Summer 2010

# Oregon Small Farm News

Oregon State University Small Farms Program

## In This Issue:



OSU Oregon State University Extension Service

## OSU Extension Service Small Farms Staff

Garry Stephenson
Small Farms Program Coordinator
Corvallis, OR 97330

Sam Angima
Lincoln County
29 SE 2nd Street
Newport, OR 97365
541-574-6534

Nick Andrews
Clackamas & Washington Counties
15210 NE Miley Road
Aurora, OR 97002
503-678-1264

Melissa Fery
Benton, Linn, & Lane Counties
1849 NW 9th Street
Corvallis, OR 97330
541-766-6750

Dana Martin
Deschutes, Crook, & Jefferson Counties
3893 SW Airport Way
Redmond, OR 97756

Melissa Matthewson
Jackson, Josephine, & Douglas Counties
569 Hanley Road
Central Point, OR 97502

Maud Powell
Jackson, Josephine, & Douglas Counties
569 Hanley Road
Central Point, OR 97502

Chrissy Lucas
Small Farms Program Assistant
1849 NW 9th Street
Corvallis, OR 97330
1-800-365-0201


**Cover Photo:**

Combining old and new. Solar panels installed on turn of the century barn provide energy for irrigation pump and other farm use at Leaping Lamb Farm on page 5
*Photo by Melissa Fery*


Layout by:
Chrissy Lucas, Oregon State University Extension Service Small Farms Program




# Central Oregon Food Network

**By: Dana Martin**

Local producers gathered to celebrate the launch of this website.
*Photo provided by Dana Martin*

The Central Oregon Food Network website has officially launched, providing local farmers and ranchers an opportunity to connect, share resources and discuss pertinent issues. The website found at http://centraloregonfoodnetwork.com/ provides a producer's directory which features nearly 40 farms and ranches in Central Oregon. A list of 10 local restaurants and retailers are also listed due to their support of local food production and consumption.

A "Current Features" section highlights timely articles to help keep producers informed. Through "Network Now" people can post announcements or make a plea for something they need. Kim Kambak of The Last Stand Farm in Prineville made the most of this tool when she put out her request. "Mother got my last tomato starts. Does anyone have extras? At this point, any red, fruity thing will be acceptable," writes Kim.

The website offers a discussion forum where farmers and ranchers can submit questions and share their knowledge about growing techniques and other subjects such as alternative fuel, working with worms and growing exotic grains. A section on "Grants and Funding Opportunities" will also assist producers.

The website was developed by Sarahlee Lawrence of Rainshadow Organics in Terrebonne. Sarahlee received a $15,000 Western Sustainable Agriculture Research and Education (SARE) Farmer/Rancher Research & Education grant. SARE is a USDA competitive grants program that supports agricultural systems that are economically viable, environmentally sound and socially responsible. Dana Martin of OSU Extension Service and Katrina Van Dis of Central Oregon Intergovernmental Council assisted on this grant.

A public website launch celebration was recently held where Central Oregon farmers and ranchers gathered to show their support and enthusiasm for the website. Sarahlee is pleased with the results and anxious for people to make the most of it.

"I hope the website really works in connecting our local farmers and ranchers," she says noting that the Central Oregon Food Network website can be used for collaboration on buying seeds, marketing produce and much more. "If we all use it, I think it will help everyone be more successful."

# What's Up With The Weather?

By: Nick Andrews

Even for Oregon this is a wet spring. Long term residents of Western Oregon often say that you can't rely on dry weather until after July 4th. 2010 looks like another year that could validate the saying. Scientists try to predict the future by studying natural phenomena. Weather forecasters are one the few scientists who are regularly expected to look in their crystal ball and tell us what's going to happen next. A tough job, but on the whole they're getting it right this year.

2010 is an El Niño year, and this explains what we've experienced this spring. This year we had 13.8" of rain from March through June 10 according to Agrimet data taken at Hyslop Farm in Corvallis, the second heaviest rainfall in that period since 1990 (table 1). The heaviest rainfall in that time period was in 1993 (16.5"). Experienced farmers report that it has been one of the most challenging springs they can remember for working the soil. The rain has been very well distributed and many fields have been too wet to cultivate through at least mid June. As a result, early season farmer's markets and CSA shares might lack a little luster this year.

George Taylor (Applied Climate Services, Corvallis) was the State Climatologist for Oregon from 1991-2008. He said this spring is not a record year for wet weather or for cool weather, but "the combination of unusually wet and cool weather is remarkable". By the 15th, June 2010 became the wettest June on record with 4.2" of rain accumulating at the Portland airport. The previous June rainfall record was set in 1984 with 4.06" of rain for the month. On June 15, records were also broken for the lowest daily maximum temperature, with a high of 57°F in Portland, the previous record was 60°F set in 1954. With well distributed rainfall and cool temperatures, soil is certainly very wet this spring! Soil moisture records don't go back far enough to confirm whether soil moisture levels are breaking meaningful records. However, Gordon Kenyon (Crop Production Services) explained that "rainfall is recharging the soil at a much higher rate than is normal for this late in the season and cool temperatures are keeping evapotranspiration rates lower than normal so the soil isn't drying out. This is a very wet spring and a small minority of farmers will be able to save money by irrigating less though others are unable to irrigate because river levels are too high to place pumps in the rivers. Cool, wet soils can also be problematic as many crops are either not planted, stall their development, or have disease issues in anaerobic soils. Crops that are particularly sensitive to "wet feet" will struggle the most."

| Year | Evapotranspiration (ET) (inches) | Precipitation (PPT) (inches) | PPT-ET (inches) | ET (rank low-high) | PPT (rank high-low) | PPT-ET (rank high-low) |
|---|---|---|---|---|---|---|
| 1990 | 11.25 | 6.27 | -4.98 | 2 | 20 | 16 |
| 1991 | 11.95 | 12.02 | 0.07 | 6 | 8 | 8 |
| 1992 | 17 | 4.84 | -12.16 | 21 | 21 | 21 |
| 1993 | 13.49 | 16.45 | 2.96 | 15 | 1 | 3 |
| 1994 | 14.74 | 6.83 | -7.91 | 20 | 16 | 20 |
| 1995 | 13.93 | 11.52 | -2.41 | 17 | 9 | 9 |
| 1996 | 11.55 | 13.13† | 1.46 | 4 | 6 | 6 |
| 1997 | 12.5 | 14.14 | 1.64 | 10 | 5 | 5 |
| 1998 | 10.61 | 14.48 | 3.87 | 1 | 4 | 1 |
| 1999 | 12.22 | 7.93 | -4.29 | 7 | 15 | 13 |
| 2000 | 12.39 | 8.19 | -4.2 | 9 | 13 | 12 |
| 2001 | 13.11 | 6.28 | -6.83 | 13 | 19 | 17 |
| 2002 | 12.84 | 9.64 | -3.2 | 12 | 11 | 10 |
| 2003 | 12.7 | 14.88 | 2.18 | 11 | 3 | 4 |
| 2004 | 14.15 | 6.55 | -7.6 | 19 | 18 | 19 |
| 2005 | 12.32 | 12.86 | 0.54 | 8 | 7 | 7 |
| 2006 | 14.08 | 9.68 | -4.4 | 18 | 10 | 14 |
| 2007 | 13.7 | 6.6 | -7.1 | 16 | 17 | 18 |
| 2008 | 11.92 | 8.18 | -3.74 | 5 | 14 | 11 |
| 2009 | 13.12 | 8.58 | -4.54 | 14 | 12 | 15 |
| 2010 | 11.51 | 14.96 | 3.45 | 3 | 2 | 2 |

