provided several times a day. Ensuring adequate water intake will encourage optimal health and performance of livestock and help prevent serious conditions such as colic and impaction.

ENERGY REQUIREMENTS

Livestock's maintenance nutritional requirements can increase significantly during cold weather. Requirements increase dramatically if animals become wet and/or there is appreciable wind. Lowest critical environmental temperatures (LCT) for livestock vary according to species and researchers, but 20° or 32°F are often used as the lowest temperature dry livestock can tolerate without additional energy demands to support normal body temperature. Some researchers state the LCT for wet animals is 60°F. Energy requirements for an animal with a healthy and dry winter coat increase by one percent for every degree the wind chill temperature falls below the LCT. Energy requirements for an animal with a wet coat increase by two percent for every degree drop in the wind chill temperature.

Energy can be provided through grain or additional



Photo by Kalista Schuster. Used with permission.

roughage (hay). Roughage is generally preferable due to its feeding safety, lower cost and greater heat released during digestion. However, roughage is in short supply in most areas this winter, so grain (corn, barley, wheat, oats, etc.) may be more accessible and affordable. Frequent small grain feedings are safer than one large daily feeding. Grain supplementation rates will vary with species, so discuss feeding rates with your Extension educator.

Some cold and wet weather fronts can result in predictions that livestock will need close to a 100% increase in energy requirements to help them maintain normal body temperature and functions, but such a large, sudden and short-term increase in energy intake is not healthy for most animals. All dietary changes, be they increases or decreases, should be made gradually. Although dietary energy increases are necessary during inclement weather, livestock will fare better if they have sufficient body condition to call upon during times of need.

Blankets can be used daily or as needed to retain body heat for individual animals. This technique is most common for elderly or "hard-keeping" horses or the occasional pet goat. The portion of the blanket closest to the animal should not become wet.

FEEDING

Labor availability is often a major factor in determining how and how often animals are fed in winter. With

daily hand feeding, managers will have a better sense of individual animal's health and appetite, but hand feeding is labor intensive. Feeding big bales to a group of animals once a day or even less often saves labor, but individual animal health can be overlooked. Animals fed directly on the ground will often waste 50% of their hay, as will animals that are fed more than they can consume at one feeding.

Whatever feeding method is employed, managers must be sure there is adequate bunk or head space so every animal has the opportunity to eat its share of the ration. Dividing animals into groups based on nutritional requirements and feeding groups appropriately will make correct feeding more likely. Pregnant immature animals are an important group to feed separately. Pregnant heifers, doelings, etc. must maintain themselves, finish growing and grow a fetus. Failing to meet their nutritional needs may result in stunted animals, poor milk production and weak or dead fetuses.

Don't overlook minerals in the winter. Keep trace mineralized salt available at all times and try to protect it from the elements. Although horses and cattle do well with salt blocks, salt crumbles are best for sheep and goats.

BODY CONDITION

Body condition is also called fat cover or body reserves. It can be assessed in all species through a process called Body Condition Scoring. Livestock managers who body condition score their animals use anatomical landmarks and a five- or nine-point scoring system to objectively measure animals' fat cover. Thick winter hair coats and fleeces can hide poor body condition, so body condition scoring requires hands-on assessment of animals. Refer to the recommended reference to learn how to body condition score.

Body Condition Score	Interpretation
1	Thin
2	Thin
3	Thin
4	Borderline
5	Optimum
6	Optimum
7	fat
8	fat
9	fat

Table 1. Adapted from www.ag.ndsu.edu/pubs/ansci/beef/as1026.pdf

Table 1 shows that an animal with a score of one to three on the nine-point scoring system is deemed thin. Scores in the four to six range are average, and scores of five to seven on this scale

Body Condition Score	Interpretation
1	Emaciated
2	Thin
3	Average
4	Fat
5	Obese

Table 2. Adapted from <http://extension.oregonstate.edu/catalog/pdf/ec/ec1433.pdf>

are recommended for livestock in the winter. This extra body condition will help insulate animals and provide a source of calories during periods of increased energy needs, such as cold snaps.

Table 2 reflects that an animal with a score of one on the five-point scoring system is extremely emaciated and an animal with a score of 5 is obese. Body condition scores of livestock in the winter should be three or four on this scale.

SHELTER

Shelter is another obvious winter livestock management concern. Animals do not necessarily need or want to live in an enclosed barn every day in the winter and barns for shelter are not practical for large herds of animals such as beef cattle. As discussed above, livestock can tolerate cold weather if fed properly for it. However, protection from wind and rain will decrease energy requirements and feed costs and increase animal comfort. Three-sided sheds, hills, thickets of trees and solid or semi-solid fences can all serve as adequate breaks from the prevailing winds. There must be sufficient space for all animals to benefit or overcrowding and even trampling can occur. If animals do not have enough space and variety of landscape to select a spot protected from the elements, a shelter should be provided. Shelter requirements vary between species—sheep with thick fleeces will graze and spend a great deal of time outside during poor weather, but most goats prefer to stay dry than eat.

If a structure is provided, be sure to keep the bedding dry and as clean as possible. Bedding helps insulate animals from the cold ground. However, in bedding soiled with animal wastes, ammonia fumes can build up quickly in the lower 18" where recumbent animals breathe; irritated respiratory lining is then very susceptible to pneumonia-causing bacteria and viruses. Provide good ventilation so the air seems fresh, but do not permit drafts in the structure. Again, prevent overcrowding and make sure there is enough space for all animals.

MUD MANAGEMENT

All too often, where there are animals in the winter, there is mud. With good management and planning, the negative environmental and animal health impacts of mud can be minimized. Mud is most commonly found where animals are forced or choose to congregate. Mud makes foot and hoof diseases such as foot rot and thrush more likely and it causes animals to be perpetually chilled. The wetness of mud can make parasite survival more likely as well.

Contact your local conservation district for recommendations on how you can prevent mud management problems in your livestock areas. Suggestions may include the development of a sacrifice area and/or use of geotextiles, gravel, tile, gutters, sand or woodchips to manage wintertime water movement and minimize mud accumulation

HEALTH CONCERNS

Your animals may have special health concerns in the winter, especially if they are pregnant. Talk with your veterinarian about the vaccinations, nutritional supplementation and deworming your animals may need. Winter is often a good time to address the overwintering phase of internal parasites to reduce environmental contamination in the spring. Also, many animals become infested with species-specific lice in the winter and your veterinarian can advise you how to treat these pests.



Photo by Dr. John Gorham, copyright WSU. Used with permission.

Just because it is winter is no reason to overlook animals' need for exercise to promote muscular and skeletal health. Encourage exercise by varying the location of feeding and watering sites if possible. Exercise will help prevent obesity and overgrown hooves. Hoof care can easily be neglected in the winter, but poor hoof care can lead to several serious health problems. Trim hooves regularly, provide good nutrition, remove manure and minimize mud for optimal hoof health.

CONCLUSION

Addressing the special nutritional, environmental and health needs of livestock in the winter will help ensure optimal animal welfare and performance. Preventing problems is more economical than is treating them so in this era of challenging farm profitability, the concept of prevention will never grow cold.

For more information:

Body Condition Scoring

- www.ext.vt.edu/pubs/beef/400-795/400-795.html

Winter watering systems

- www.agr.gc.ca/pfra/water/winterw_e.htm

Water requirements

- www.omafra.gov.on.ca/english/engineer/facts/07-023.htm
- http://extension.oregonstate.edu/wasco/smallfarms/Feature%20Articles/Livestock/winter_care_livestock.html

Storm preparation

- [www.wvu.edu/~exten/depts/cewd/wvdemr/20Emergency%20Management%20Resources%20\(PDF%20Files\)/45.%20Section%206.7%20Winter%20Storms%20and%20Agricultural%20Producers.PDF](http://www.wvu.edu/~exten/depts/cewd/wvdemr/20Emergency%20Management%20Resources%20(PDF%20Files)/45.%20Section%206.7%20Winter%20Storms%20and%20Agricultural%20Producers.PDF)

Mud management

- www.horsesforcleanwater.com/samples/ClarkCountyManualSample.pdf
- www.kitsapcd.org/Easy%20BMPs/mud_management.htm
- www.kingcd.org/pub_mud_mud.htm
- www.agriculture.state.pa.us/agriculture/lib/agriculture/pascfiles/nutrientmanagement/Small_Scale_Livestock_Farm_Mud_Management.pdf

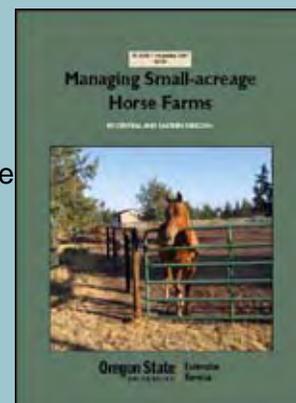
New Guide for Central and Eastern Oregon Horse Farms

A new guide for management of small acreage horse farms in central and eastern Oregon has just been published. The guide covers pasture management (including grazing management, fertilization and irrigation), designing drylots, and other aspects of management in a low rainfall area. A focus of the guide is seven steps to a safe, efficient, environmentally friendly horse farm:

- Step 1.** Don't beat up your pasture.
- Step 2.** Manage your pasture for optimal grass growth.
- Step 3.** Use buffer strips to protect water.
- Step 4.** Manage manure and bedding resources.
- Step 5.** Manage weeds to protect your horses.
- Step 6.** Install rain gutters and downspouts.
- Step 7.** Protect your household water supply.

You'll have to get a copy to get the details for each step. There are three ways to get a copy:

1. You can download the publication for free at: <http://extension.oregonstate.edu/catalog/pdf/ec/ec1610.pdf>
2. Or go to the Extension Publications catalogue at: <http://extension.oregonstate.edu/catalog/> and use the search function for "EC 1610." You may download a free copy or purchase a printed copy (\$4.50).
3. Or request it through your county OSU Extension Service office.