Table 1. Precipitation minus evapotranspiration from March 1 – June 10 (1990-2010) at Hyslop Farm, Corvallis, Oregon. *Courtesy of Len Coop (OSU Integrated Plant Protection Center). † one day of precipitation data was missing and was corrected with data from Forest Grove.*

Len Coop (OSU Integrated Plant Protection Center) reviewed historical precipitation and evapotranspiration data between March 1 and June 10 at Hyslop Farm in Corvallis since 1990 when these records started (table 1). Evapotranspiration equals evaporation plus transpiration. Precipitation (PPT) minus evapotranspiration (ET) provides an estimate of how much moisture is being added to the soil from rainfall and how much is being lost from evapotranspiration, and can be used as a gauge to estimate muddiness. Water is also lost by soil drainage, but this is a very site specific factor. PPT – ET can provide a relative soil moisture index that allows us to compare soil moisture across a region and over time within different soil types. Len's analysis confirms grower's observations that this is one of the wettest springs in memory as far as soil moisture is concerned. PPT – ET is higher this spring (3.45") than any other year on record except 1998 (3.87"). The winter of 1997-98 was the strongest El Niño ever recorded.

Silver lining: below average precipitation through February was followed by wet spring conditions that rescued us from possible water supply problems. Locally, the total precipitation for October-February was about 90 percent of average. However, in the Cascades, total precipitation for that period was only 74 percent of average and the snowpack at the end of February was just 40 percent of average. If we had gotten a warm, dry spring we would now be concerned about drought.

The El Niño-Southern Oscillation (ENSO) is a climate pattern in the tropical Pacific Ocean. On average, it occurs about every five years. Last winter saw moderately strong El Niño conditions. Normally winds in the tropical Pacific blow from the east (Americas) to the west (Asia), taking the surface water with them. The water heats up because it is exposed to the sun for a long time. Cool, nutrient rich water rises to the surface in the Eastern Pacific. Cooler water means less evaporation and thus drier air. Therefore, the west coast of South America has a very dry climate. The warmer water in the western Pacific promotes high rates of evaporation and generally wet climates.

During an El Niño the trade winds from east to west weaken or even reverse. Warm surface water from Asia (western Pacific) can then flow east towards the Americas and warm the eastern Pacific. The warm water also creates a warm wet atmosphere with heavy rain and thunderstorms. The generally mild winter temperatures and heavy spring rains we have seen in Oregon are typical for an El Niño winter and spring in our region. Extreme cold events are also characteristic of El Niño effects in Oregon, and could explain the "Arctic Blast" that froze so many crops in December.

La Niña is the opposite of El Niño. Water in the eastern Pacific becomes cooler, creating cooler than normal air temperatures in the Americas (including Oregon). Last winter's El Niño ended during May, and conditions are currently favorable for La Niña conditions to develop over the summer. The Climate Prediction Center issued a La Niña watch on June 3, forecasting a 50% chance of La Niña conditions. George Taylor explains that "Summer weather in Oregon is influenced more by local conditions than La Niña conditions in the tropics. Nearly every summer we see three months or so of warm, dry summer weather, when summer starts late it tends to continue later into fall. If we do see La Niña conditions we could expect a dry and somewhat mild fall followed by a stormy mid winter with a lot of snow. Spring tends to arrive earlier after La Niña."

Weather patterns are extremely complicated and difficult to predict, especially on a long term basis which would be useful for crop planning. Climatologists have made great strides in predicting weather and the resources below may help you better understand long term trends and prepare for weather events that may affect your bottom line.

**For More Information:**

*Climate Prediction Center:* http://www.cpc.noaa.gov/
*Oregon Climate Service:* http://www.ocs.oregonstate.edu/
*Applied Climate LLC. Includes George Taylor's weather blog*: http://appliedclimate.wordpress.com/
*The Weather Café by Rufus La Lone*
http://www.ovs.com/weather_cafe.htm
*National Weather Service forecasts*
http://www.weather.gov/
*Accuweather forecasts*
http://www.accuweather.com/

# Leaping Lamb Farm Stay

**By: Melissa Fery**

Scottie and Greg Jones moved to rural Alsea, Oregon to escape the 6 lanes of bumper to bumper traffic of Phoenix, Arizona and to literally find greener pastures.

"One motivation for moving to Oregon was for water. After living in the desert and not knowing where our water was coming from or what would happen if we ran out, we were looking for some place to be self-sustaining if needed. We never thought that in some years, there would be too much water."

June 2003 brought forth a summer Scottie and Greg will not soon forget. "We moved to our 40 acre farm, brought our horses, dogs, a cat, and no farm experience. That first summer was dramatic. Within the first day, one of our dogs tried to kill a rooster, within the first week, a sheep. I called a neighbor to get a recommendation for a vet. She told me you don't call a vet for sheep, the call would cost more than the sheep itself. You've got to do it yourself."

From learning all about animal husbandry to having irrigation pipes blowing and the pump dying they were starting to doubt their choice to move north.

"Even our horses thought they'd died and gone to hell. It was 105 degrees in Phoenix when we left and 40 degrees when we arrived in Alsea. The horses didn't want to leave the trailer."

Orchard on Leaping Lamb Farm.
*Photo provided by Melissa Fery*

View from farm stay cabin deck. *Photo provided by Scottie Jones*

Scottie says that when she writes her book, the first line will read, "We moved to our farm on June 13th, it was a Friday."

Regardless of the steep learning curve, the Joneses are here to stay.

Leaping Lamb Farm is nestled in a valley of the Oregon Coast Range. Honey Grove Creek, a salmon-spawning creek, meanders through the middle of the property. The farm has a rich history in the area, with the original homesteaders clearing fields and farming since 1895. Scottie and Greg decided to continue growing hay and raising animals on the land.

Sheep and chickens were the farm first's ventures, mostly due to the fact that the previous owner informed the Joneses they were a requirement to control the bugs and grasses. After some negotiation, the animals were purchased, thus beginning Leaping Lamb Farm.

"We started with wooly mutts, but have now moved into raising mostly Katahdin hair sheep," says Scottie. After having the barn fill up with wool and finding that it wasn't profitable to sell, they started making the switch to hair sheep. There are other benefits to raising Katahdins too.

"The meat is leaner and they have less foot and worm issues," Scottie says. Emery Jones, Scottie and Greg's

Young farm stay guest checks in on the sheep.
*Photo provided by Kristin Frits*

daughter, after completing a pre-veterinarian degree, came to Oregon to help at the farm. She has now stepped in to manage the changing flock. Last year, after completing a genetic study of their ewes, Emery culled the herd and introduced a Dorper ram. Currently, most of the lambs are sold wholesale to two other local farms for processing and direct sales to customers. As they continue their lamb business, Scottie is looking at other options for marketing.