Spring Nitrogen Fertilization of Pastures

By: Sam Angima

Nitrogen is an essential element necessary for plants to grow especially for forages. Nitrogen is important in so many physiological pathways such as chlorophyll, protein synthesis, photosynthesis, utilization of sunlight, nutrient uptake, vitamin production, amino acid synthesis, and together with phosphorus in energy systems. If forages do not have enough nitrogen, they may appear stunted with very slow growth especially in the cool spring time and most important; they develop less tillers therefore you end up with less hay or pasture. So it is very important to apply nitrogen to forage like perennial rye grass, fescue, and orchard grass during winter or early spring. Remember that small amounts of nitrogen will increase early growth but when nitrogen is depleted, the resultant hay or pasture will be low in proteins (measured as total digestible nutrients – TDN). But how and when should you apply nitrogen?

I highly recommend a soil test right now since there are many different soils in Oregon. Any-one figure for one soil series will be misleading for other areas. Timing wise, we would use T-Sum 200 guidelines that use cumulative temperature measurements necessary for grass growth to begin on the basis of plant physiology. The T stands for temperature and 200 stands for accumulated heat units for consecutive days beginning January 1 of each calendar year until a total of 200 is reached. Now, a heat unit (or growing degree day), is

the average of the high and low temperature for the day in degrees Celsius ($^{\circ}\text{C}$). The formula for calculating heat units is: $(\text{maximum } ^{\circ}\text{C} + \text{minimum } ^{\circ}\text{C}) \div 2$. For example if the high for January 1st 2008 was $12\text{ }^{\circ}\text{C}$ and low was $4\text{ }^{\circ}\text{C}$, the number of heat units then for that day would be $(12+4) \div 2 = 8$. If temperature is less than $0\text{ }^{\circ}\text{C}$ then use 0 in this formula. Most of us take our temperature in degrees Fahrenheit ($^{\circ}\text{F}$). In this case convert $^{\circ}\text{F}$ to $^{\circ}\text{C}$ by using this formula: $[(^{\circ}\text{F}-32) \times 0.556 = ^{\circ}\text{C}]$. For example if your temperature is $40\text{ }^{\circ}\text{F}$, then corresponding temperature in Celsius is $(40-32) \times 0.556 = 4.45\text{ }^{\circ}\text{C}$.

If you take daily heat units this way for your site and add them up from January 1, 2008, then when you accumulate 200 heat units it is time to start applying nitrogen. . If you do not take your own temperatures, the OSU calculator (<http://www.ocs.oregonstate.edu/index.html>) gives you current cumulative temperatures around the state for your area. For details on how to individually calculate T-Sum 200, get the OSU guide EM 8852 located at <http://extension.oregonstate.edu/catalog/pdf/em/em8852-e.pdf>. Scroll to page 4-5 and follow the procedure outlined. This publication goes into details on how to manage your pasture to maximize on your inputs and changes in weather as the year progresses.

It is important to also think of the environment when you are ready to apply nitrogen. If the forecast calls for rain, it will be better to wait until the storms have



Orchard grass with no nitrogen applied. Photo by Sam Angima



Orchard grass 3 weeks after applying soil test recommended nitrogen. Photo by Sam Angima

Resources

passed before applying nitrogen to reduce chances of leaching and runoff. Nitrogen is very mobile in the soil system and will tend to leach before plants can use it. Also if it is dry, you can lose nitrogen to the atmosphere, so waiting a few more days to get some wetness will help the fertilizer to dissolve and become available to plant roots.

After applying nitrogen at T-Sum 200, it takes anywhere between 1-2 weeks for plants to start responding giving a flush of growth. At this point, nutrients stored in the root system are made available for tiller development and growth. I would recommend applying only a quarter to half of the recommended nitrogen at this time because of the possibility of leaching as plant growth is still restricted. Depending on your location, you may then apply the second half of nitrogen 60-75 days later to reinvigorate and flush up all tillers that have so far developed depending on your stocking rate and whether the pasture is irrigated. This also coincides with warmer weather when root growth is at its maximum. The other benefit of applying nitrogen at Tsum200 is that you can put your herd to graze the pasture up to three weeks earlier than traditional methods.

If you were not able to have a soil test done, then typically, 60 lb N/acre per application is recommended for rotational grazing systems. You can also determine how much nitrogen to apply by clipping to measure forage growth and by testing for crude protein. It makes economic sense to apply only the amount of nitrogen removed as protein in the forage. 

Producepedia.com Offers History, Nutrition and Health Benefits of Produce

A new online resource offers the history, nutritional content, and health benefits of many



fruits, vegetables and nuts. For instance, carrots originated in Afghanistan before the tenth century and the first domesticated carrots were purple. The modern carrots we are familiar with today originated in the Netherlands. Because carrots are high in carotenoids, they can help prevent diabetes. The website is the product of Western Growers of California and Arizona but other than citrus and avocados, most of the 50 fruit, vegetable and nut crops included on the website are also grown in the Pacific Northwest.



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FOR IMMEDIATE RELEASE

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Oregon Tilth's 33rd Annual Conference
Bringing Farmers Together for Over 30 Years

Salem, OR — December 13, 2007. Oregon Tilth is pleased to bring you our 33rd Annual Education Conference on Friday and Saturday, January 18 and 19, 2008 at the Salem Conference Center in Salem, Oregon. This year the conference theme is **Organic Integrity: Principles, Practices and Opportunities**.

The conference begins on Friday with registration and breakfast and concurrent daylong sessions addressing two of the hottest topics in the organic industry: Organic Livestock Production and Mainstreaming Organics. To finish the day we will have our annual organic beer and wine tasting that will highlight several of the area's local wines and beers followed by our annual awards dinner.

Saturday morning keynote speaker Jim Riddle, former chair of the National Organic Standards Board and leading voice for organic agriculture will Explore the Constellation of Organic Values. Riddle uses humor and inspiration as he guides the audience's travel through scientific findings and discusses actions needed to promote organic integrity.

A full day of various workshops and sessions will continue on Saturday. Topics include Nutritional Value of Organic Food, Infiltration of GMOs, Food Safety and Organic Production, NextGen: Challenges and Opportunities for Young Farmers, Micronutrient Uptake and Soil, and Transitioning to Organic. The closing address will be presented by Dr. Charles Benbrook of The Organic Center who will provide thoughts we should carry with us and take forth from here.

The two-day event includes an exhibition area where attendees can meet and ask questions of representatives from many different organizations, manufacturers and other advocates.

Registration forms and additional information can be found on the Oregon Tilth web site, www.tilth.org.

Oregon Tilth is a 501(c)3 non profit organization supporting and promoting biologically sound and socially equitable agriculture through education, research, advocacy. And certification. Oregon Tilth advocates sustainable approaches to agricultural production systems and processing, handling and marketing

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OSU to Host Small Farms Conference

Helping the owners of small farms market directly to the public is the focus of a conference hosted by Oregon State University on Saturday, Feb. 16, on the OSU campus.

This eighth annual Small Farms and Farm Direct Marketing Conference is coordinated by the OSU Extension Small Farms Program. The conference runs from 9 a.m. to 5 p.m. at the CH2M-Hill Alumni Center on the OSU campus.

The event is aimed at growers, market managers and community food advocates as a way to explore new ways to match the products grown on small farms directly with the consumer. The conference also will include information on marketing, business management, production, extending growing seasons, and food policy issues.

Fred Kirschenmann, a farmer who is a distinguished fellow at the Leopold Center for Sustainable Agriculture, will deliver the keynote talk at the conference, "Small Farms: Agriculture of the Past, or Agriculture of the Future."

Andrew Stout of Full Circle Farms in Washington will

give the concluding presentation, focusing on ways to grow the small farm business, from crop diversification to unconventional sales outlets.

Participants will have the opportunity to attend some of the 12 sessions at the conference. Topics include solar hoophouse production, extended season growing, poultry production, pest management, horticultural updates, whole farm business management, adding value to products, farmers' markets, grant writing, community-based projects and others.

Pre-registration costs are \$30 for individuals, or \$50 for two persons from the same organization. Due by Feb 7th. Late registration is \$35 per person. Registration at the door is \$40. Registration materials are available online at <http://smallfarms.oregonstate.edu> or call the Benton County Extension Office at 541-766-3556, or 1-800-365-0201.

Joining the OSU Extension Small Farms Program in sponsoring the event are the USDA Risk Management Agency, Western Risk Management Education; Oregon Department of Agriculture, Western SARE, and the City of Portland Office of Sustainable Development.

Small-Scale Organic Vegetable Production

Plan on joining other small farm entrepreneurs to learn the basics of growing vegetables organically.

Topics will include:

- Principles of organic production
- Soil fertility and nutrient management
- Integrated pest management
- Marketing opportunities



The seminar will be held Saturday, March 1, 2008 from 9:00 a.m. to 5:00 p.m. at the OSU Extension Service in Eugene. Pre-registration is required. Registration materials are available on-line at <http://smallfarms.oregonstate.edu/> or by calling (541) 766-3556. There is a \$25 registration fee to cover lunch, educational materials and workshop expenses.

Season Extension at Gales Meadow Farm

By: Anne Berblinger, Gales Meadow Farm

Season extension is an important part of our farming operation. Our customers really value getting fresh and local vegetables in late fall and early spring. The income from sales through December and starting again in late February and March is a real benefit for us.

We have used greenhouse (hoophouse) space for years to grow vegetable starts for ourselves and our farmer's market customers. We can get a head start on the season by starting hardy vegetables in the hoophouse and transplanting them in February. Starting in March, we use the hoophouses to start tomatoes, peppers, and eggplants. For the month of May, we sell starts at three farmers markets. The customers love the variety – 30+ kinds of tomatoes, 15 kinds each of hot peppers and sweet peppers, 7 kinds of eggplant, plus several other veggies – and they appreciate the experience which allows us to recommend specific varieties to meet their taste preferences and growing conditions.