"We do sell the lamb-mowers on Craigslist and that has been pretty successful." Scottie further explains that lamb-mowers are those lambs that are too small for market and bummers that are sold as pets to people that need to keep the grass down in their backyards.

In addition to the horses, the farm is also home to turkeys. Starting with a Heritage Bronze breeding pair, and then adding other breeds like Narragansett and White Holland, the turkey business has been challenging.

"It's hard to keep the poults alive the first week. One year, the tom sat on the eggs and hatched them. He would smash and smother the babies, so we rescued the babies as soon as they hatched and hand raised them through the first week," says Scottie.

This year the hen wouldn't sit on any of the eggs, so Emery set up an incubator and hatched them in the house. Even though there is a high demand for these birds, the future of turkeys on this farm is dim.

Despite the seemingly insane learning experiences that Scottie and Greg have weathered, one thing has remained constant: a desire to share their farm with others. Originally intended for Emery, the Jones' built a cabin with a farm family help dwelling permit. In 2006, they determined that the cabin wasn't needed for its original purpose, so they worked with Benton County Planning Department to get a variance to use the cabin for on-farm lodging.

"The Benton County planner was great to work with. I knew about the farm stay concept, which is popular in Europe, but I researched more and included information along with the permit application," explains Scottie.

In the application, she shared information about potential rural economic development. Her neighbors were notified about the conditional use permit, but didn't object and Scottie proved that there would be no impact to farming or logging practices as a result of the farm stay business.

The first year, friends and family readily agreed to be used as practice, while the Joneses figured out the details of hosting a farm stay. The next step was marketing the business, through a well crafted website.

"Our website is how this all started. I've never sent out a press release. When people do a web search for 'farm stay', Leaping Lamb Farm comes up on the first page." Scottie says.

The farm stay attracts families wanting to get away and spend time together, friends looking for something different, couples wanting a quiet retreat with nothing to do but drink wine and read a book. Leaping Lamb Farm Stay provides all of this and more.

Resident turkey
*Photo by Annette Cooke*

"Families come to our farm to play. They play in the creek, they explore the woods, they play basketball in the hay loft, they build forts out of hay bales on rainy days. They make breakfast together and eat dinner as a family."

People readily pay to experience farm life. Many of the Jones' guests are from cities and are generations removed from farming, but admire farmers and what they do. Scottie feels that the farm stay is also a way to connect with people and explain the importance of sustainable farming and local food systems.

"Our guests want to get back to the land. They want to see and taste food picked straight from the earth," adds Scottie.

Leaping Lamb Farm gives people those experiences as they pluck carrots from the garden, munch on fresh raspberries from the bush, and wander amongst the livestock. Collecting eggs from the chicken house, then breaking them into a pan and cooking them for breakfast may seem routine for farm families, but for the farm stay guests, it is a wonder.

"I needed a way to improve the income stream on this farm. I had the desire to share this beautiful place, so the farm stay idea has worked out for us."

Currently, the cabin is booked about 60% of the year. Mostly weekend get-aways are booked in the winter months and then solid weeks from June through Labor Day. Fall bookings are also gaining popularity. Travelers from other countries and across the U.S. often include a stop-over at Leaping Lamb Farm in their travel plans. Many weekend guests will drive or fly in from Portland, Seattle, San Francisco, and Los Angeles.

The Jones' business has grown because of good media and guests sharing their experiences with others. Leaping Lamb Farm led a story on Five Fun Family Vacation Getaways on NBC's Today Show through Budget Travel and Travel Oregon. The farm stay was also featured in Sunset Magazine as one of Top 10 Spring Flings, along with beaches in Mexico.

Scottie teaches guests about the farm life.
*Photo by Melissa Fery*

One minor drawback of such a successful business: Scottie has created another 7-day-a-week job for herself. However, because of the customer recognition and increased business, she is able to hire a few people in her community to help out. Scottie also includes hand-crafted items from several Benton county artisans in her farm shop. Guests can purchase locally made souvenirs, like lamb tic-tac-toe games, jig saw puzzles, puppets, stuffed toys, and soaps, along with Leaping Lamb Farm t-shirts and hand appliquéd tea towels, to take home with them.

When asked why this business has been successful for their farm, Scottie shares, "I think I'm good at this business and hosting guests on the farm because I came from the city too. I'm still amazed by this place. Sometimes when I look at the farm, all I see is work. Broken fences and chores that need to get done. When guests are here they see the farm with fresh eyes and then I get to see it that way too and remember."

One reality with Leaping Lamb Farm Stay is that there are more people that want to book vacations then time and space will allow. This situation has created Scottie's latest project. With assistance from Cascade Pacific RC&D and OSU Extension Small Farms program, Scottie has been able to secure funding to launch a website, Farm Stay U.S. (http://www.farmstayus.com), to help other farmers interested in offering lodging have an on-line presence and begin farm stay opportunities.

The project has two main goals: 1. To provide education and outreach to farmers interested in

adding lodging to their operations, through on-line tutorials, networking and mentoring, and 2. To market farm stay lodging to guests. The ultimate goal: to create an Oregon Farm Stay Association, easily scalable to a regional Northwest Farm Stay Association and, finally, an American Farm Stay Association.

The Joneses feel farm stays are a win-win opportunity. City folk and travelers want to connect with the land and many farms need additional revenue to be sustainable. This is simply a form of agritourism that promotes Oregon agriculture and encourages awareness of local food and land stewardship.

For any farmers interested in the farm stay concept, Scottie is willing to help answer questions and provide ways to get involved with the project. Feel free to check out the Leaping Lamb Farm Stay website http://www.leapinglambfarm.com/ and then contact Scottie directly.

# PROPOSED RULE TO INCREASE FAIRNESS IN MARKETING OF LIVESTOCK AND POULTRY

The USDA announced a proposed rule that will provide significant new protections for producers against unfair, fraudulent or retaliatory practices. The proposed rules address concerns that have been discussed for many years and were developed at the direction of the 2008 farm bill. The action was at the urging of over 200 organizations across the country to include a component to the farm bill to improve market fairness and competition for producers.

Many of the concerns were related to increasing consolidation and vertical integration in the livestock and poultry marketplace, and shrinking farm numbers. For instance, there were over 666,000 hog farms in 1980, but only roughly 71,000 today. In the cattle industry, there were over 1.6 million farms in 1980, but only roughly 950,000 today. In the hog industry, producers received 50% of the retail value of a hog in 1980, but only 24.5 percent in 2009. For cattle, producers received 62 percent of the retail value of a steer in 1980, but only 42.5 percent in 2009. In the poultry industry today, a grower makes 34 cents per bird, while the processing company however on average makes $3.23 a bird.