Winter Greens

This season, Fall-Winter 2007-2008, is the second year we have grown winter greens for our customers, although we have grown them for ourselves for many years. We grow five kinds of kale, collards, spinach, turnip and beet greens, chard, arugula, *cima di rapa*, and some small Asian greens.

Our farm is in the Gales Creek Valley, at the foot of the Coast Range. Cold air funnels out of the mountains and seems to land right on our field. On a clear night, the temperature is often five degrees colder than Forest Grove, only five miles away, and ten or more degrees colder than Portland. Last winter was the coldest we have experienced since we began farming here in 2000. The ten days in January when the night temperatures got as low as 12°F and the days did not get above freezing

wiped out most winter greens varieties, although the collards survived. As I write this on December 20, 2007, the coldest temperature we have had is 28°F, and almost all the varieties are just fine. Some of the aisles between our raised beds had standing water for four days after the December 3 storm, and even this did not harm them. The exception is *cima di rapa*. The plants are alive and even growing but many of the leaves are frost bitten and the emerging buds are mushy.

We start the kale, collards and the beets and turnips for greens by sowing about 7-10 seeds in 4" pots right after the summer solstice and planting them out in the field in mid July. (The turnips were covered with floating row cover to protect them from flea beetles. Some of the turnips themselves are almost soccer-ball sized now, but they are still producing nice leaves and not bolting.) The other winter greens are direct seeded from late August through September. Everything

planted before mid-September did markedly better than the crops planted in late September.

Other than the flea beetles we kept off the turnips, the only pests which bothered these crops are aphids on the kale and, after the rains start, slugs. Neither of these caused enough damage to take any defensive action. The aphids attacked a small minority of the plants,

which we assume were less vigorous than the others. By the time the slugs re-appeared, all the plants were big enough to sustain a little nibbling without serious harm. We do check very carefully for slugs after harvesting, since we don't want to deliver those inferior escargots to our customers.

We don't sell kale or collards until after the first frost. I had always heard that the flavor is much better after



Broccoli raab and a mix of radicchio and red Siberian kale will be harvested later this winter. Photo by Nick Andrews

a frost and this year I did a taste test, which confirmed the conventional wisdom.

One way we market the winter greens is as a kale bouquet, a bunch containing White Siberian, Rainbow Lacinato and Redbor. These bouquets are popular with our farmers market customers.

We have harvested all of the winter greens aggressively, since there was demand for all we could pick. The new leaves grow more and more slowly as the light declines, and we will stop harvesting this week at the solstice. If it doesn't get cold enough to freeze them out, they will start growing nicely in early February and we will start harvesting again a few weeks later. At the end of the season in April, the broccoli-like flower buds produced by the kale and collards are a wonderful bonus.

Hoophouses

We use our hoop houses primarily to provide the growing environment for vegetable starts. We have a 10 x 20' hoophouse which was here when we started farming, and two 12 x 40' hoophouses we built within the last year, using plans provided in The Hoophouse Handbook, a booklet from *Growing for Market* (<http://www.growingformarket.com/>).

The old hoophouse has benches made of discarded prune drying racks. The benches in one of the new ones are about 32" high, made of scavenged pallets and 4x4's. There are no benches in the other new one; the ground is covered with a watering mat.

The only heat in the hoophouses is provided by agri-tape, an 11" by 25' strip of mylar with heating elements embedded in it. The agritapes are attached to a thermostat controlled by a probe inserted into one of the



A PVC framed hoophouse and a cheaper conduit pipe design (left), both have been withstanding heavy winds and rain. Photo by Nick Andrews

pots. This is an energy-efficient system since only the soil is being heated, not all the air in the hoophouse.



An experimental hoophouse design using rebar lined with used drip tape, promising but untested at Gales Meadow Farm. Photo by Nick Andrews

The tape draws about 10 watts per foot. Agri-tape is manufactured by the Ken-Bar company in Massachusetts and is available through the Oregon Bag Company by special order.

When we are germinating onions, lettuce, or other hardy vegetables, we don't use the agri-tape. When we are germinating tomatoes, etc. we set the thermostat at 85°F and cover the flats with plastic domes. If the outside temperature is well below freezing, we add a layer or two of floating row cover. Once the seeds have germinated, we set the temperature a little lower. As the benches fill up, the hardy vegetable starts are moved to tables outside, and the tomatoes are moved to the benches without agri-tape. Again, extra protection on freezing nights is provided by one or two layers of row cover.

We have experimented with alternative materials for the hoophouse frames. One of the new hoophouses has conduit instead of PVC. Some new high tunnels have frames of rebar threaded through old t-tape. Both new are cheaper than PVC, and are sometimes available really cheap at the Re-Building Center.