Examples of protections the proposed would provide:

- Provide further definition to practices that are unfair, unjustly discriminatory or deceptive, including outlining actions that are retaliatory in nature, efforts that would limit a producer's legal rights, or representations that would be fraudulent or misleading.
- Establish new protections for producers required to provide expensive capital upgrades to their growing facilities,
- Prohibit packers from purchasing, acquiring or receiving livestock from other packers, and communicate prices to competitors;
- Enable a fair and equitable process for producers that choose to use arbitration to remedy a dispute.
- Improve market transparency by making sample contracts be made available on the Grain Inspection, Packers and Stockyards Administration (GIPSA) website for producers;
- Outline protections so that producers can remedy a breach of contract;
- Improve competition in markets by limiting exclusive arrangements between packers and dealers.

The proposed rule was published in the June 22, 2010, Federal Register. GIPSA will consider comments received by August 23, 2010. Comments may be sent via email to comments.gipsa@usda.gov or sent by mail to Tess Butler, GIPSA, USDA, 1400 Independence Avenue, SW, Room 1643-S, Washington, D.C. 20250-3604. Copies of the proposed rule and additional information can be found at: http://www.gipsa.usda.gov by clicking on Federal Register.

# Growing Small Grains in Oregon Classes

By: Shelley Elkovich, Program Assistant, Southern Oregon

Amber waves of grain are rippling across a handful of small farms in Southern Oregon in what could be a resurgence in regional production. Last January, a group of bakers, brewers, chefs, millers and farmers met at OSU Extension in Central Point to collaborate on ways to meet consumer demand for locally-produced grain products.

Since Southwestern Oregon no longer produces much locally consumed grain, almost a generation of knowledge and infrastructure has been lost. Most farms in the region are smallholdings, and part of looking toward a future that includes grain in the local economy involves looking back at cultivation methods of the past, when equipment and practices were scaled for smaller farms. In order to teach producers about grains, Small Farms staff Maud Powell and Shelley Elkovich planned a series of seven classes entitled, "Growing Grains on a Small Farm." The series, funded by a USDA Sustainable Agriculture Research and Education (SARE) grant, covers all aspects of grain production throughout the growing season.

Each class takes place on a farm in Southern Oregon and includes a tour of the grain operation, as well as presentations by producers and university specialists. The first class focused on networking between producers and end-users, and also addressed the economics of small grain production, including material on enterprise budgets developed by OSU agricultural economic specialist Willie Riggs. Participants identified potential pitfalls to a local grain market; the biggest obstacles seem to be scale of operations in Southern Oregon and the prices that small producers need to charge for grain. Bakers and farmers brainstormed ideas for developing mutually beneficial relationships, such as including more expensive local grains in recipes blending several flour sources.

The second class covered field preparation, varietal selection, and integrating grains into a whole farm system. Farm tours included the restaurant/farm Summer Jo's, and Pacific Botanicals, both located in Grants Pass. Mark Wheeler of Pacific Botanicals illustrated how he incorporates grain into a double-cropping scheme, and also into a long-term location. Washington Sate University wheat specialist Stephen Jones combined the best of old knowledge and new advances, discussing varietal selection for disease resistance and for protein levels. Jones urged producers to use old resources, such as the USDA Bulletin Number 1074, *Classification of American Wheat.* This bulletin, now available online, lists the forty one varietals that were in production on about one million acres in Oregon at that time. Producers took home organic Glenn hard spring wheat seed to experiment with a small planting.

In April the course included planting spring grains and integrating animals to boost soil fertility and protein levels in wheat. Farm tours in Williams included L&R Family Farm and Seven Seeds Farm. Don Tipping of Seven Seeds explained how he uses rotational grazing of poultry and sheep to clean his fields of spent grain and to boost nutrients with animal manure.

The fourth class held in June focused in on how the wet, cold spring has delayed grain harvest, but participants observed a refurbished All-Crop combine in action at Dunbar Farms. David Mostue from Dunbar addressed economies of scale and details of his wheat trialing project. Bob Niedermeyer from Niedermeyer Farms talked about considerations for harvest and storage.

In August the focus will be on alternative poultry rations, as well as homesteading grain production. Producers will tour the homesteading operation at Mellonia Farm in Applegate, as well as the poultry feed experiments at Barking Moon Farm, also in Applegate. Josh Cohen at Barking Moon is performing informal wheat trials of five varietals, and the class will inspect those plots.

The sixth class will highlight equipment used in small-scale grain production and explore producers' equipment-sharing cooperatives. OSU Cereals Specialist Mike Flowers will give an overview of necessary equipment, and the class will travel to Dunbar Farm in Medford to observe a threshing machine in the field.

In October, the final class in the series will tour the organic cover crop seed partnership between Seven Seeds Farm and Frye Family Farm. Pat Hayes, OSU barley specialist will present material on barley as food for humans and livestock, as well as the malted barley market in beer production.

This series has been very popular; Small Farms raised the fifteen participant maximum to thirty to accommodate producer requests. Small Farms agent Maud Powell and her assistant Shelley Elkovich plan to write more grants encouraging grain production, such as a DVD project which will incorporate information on small-scale grain production with case studies of different farms producing grains in Oregon, and an initiative to develop appropriately scaled equipment that would be produced in the U.S. They also plan to collaborate with Washington State University on a multi-state wheat trialing project.

**Resources:**

*USDA Bulletin #1074 General Grain Production* http://agsyst.wsu.edu/grain.html

*Oregon Wheat Trialing Data* http://cropandsoil.oregonstate.edu/wheat/state_performance_data.htm

*Small-Scale Grain Raising, Second Edition: An Organic Guide to Growing, Processing, and Using Nutritious Whole Grains for Home Gardeners and Local Farmers* by Gene Logsdon

*Homesteading Wheat Blog* http://backyardbreadpatch.wordpress.com/

**The OSU Department of Horticulture, the USDA ARS National Clonal Germplasm Repository, and the USDA ARS Horticultural Crops Research Laboratory invite you to attend an**

# OPEN HOUSE

Research Show-and-Tell

## Come see Horticulture!

JULY 17, 2010, 10:00 AM - 1:30 PM

LEWIS BROWN HORTICULTURAL FARM

33447 Peoria Road, Corvallis, Oregon

- Partial list of topics:
- Blueberry Genebank
- Blueberry Irrigation Trials
- High Tunnel Cherry Production Trials
- Vegetable Breeding Plots (featuring the purple tomato)
- Honeybee Health
- Spotted Wing Drosophila

*Bus transportation provided from the daVinci Days festival in downtown Corvallis to the Lewis Brown Horticultural Farm. Ride the bus or walk between each of the research displays on the farm.*

# Drying-Off Lactating Livestock

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

For optimal animal health and best performance in the next lactation, lactating animals should have an opportunity to rest and regenerate mammary tissue between lactations. High producers also need a dry (non-lactating) period to recoup body condition in preparation for the next birthing and lactation.

This article will describe drying-off best practices that are scientifically based. Experienced livestock producers often successfully use methods that depart greatly from the practices described here. Regardless, best practices are best practices for a reason and the consequences of improper dry off procedures can be serious and even fatal.