The hoophouse without benches is used for micro-greens grown in a mix of peat moss and humus. They are watered from beneath through the watering

mat. In summer, this hoop house will get a shade cloth and become a shade house.

2007 was a lousy year for long-season hot peppers, like habaneros and scotch bonnets. We planted some in the field, but they did not ripen until October. Others were potted into gallon and three gallon pots, left in the greenhouse, and hand-watered at least once a day. The fan was turned off, so temperatures reached as high as 125°. We got ripe and super-hot peppers by mid-August.

We see many possibilities for stretching the season even farther. Doubling or tripling the winter greens plantings would allow us to leave some untouched in November and December, and available for harvest through the rest of the winter. The hoop houses could allow us to grow in containers for earlier - and later - harvest of tomatoes, peppers, and eggplants. The rebar tunnels should give a few weeks head start on some hardy salad crops. 🌿

Signs, Signs, everywhere are Signs

Protecting visitors, both wanted and unwanted to your farm could very well be one of your most important tasks. By putting safety measures in place, you can reduce the likelihood of an injury or death to family members, employees or other visitors to your farm, as well as decrease your liability to those who wander onto your land uninvited.

When visitors are on your farm, take the time to familiarize them with their surroundings and, more importantly, do not leave them unsupervised. No matter how well you follow safe operations on your farm, there is still the risk of unwanted visitors coming onto your property, exposing you to a liability. People often come onto farmland without permission for recreational purposes, such as hunting, fishing or swimming. While their intent may be for fun, the results could prove deadly. The steps in the box below can help you avoid unwanted visitors and dissuade them from stepping foot on your land in the first place. Also, take time to walk around your farm, noting possible hazards and addressing them. In doing so, you can help reduce the number of injuries on your property, as well as the chance of having liability lawsuits.

- Post "No Trespassing" signs around the perimeter of your farm and on all trails and roadways leading into it.
- "Warning" or "Hazardous Area" signs should be posted in all high-risk areas, such as loading and unloading zones, or areas where augers, elevators or high amounts of electricity are present.
- While fences around your property are a good idea, they are often cost prohibitive. If fences are present, make sure they are in good condition. If wire or cable is used for a gate closure, clearly mark it with flags or reflective markers.
- If an electric fence is in use for livestock, the fence line should be marked with warning signs. Always close gates and secure with a chain and hook and, if possible, a padlock.
- Wells, drainage pits, manure lagoons and large stock ponds should all be fenced and have locked gates.

We're looking for articles from PNW farmers to publish in "Oregon Small Farm News"



Highlight Your Farm



Share Stories, Art & Poetry from the Land



Describe Things You've Learned to Help Make Your Farm a Success



Publish Great New Recipes



Be Creative & Share New Ideas

Most articles are about 400 words but articles of about 1000 words can sometimes be included

Please include photos with captions

Submit articles with your contact details in Microsoft Word on a CD or via email to:

Chrissy Lucas, OSU Extension, 1849 NW 9th St.,
Corvallis, OR 97330 or
e-mail Chrissy.Lucas@oregonstate.edu
(541) 766-3556

Upcoming Deadlines

Spring issue ~ February 15th

Summer issue ~ May 15th

Fall issue ~ August 15th

New DEQ Compost Facility Rules

Impact on On-Farm Composting

By: Nick Andrews

DEQ is updating the administrative rules that govern composting facilities in Oregon. A rule making work group made up of compost industry representatives, regulators and other stakeholders has been meeting since February 2004 to advise DEQ as they draft these new rules. The work group meetings have now finished and DEQ is finalizing the draft rule and preparing for public comment.

The rules focus mainly on composting in an industrial setting, but the current draft rules will increase regulation of agricultural composting. As the only representative of small and mid-sized farmers on the work group I have relied on the advice of a group of farmers who make and use compost. I have attempted to represent their concerns; however, public comment from farmers is critical if agricultural interests are to be adequately considered in the final stages of this rule making process (see “public comment” below). The draft rule has changed dramatically throughout the process and there were widely divergent perspectives and opinions on the work group.

Water Quality

The impact of composting on water quality is a major concern for DEQ and the new rules will include stricter controls to prevent compost leachate from entering surface and ground water. Most commercial facilities will be required to install concrete pads or other permanent surfaces, and leachate collection and treatment systems. Farmers prefer green solutions to steel and concrete and most would not install concrete pads on their farmland. Many agricultural composters regularly move piles to different areas on their farm, then produce crops on land previously used for composting. They compost in an agricultural setting and have access to a large land base rather than a small industrial lot. Farmers can protect water quality by managing pile moisture and covering piles to minimize leachate production. They can also move piles to prevent leachate from saturating the soil in one area. For these reasons, a variance from the requirement for concrete pads was recommended for seasonal and temporary compost piles on farms. The variance

was opposed by some commercial composters.