**Natural Weaning**

Beef cattle, meat goats, sheep and horses generally wean their offspring naturally by about six months. At that time, the youngster has a mature digestive tract with all its proper microbes, is consuming the diet of a mature animal and is gaining weight well. The little nursing the animal does at that point is accompanied by teeth, so the dam is highly motivated to discourage nursing and wean the offspring. If necessary, young animals consuming a growing ration and gaining well can be separated from their mothers and weaned abruptly as described below. Weaning at about six months generally enables dams to regain the body condition needed to support the subsequent pregnancy and lactation.

**Drying Off Dairy Animals**

Due to the amount of milk they produce, the drying-off process is often more complicated for dairy animals (cattle, goats and some sheep). Preparation for dry off should begin at least two weeks prior to the dry-off date with a significant change in the animal's diet. Slowly reducing the energy content of the diet and feeding primarily a high-fiber diet will reduce the nutrients available for the animal to make milk; this is often all that is needed to reduce milk production to a level that makes dry off safe and simple. Eliminating grain and switching from alfalfa to grass hay is often effective. However, it may be difficult to cease production in high-producing animals, and these individuals may need to be fed a very low calorie diet such as straw and water. This diet should not need to be fed longer than two weeks, after which animals can gradually be changed over to a traditional balanced maintenance or gestation diet.

**Do Not Limit Feed or Water**

Some dry-off protocols recommend limiting the feed of animals being dried off. Experienced livestock managers know that hungry animals often manifest undesirable behaviors such as chewing things they should not, going through fences in search of food, eating toxic plants and fighting over food. Full feedings of high fiber, low energy diets will keep animals physically full while reducing their nutrient intake. This approach will work on dairy animals and those nursing offspring to be weaned.

Although it is a frequent recommendation in some dry-off protocols, water should never be withheld during the dry-off process. Water is the most critical nutrient and providing a constant source of clean water is a basic aspect of animal welfare and husbandry. Reduce the amount of milk produced by decreasing the nutritional content of the diet as described above.

**Abrupt Dry Off Is Best**

After animals have been on a high fiber, low energy diet for about two weeks, their udder should be assessed for level of continued milk production and

mammary health. If all seems well, abrupt dry off should be implemented. This means the animal is milked (by a human or its offspring) a final time, then not again until the next birth and lactation. Some livestock managers will milk once a day for a while, then every-other-day, then stop milking altogether, but this interferes with the major factor responsible for the cessation of milk production: back pressure. Whenever milk accumulates in the udder, it exerts pressure on the milk-producing cells in the mammary tissue, causing them to reduce milk production (this is why animals milked every 8 hours produce more milk than those milked every 12 hours—there is less back pressure on milk-producing cells). If the pressure persists, the cells will eventually cease milk production altogether, which is exactly the goal of the drying-off process. Dry off is generally non-problematic when cows are producing less than 20#/day and goats are producing less than 3#/day.

**Mastitis Treatment and Monitoring**

In dairy cattle and any animal with a history of mastitis, it is a best practice to milk the animal completely out, carefully sanitize the teat end with alcohol, aseptically infuse all teats with a commercial dry cow antibiotic treatment and apply a commercial teat dip. The antibiotic treatment is left in the udder for residual treatment during the dry period, helping to clear up any lingering mastitis and helping to prevent new cases from getting established. Follow all label instructions regarding meat and milk withholding after treatment. Dry treatment is only labeled for use in cattle, so use in other species must follow the recommendations of a licensed veterinarian and abide by all other aspects of the FDA's extra-label drug use guidelines (refer to "Small Ruminant Medications: How to Stay within the Law" in Oregon Small Farm News, vol. II No. 3, Fall 2007, pp. 7-9).

Animals in the process of being dried off must be monitored closely for mastitis. Signs of mastitis can include heat, pain, redness and swelling of the affected gland; abnormal milk (clumps, blood, watery discharge, abnormal smell and/or gas); illness (fever, poor appetite, depression); and cold, bluish skin in the case of gangrenous mastitis. Contact your veterinarian if you suspect an animal has mastitis. A clean environment with excellent mud and manure management will help lower the incidence of mastitis contracted during the dry period.

**Length of Dry Period**

Animals should be dry for 45 to 60 days. This is sufficient time to rest and regenerate mammary tissue. If animals have prolonged dry periods, they run the risk of becoming obese, experiencing obesity-related diseases and having difficulty birthing.

**Conclusions**

It is no surprise that proper management and planning are required for a safe and effective drying-off process. Transitioning animals to high fiber/low calorie diets, keeping a clean environment, drying off animals abruptly, using intramammary antibiotics and monitoring for mastitis are the best management practices associated with successful dry off. A well planned and disease-free dry period will lay the foundation for an even more productive lactation next time.

**For More Information**

http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2035/ANSI-4260web.pdf
http://attra.ncat.org/attra-pub/PDF/dairygoats.pdf

# Toxic Heavy Metals in Farm Soils

By: Sam Angima

In 2008, Dr. Dan Sullivan and I published an OSU publication about heavy metals in garden and landscape soils due to many questions of concern about this topic. Here I will summarize the main points in this publication as it relates to farming. A heavy metal can be defined as a chemical element with a specific gravity that is at least five times that of water (considered one (1) at 39 $^{o}$F for water). Specific gravity is a measure of density of a given amount of a solid substance when it is compared to an equal amount of water. Examples of heavy metals that fall into this category include arsenic, cadmium, iron, lead, chromium, copper, zinc, nickel, and mercury.

| Element | Earth's crust | Basalt | Granite | Sandstone | Shale | Limestone | Soil range |
|---|---|---|---|---|---|---|---|
| Antimony | 0.2 | 0.2 | 0.2 | n/a | 1 | – | 0.2–10.0 |
| Arsenic | 1.5–1.8 | 1.5–2.0 | 1.5–2.0 | 1–2 | 15 | 1.7–2.5 | 0.1–40.0 |
| Bismuth | 0.05–0.17 | 0.03–0.15 | 0.07–0.01 | n/a | 0.18 | – | 0.1–0.4 |
| Cadmium | 0.11–0.20 | 0.13–0.20 | 0.09–0.20 | n/a | 0.2 | 0.1 | 0.01–2.00 |
| Cobalt | 25 | 50 | 1–5 | 0.3 | 20 | 4 | 1–40 |
| Chromium | 100 | 200–220 | 4–20 | 35 | 100–120 | 10 | 5–1000 |
| Copper | 55 | 90–100 | 10–15 | 2 | 50 | 4–5 | 2–100 |
| Indium | 0.049 | 0.56 | 0.04 | n/a | | | 0.2–0.5 |
| Lead | 12.5–14.0 | 3–6 | 18–24 | 7–12 | 20 | 8–9 | 2–300 |
| Manganese | 950 | 2200 | 500 | n/a | 850 | 1100 | 850 |
| Mercury | 0.05–0.08 | 0.01–0.05 | 0.085 | 0.03–0.05 | 0.09–0.50 | 0.05 | 0.01–0.50 |
| Molybdenum | 1.5 | 1.0–1.5 | 1.4–2.0 | 0.2 | 3 | 1 | 2 |
| Nickel | 75 | 140–150 | 0.5–8.0 | 2 | 50–70 | 12–20 | 5–500 |
| Selenium | 0.05 | 0.05 | 0.05 | 0.05 | 0.6 | 0.08 | 0.01–1.20 |
| Thallium | 0.45–0.60 | 0.08–0.10 | 0.75–1.10 | 0.82 | 0.3 | – | 0.1–0.8 |
| Zinc | 70 | 100–110 | 40 | 16 | 100 | 20–25 | 20 |

Source: Plant and Raiswell (1983)

Table 1. Average abundance (mg/kg = ppm) of total heavy metals in the earth's crust, common minerals, and in typical soils. *(Source; Plant and Raiswell. 1993).*

Not all heavy metals are toxic to humans. In small quantities, metals such as iron, copper, manganese, and zinc are essential for good health. Heavy metals such as lead are also good industrial ingredients e.g. used in car batteries. However, these heavy metals become toxic when they do not get metabolized by the body and end up accumulating in the soft tissues. Ingestion is the most common route of exposure to heavy metals. In plants, uptake of heavy metals depends on the plant species and bio-availability of the metal in the soils. Since most of the ingestion of heavy metals occurs from consumption of plants, then addressing how plants acquire heavy metals can aid in controlling heavy metal toxicity.

If you happen to ingest heavy metals, that alone is not enough to cause toxicity. In laboratory animals, absorption of toxic metals may occur as a result of chronic deficiencies of calcium and magnesium in the body and in other cases, excess levels of aluminum mobilizes calcium and heavy metals to move from bones to the central neural tissue. Of the many heavy metals of concern, lead and arsenic have been found to be higher than federally set levels in most soils studied (note that all heavy metals exist naturally in the soils largely in complex forms with other minerals – see Table 1, showing average abundance of total heavy metals in the earth's crust and in typical soils).

Arsenic is the most common cause of acute heavy metal poisoning in adults (but the source is not from soils). Arsenic is released into the environment by the smelting process of copper, zinc, and lead and from manufacture of chemicals and glass. Lead on the other hand is the leading cause of heavy metals poisoning with major source coming from soils. Excess levels of lead in soils greater than 400 ppm result from prior use of lead paint around houses, lead-arsenate sprays for pest control during 1910-1950s, use of leaded gasoline (up to 1996 in Oregon), locations close to former smelters & tailings from metal ore mines, and proximity to fossil fuel-fired electrical plants. Therefore the culprit to look for when looking at heavy metals in soils is lead toxicity.

A local study on lead contaminated soils was carried out in Multnomah County in 2001 around homes built before 1930. They found that in bare soil play areas lead concentrations were often above the EPA limit of 400 ppm. The main reason why lead is found in close proximity to the loading point is because lead is held tightly on surfaces of very fine clay and organic matter particles and therefore accumulates in the top 1-2 inches of soil unless disturbed by excavation

and tillage. Therefore if you think you might have lead contamination in your farm or home, the best procedure to follow is to collect soil samples and have them analyzed for lead content. OSU publications EM 8677 and EC 628 provide laboratories that can do heavy metal soil testing and how to sample soil for home gardens and small acreages for soil testing, respectively. If you are testing for farming purposes, always take soil samples to tillable depth depending on how deep your current equipment disturbs the soil.

Once you receive you soil test back, use Table 2 to interpret what you need to do for your specific soil in question. Soil tests showing less than 50 ppm lead, generally show no lead contamination while those showing greater than 1,200 ppm lead, are not recommend for any gardening practices, rather they should be mulched heavily and planted to perennial plants that do not need harvesting of food for human consumption. Other abatements in soils testing high in lead are to use container or raised bed gardening with clean soils and installing a barrier (e.g. geotextile fiber) between good soils and contaminated soil below.

| Soil lead test (ppm) | Recommendations |
|---|---|
| Less than 50 | Little or no lead contamination in soil. No special precautions needed. |
| 50 to 400 | Some lead present from human activities. Grow any vegetable crops. Choose gardening practices that limit dust or soil consumption by children. |
| 400 to 1,200 | Do not grow leafy vegetables or root crops. (These crops carry the highest risk of lead contamination.) Choose gardening practices that limit dust or soil consumption by children. |
| Greater than 1,200 | Not recommended for vegetable gardening. Mulch and plant perennial shrubs, groundcover, or grass. Use clean soil in raised beds or containers for vegetable gardening. |

Table 2. Recommended farming practices based on results of soil test for lead. *Source OSU publication EC 1616-E)*

It is important to note that plants do not absorb or accumulate substantial amounts of lead. Lead does not readily accumulate in the fruiting part of vegetables and fruit crops (e.g. corn, beans, squash, tomatoes, strawberries, and apples). Since lead is tightly bound to clay particles, higher concentrations of lead will therefore be on surfaces of leafy vegetables from lead laden dust (e.g. brassicas), and on surfaces of root crops (e.g. carrots and potatoes) if soils are contaminated. Actually, there is more concern about lead contamination from external lead on unwashed produce than from actual uptake by plants. This raises the need for everyone to always wash their produce before eating/cooking and places a big responsibility on growers to always wash their leafy vegetables before marketing them since lead laden dust can blow from distant places. Remember that soil contaminated with lead looks and smells like normal soil. Lead does not biodegrade since it has a half-life of about 53,000 years.

If your soil tests for lead higher than 50 ppm, you might need to use some soil amendments to reduce lead toxicity. These include:

1. Maintaining a neutral soil pH above 6.5. Lead uptake by plants is reduced when pH is above 6.5.

2. Add phosphorus when soil tests indicate a need. Phosphorus reacts with lead to form insoluble compounds, therefore reducing toxicity.

3. Add organic matter, (OM) which in turn binds lead and makes it less soluble in soil water. When adding OM, soil pH soil should be maintained above 6.5 to reduce uptake by plants.

4. What about lead in water? If you still have leaded water pipes, you should test your water for lead content. It is recommended to replace these pipes or keep water off edible plants.

What about lead in fertilizers? Most fertilizer and soil amendment products do not significantly increase health risks. Fertilizer manufacturers are required to test products for lead, and tell Oregon Department of Agriculture or Washington Department of Agriculture. Check online for Oregon http://oregon.gov/ODA/PEST/fertilizer.shtml and online for Washington, http://agr.wa.gov/PestFert/Fertilizers/Metals.htm. Compost makers and distributors are not considered fertilizers and therefore are not required to provide lead analysis data to regulatory agencies. However, many composters determine lead levels in their products and will supply the analytical information to consumers upon request.

Check out the Winter 2010 issue of the Small Farm Newsletter for arsenic related toxicity from treated lumber.

# League of Women Welders

By: Barbara Hughey, Member

Saturday March 27th, in the Siskiyou Mountains, we experienced a glorious, sparkling, spring day at Silver Bough Farm. Fifteen women, including four mother daughter teams, had gathered to try their hand at welding steel.

The class was offered by the League of Women Farmers, an educational and social farmer-to-farmer network organized by Melissa Matthewson and Maud Powell of OSU Extension's Small Farms program in Jackson and Josephine Counties. The network exposes women farmers to many new and innovative classes, and farm tours on a monthly basis.