DEQ and ODA

The DEQ administers regulations that govern the management of solid waste, including composting. They have established a Memorandum of

Understanding (MOU) to work with ODA who will

administer these rules on some farms using agricultural compost management plans (ACMP). These plans are written to meet the same environmental standards as DEQ permits. DEQ permit fees can be expensive and are out of reach for most small and mid-sized organic and sustainable farmers who usually do not charge tipping fees and who use compost as a soil amendment. Agricultural representatives felt that farmers are more accustomed to working with ODA, and ODA inspectors are more experienced at addressing environmental concerns in agriculture. We urged DEQ to allow ODA to administer the new rules on farms. In the current draft of the rule some farms will be regulated by DEQ permits, some will have ODA ACMPs, and the smallest will be exempt from regulation.

Current Agricultural Exemptions

In the current rule farms composting less than 20 tons of any feedstock are not required to have a DEQ permit or an ODA ACMP. Currently farms are not required to have a DEQ permit or ODA ACMP if they compost



Figure 1. Example of a compost pile from a farm that will have to choose between reducing their composting or navigating the new rules
Photo by Wali Via

green feedstock from their farm and apply the compost on their farm. An ODA ACMP is required if any of the compost from green feedstock is sent off the farm. An ODA ACMP is also required if farms compost more than 20 tons of non-green feedstock from their farm whether it is used on site or not.

A calculated amount of supplemental waste from off-farm is allowed without a DEQ permit if needed to maintain the composting process of the on-farm feedstock. When off-farm waste exceeds the calculated supplemental level, a DEQ permit is currently required.

Proposed Agricultural Exemptions

In the latest version of the new draft rule, feedstocks have three new categories (see Appendix A). Farms composting less than 20 tons of type 3 feedstock or less than 250 tons of type 1 or 2 feedstock will not need a DEQ permit or an ODA ACMP.

Farmers composting more than 250 tons of any material from any source, including their own farm, will now need an ODA ACMP. An ODA ACMP will be required whether the compost stays on the farm or is sent off the farm. Additionally the proposed rule will limit non-agricultural supplemental feedstock to 500 tons of type 1 or 2 material (ie. leaves, vegetative food waste, sawdust, wood chips and yard debris). The proposed rule does allow farms to use agricultural waste under an ODA ACMP whereas the current rule requires a DEQ permit if agricultural waste from other farms exceeds the calculated supplemental amount.

A previous draft of the rule required DEQ permits if a farmer uses any supplemental non-agricultural waste. This was supported by many compost industry representatives who urged the DEQ to prohibit composting of materials like leaves on farms unless they have a DEQ permit. Our concern with this stringent approach was for row crop farmers and livestock producers with limited access to agricultural feedstock. In many areas of Oregon leaves, vegetative food waste, forestry waste and other non-agricultural type 1 feedstock is carefully composted on farms. This practice helps to increase recycling of these materials while keeping costs down and helps to improve soil

quality while protecting the environment and human health. With ODA oversight such compost piles can be managed in an environmentally safe manner and sustainable farmers can be allowed to improve their soil quality in a cost effective way. If DEQ permits were required, on-farm composting would likely be unnecessarily inhibited.

On-farm composting can improve Oregon's soil quality and create a stronger, more resilient and more cost efficient organic waste recycling system. Regulations should protect human health and the environment while promoting composting on Oregon farms. DEQ needs to hear from farmers and other agricultural representatives in order to take agricultural interests into account during the final stages of rule making.

Public Comment

Public comment periods are expected to be the third week of February with meetings in Portland, Eugene, Bend, Medford, and Klamath Falls. Additional changes in the rule are possible and DEQ needs to hear from agricultural representatives in order take their concerns into account. Important points that have been made by agricultural composters include the following:

- Many organic and sustainable farmers aim to improve soil quality by composting and should not be subject to excessive regulations in their attempts to improve the environment.
- Many farmers will stop or severely limit composting if DEQ permits are required. Where regulation is necessary, ODA ACMPs would be less inhibiting. The MOU between DEQ and ODA should be continued.
- The proposed variance from the requirement for concrete liners should be allowed for seasonal and temporary agricultural composters since land used for composting is often returned to farming.
- More than 500 tons of supplemental non-agricultural type 1 material should be allowed on-farms under an ODA ACMP.

Additional information and the schedule of public hearings will be available at the DEQ website: <http://www.deq.state.or.us/lq/sw/compost/rulemaking.htm>. Public comment can also be sent to Pat Vernon, Solid

Waste Policy and Program Development Section,
811 SW Sixth Ave., 9th floor, Portland, OR 97214.

Wym Matthews from the ODA will be presenting information on the draft rules at the North Willamette Horticulture Society Winter Meeting on Tuesday January 15th at the Clackamas County Fairgrounds in Canby, registration information is at: <http://oregonstate.edu/dept/NWREC/Banners/Events.html>. DEQ and the Composting Council of Oregon are having an informational session to provide information for people wishing to make public comment. This event is on Tuesday January 29th at the DEQ offices from 10AM–1PM in EQC Room A on the 10th floor at 811 SW Sixth Ave., Portland. ☞

Appendix A

Reworded Excerpts from Current Exemptions to DEQ Permit

A. Composting operations (including farms) composting 20 tons or less feedstock per year
Agricultural composting operations are exempt from DEQ permits if:

- A Composting green feedstock (includes plant material and animal manure) generated and composted at the same farm and
- B All compost is used at that farm at or below agronomic rates
- C Any compost is sent off farm a compost management plan must be maintained with ODA
- D Composting non-green feedstock (i.e. animal parts and by products)
- E That is generated and composted at the same farm, and
- F A compost management plan is maintained with ODA
- G Note: supplemental green feedstock from off-farm is allowed if required to maintain the composting process

H
I **Reworded Excerpts from New Draft Exemptions to DEQ Permit** (as of the final work group meeting, October 24th, 2007)

A composting facility is exempt if:

- A Composting no more than 250 tons of type 1 or type 2 feedstock per year
- B Composting no more than 20 tons of type 3 feedstock per year
- C Composting no more than 40 tons of type 3 feedstock per year in a container

An agricultural composting facility is exempt if:

Composting no more than 250 tons of agricultural waste and no more than 20 tons of any off-site agricultural waste consisting of dead animals or animal parts per year

Operating in compliance with an ODA agricultural compost management plan and composting the following quantities of feedstock per year:

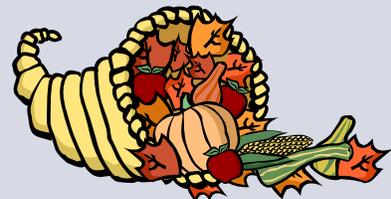
- More than 250 tons of agricultural waste
- More than 20 tons of off-site agricultural waste consisting of dead animals or animal parts
- Up to 500 tons of supplemental feedstock that is not agricultural waste

Examples of Proposed Feedstock Types

- Type 1: yard waste, crop residue, vegetative food waste, wood waste, etc.
 - Type 2: manure and bedding
 - Type 3: dead animals and animal parts, meat and mixed food waste
- Supplemental feedstock: type 1 and 2 feedstock from off-farm that are the minimum amount necessary to allow composting of on-farm and on-site feedstock.

53rd ANNUAL NORTH WILLAMETTE HORTICULTURE SOCIETY MEETING

*Introducing the new
Organic Crops Day*



*January 15th ~ Organic Crops Day
January 16th ~ Vegetable Day
January 17th ~ Berry Day*

*Clackamas County Fairgrounds
694 NE 4th Ave
Canby, Oregon*

*Registration fees include
breakfast & lunch
One day = \$30
Two days = \$50
Three days = \$75
Exhibitors = \$175*

*Program & registration forms
available at the
OSU North Willamette Research &
Extension Center Website:
<http://oregonstate.edu/dept/NWREC/>*

Calendar

January

17 - Rural Living Basics

Rural residents learn the basics of drinking well water and septic systems to protect your family's and livestock's health, your property investment, and the safety of groundwater resources. Turner, OR. For more information contact Chrissy at (541) 766-3556. **FREE**

18 - 2008 Oregon Tilth Conference

Organic Integrity: Principles, Practices, and Opportunities. For more information visit our website <http://www.tilth.org>

26 - Blueberry and Table Grape Pruning Seminars

Receive guidance and practice pruning, bring your own pruning tools. Registration forms available at extension.oregonstate.edu/benton/ For more information: (541) 766-6750. **\$10 each**

30 - Rural Living Basics

Rural residents learn the basics of drinking well water and septic systems to protect your family's and livestock's health, your property investment, and the safety of groundwater resources. 1:00 PM - 3:00 PM Coburg City Hall, & 6:00 PM to 8:00 PM Harriburg, OR. For more information contact Chrissy at (541) 766-3556. **FREE**

February

16 - Extension Small Farms and Farm Direct Marketing Conference

The conference will present information on Marketing, Business Management, Production, Season Extension and Food Policy issues. OSU Alumni Center, Corvallis, Or. 9:00 AM to 5:00 PM. Brochure and registration materials on-line at smallfarms.oregonstate.edu or call 541-766-3556 or toll free at 1-800-365-0201. **\$30**

17 - Extended Season Production: Tour for Producers

Registration form is at http://smallfarms.oregonstate.edu/sites/default/files/Extended_Season.pdf Enrollment is limited to the first 40. 9:00 AM - 3:30 PM. Corvallis, OR. **\$45**

March

15 - Tree Fruits Pruning Seminar

Receive guidance and practice pruning, bring your own pruning tools. Registration forms available at extension.oregonstate.edu/benton/ For more information: (541) 766-6750. **\$10**

Please visit our website <http://smallfarms.oregonstate.edu/events> for more Winter events.

Want to add your event to our calendar then please submit your information at <http://calendar.oregonstate.edu/advanced/list/extension-smallfarms/> "Click the Submit an event button." Events have to be approved and will not immediately post. If you have questions please contact Chrissy Lucas at Chrissy.Lucas@oregonstate.edu or 541-766-3556