Our welding instructor Beth Dolos, of Ashland, Oregon, who is a veteran teacher, and a talented welder, came to spend the entire day, giving instruction and encouragement to our group. Everyone in attendance was curious and motivated to learn, but admittedly somewhat cowed by the welder's torch. There were a few of us who had had some exposure to welding. Some of us had the necessary equipment on their farms, and there were others who were considering buying equipment. Some of us had partners, fathers, or husbands with experience welding, and others did not. Despite these differences we had all gathered for this chance at getting a taste of this first hand experience, and an introduction to some of the challenges and opportunities associated with the art of welding.

Welding is a tool that can make a big difference in the farm's operational efficiency. The work at Silver Bough Farm is focused on organic seed production. We use tractor-mounted equipment for soil preparation, and harvesting. A lot of our efforts are also accomplished with hand tools. Seed cleaning and handling requires specialized screens and tables for proper processing. All these things are expensive, and at times, difficult to find. So much of the available equipment is intended for farming operations that are larger than ours, and that presents a problem with economies of scale. Welding can be essential to solving these problems.

Most of the old timers with farms near us have long had welding in their problem-solving arsenals. Being able to fix a broken farm implement, or to fashion one that was needed for a particular task, meant the difference between staying on schedule, and falling behind. Rejuvenated old spare parts also made many projects affordable.

The participants in our welding class spent a part of our time together thinking and sharing ideas about how welding could benefit their farm's productivity. One example involved the simple step of creating racks for adding needed weight to cultivators and plows. Another suggestion was to ergonomically modify hand tools to better suit a woman's strengths. The list went on, and after examining the possibilities that welding made available to us, the ideas would continue to percolate long after our one day together. It was all very exciting.

Despite our initial apprehensions, everyone took a turn melting and binding pieces of scrap metal together, and learning to look through the light sensitive hoods that one must wear when welding. The hoods protect us

from the UV rays from the torch that can cause serious eye damage. Rule number one, is never, ever, look directly at the welding torch without the appropriate eye protection. It is hard not to, especially when you're learning, but this is a crucial part of being around welding of any kind.

The MIG, (aka GMAW, or Gas Metal Arc Welding), wire feed torch we used that day sparked as it drew a seam of molten steel between the metal's edges. It was quite a sight to see. Small groups gathered around each demonstration, watching as closely as possible. They looked like Darth Vader's daughters, standing there wearing their welding hoods.

Our teacher Beth decided to concentrate on the MIG welder for our class because it is a very versatile form of welding, and easier to learn than the many other types available. The MIG welder runs on standard 110-volt electricity. The machine itself is quite portable. There is a wire feed that can be changed for different thicknesses, as needed. MIG welding is not used for cutting metal like the much better known, oxy-acetylene torch welder. It is also not as well suited to extra heavy duty welding that would be called for when fabrication or repair have to be done to large equipment parts. That would often employ what is called Stick Welding. However, the MIG worked very well for what we were doing, and since the electricity needed was right at hand, it was an excellent choice, that made for a very rewarding process.

Learning to weld had its obvious practical applications, but during the course of the day, there were a few deep sighs, and comments made about, "shouldn't we be home working?" Often it is hard for us to get off the farm and try something like this, especially on a sunny spring day. Perhaps because our time was so dear, we all concentrated on what we were doing and stayed the course, to learn as much as possible, and to in the end, actually manage to finish a project that day.

Our goal was to build a farm gate. As the hosts, Silver Bough would get to keep the gate that would connect our residential area with our production field. Our instructor explained to the group that a good gate should be hung on a sturdy frame. Steel gates are so heavy that they can unseat standard wooden fence posts. We were all duly impressed when our instructor unloaded the twelve foot long, two inch, square steel tubes from her truck, and began to talk us through what we were about to do.

She cut small pieces to cap the tubes, so that wasps, and hornets wouldn't move in. Then we began putting the mitered corners together for the frame that would later be set in concrete. Each surface was made clean, scoured with a grinding wheel, to insure a strong weld. We made hinges from capped round tubes that fit perfectly together. Lastly, galvanized, wide mesh screen was affixed to the gate frame. We were done.

It was five o'clock and everyone was tired, but happily so, because we had tried something new, and were successful at it. We were nascent welders now. All kinds of new possibilities were conjured up.

We had briefly set our regular work aside so that we could learn to weld, and now all we needed to do was to plow it into our larger talent, for putting things into practice. Soon we would all be so busy that the weeks would fly by. This may be all the more true seeing as we have the beginning of a new skill, and that will no doubt spark our imaginations, creating even more things to do.

## Submit your photos online

Go to the following Web site to complete the registration form and upload your digital images.

http://files.oda.state.or.us

Please be sure to include the following in the description field:

- Species
- Breed
- Male or female

Digital images on disk may be sent to Dr. Bruce Mueller.

Oregon Department of Agriculture

# Poultry Health Calendar

# PHOTO CONTEST

*Do you raise poultry? Do you have especially beautiful or unique birds in a photogenic setting?*

The Oregon Department of Agriculture wants a photo of your bird for our 2011 Poultry Health Calendar.

## Entry deadline: August 31, 2010

Winning photos will be selected based on photo composition and the attractive, well-groomed appearance of poultry. Selected photos will also represent a diversity of

- domestic poultry species (chickens, turkeys, guineas, ducks, geese, etc.)
- poultry breeds (Araucana, bantam, Polish, etc.)

Each page of the calendar will feature a winning photo image along with photographer credits.

Printed photos will not be accepted for this contest. Please submit digital images of high resolution only (4 megapixels or greater). Low resolution photographs will not be usable for publication.

All entries must be original digital photographs owned by the contributor. Digital images may be submitted online or mailed (on disk) to Dr. Bruce Mueller at the address below.

## Questions?

Dr. Bruce Mueller

Oregon Department of Agriculture

635 Capitol St. NE

Salem, OR 97301-2532

503-986-4685

bmueller@oda.state.or.us

All submitted images become the property of the Oregon Department of Agriculture and may be used in department publications; Web pages; and other not-for-profit publications, as approved by the department, without securing the photographer's express permission.

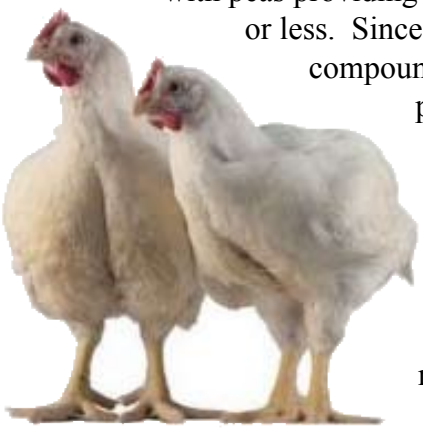
# Soy Free Diets For Poultry

**By:James Hermes, OSU Extension Poultry Specialist**

In recent years, there has been interest by small scale poultry producers to not feed soybean meal to their chickens. The reasoning behind this trend varies but most producers have health concerns regarding soy for both their birds and humans eating poultry products, meat and eggs, from birds fed soy. In addition, there is concern that most soy produced in the US is a "genetically modified organism" (GMO); most soy has been genetically manipulated so that it is resistant to Roundup, a widely used herbicide. And finally, many are concerned that soy is not locally grown, most is grown in the Midwest and transported to the Pacific Northwest by rail car. This is of particular concern for those who consider themselves "localvores", individual that prefer to only consume products produced close to home.

Why is soybean meal a major ingredient in poultry feed (about 30%)? For decades, soy has been known to be an excellent feed ingredient for poultry and other livestock; this is why it will be produced at levels expected to exceed 3.5 billion bushels in 2010. It is a high protein feedstuff (>45% crude protein) and it contains high levels of linoleic acid, an essential nutrient that is required in animal diets. Since it is so useful and available, the poultry industry has little interest in finding alternatives. Therefore there has not been a lot of work on other ingredients that may be adequate substitutes for soy. The question then arises, what is an adequate substitute.

First, an adequate substitute must have an adequate supply, have the proper nutrient levels and be affordable. So, what is available in the Pacific Northwest that is an adequate soy substitute?



**Animal Products**

In the past, animal products such as, fish meal, meat meal, meat and bone meal, blood meal, and poultry by-product meal have been used successfully in poultry diets. They are all high in protein and other nutrients; however, the supply has been reduced in recent years because feed mills that make feed for ruminant animals, cattle and sheep, can no longer use these products due to the potential of "Mad-Cow disease. Poultry are unaffected by this problem. Other issues with animal products include food safety and the potential of receiving contaminated product. And finally, organic production doesn't allow the use of animal products in diets.

**Cereal Grains**

Cereal grains are typically low in protein, between 7% and 12%, and generally high in fiber. The energy level (starch) varies from very low (oats) to quite high (corn). Some cereal grains such as wheat and barley contain compounds that are not well digested by poultry and may need supplemental enzymes added to the feed to aid digestion if fed in levels above 10 or 20% in the diet.

**Legume grains**

This group includes the dry beans, peas, and lentils. Since soy is a legume these would appear to be an obvious choice. However, compounds including, tannins, oligosaccharides, and enzyme inhibitors that are found at high levels in most of these grains severely affect growth in poultry, especially in beans, with peas providing adequate growth at 30% in the diet or less. Since soy is processed with heat, these compounds are virtually eliminated as a problem. So with some processing, beans and peas may become a useable ingredient, more work is needed.

**Other**

Canola and Camilina, are relatively new as a poultry feed ingredient but show some

promise, however they are not without problems too. They are related to mustard and cabbage and as such they include compounds that can cause problems when fed to poultry. Canola, when fed at amount higher that about 10% in the diet, cause eggs produced by many brown egg layers to smell and taste fishy, and Camilina has a similar property and is only approved to be fed to broiler chickens as a level of less that 10%.

**Conclusion**

Poultry feeding is heavily dependent on soy as an ingredient. It will take some time to identify adequate substitutes that are locally produced and will support poultry growth and egg production. Unlike ruminants, which can thrive on forages, poultry require a balanced diet. Therefore, poultry diets must contain proper ingredients at the proper levels for productive chickens.

**Lake Oswego Parks & Recreation announces opportunity for:**
**Contracted Resident Caretaker Position**
**Luscher Farm**
**125 Rosemont Ave.**
**West Linn, OR 97068**

Located just outside the southeast edge of Lake Oswego city limits at the corner of Stafford and Rosemont Roads, Luscher Farm hosts community gardening, classes and activities offered through Lake Oswego Parks & Recreation. Several Farm Partners also utilize the property for farming, gardening, education and interpretive opportunities.

The caretaker position is under contract with the City of Lake Oswego, Parks & Recreation, Cultural Division. Candidates with agricultural, housekeeping and/or landscape maintenance knowledge, skills and experience are encouraged to apply.

**Caretaker Position Information**

*Number of caretakers:*
1 or 2 individuals – couples welcome. Three person maximum, two adults with one child, or one adult with two children allowed. A limited number of domestic pets are allowed.

*Work/ Experience Desired:*
Seeking competent individual(s) who will work hard and display enthusiasm in performance of all housekeeping and landscaping maintenance tasks assigned.

*Housing:*
Caretaker housing is a **private residence,** 2 bedroom/ 1 bath apartment above a classroom/office area and use of a single car garage, and a 20 x 20 foot storage area.

*Compensation:*
Residence occupancy in exchange for housekeeping and landscape maintenance services.

*Details:*
Duties include interaction with the public, answering questions, providing general information, housekeeping for the farmhouse, set- up and clean-up for programs and meetings. Outdoor maintenance for grounds surrounding caretaker residence, farmhouse and outbuildings. Must be able to operate heavy equipment such as tractor, weed cutting machinery, trimmers and mowers. Daily pet care responsibilities required for two farm cats. Lifting is required and other duties as assigned. Candidates will be required to submit a consent for criminal background check.

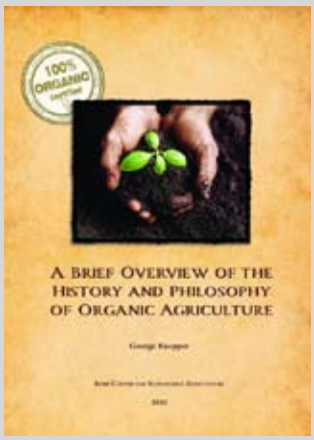
For more information about Luscher Farm:
http://www.ci.oswego.or.us/parksrec/Luscher/default.htm

**Interested parties please send letter of interest and resume by July 9, 2010 to:**

Jan Wirtz, Cultural Division
Lake Oswego Parks & Recreation
P.O. Box 369
Lake Oswego, OR 97034
jwirtz@ci.oswego.or.us

City of Lake Oswego Oregon

# Report Looks at Past and Future of Organic Farming




Organic food sales are booming, even through the recent recession. But the meaning and origin of the USDA-certified organic label remain a mystery to many Americans. A new, free online publication, "A Brief Overview of the History and Philosophy of Organic Agriculture," can help fill that knowledge gap. The report offers valuable background for anyone seeking to understand the past - or potential future - of organic food, farming, and regulation.

To better understand today's organic phenomenon, it helps to know the origins of organic agriculture and its evolution to the present. Early organic farmers attempted "to reverse the perennial problems of agriculture - erosion, soil depletion, decline of crop varieties, low quality food and livestock feed, and rural poverty." These organic pioneers believed that a nation's health depends on the long-term vitality of its soil, he says.

The report traces some of the practices associated with today's organic farming back for thousands of years. Some have appeared under different names, like "convertible husbandry" and "humus farming," with the term "organic" only coming into use around 1940.

The report addresses common questions about the relationships between organic food and farming, health, pests, and genetic engineering. It reviews the scientific research that gradually built organic farming's credibility with academia and government, aiding the development of today's federal organic standards.

The report is available free at: http://www.kerrcenter.com/publications/organic-philosophy-report.pdf Printed copies are available free by calling the center at 918-647-9123.

# Irrigate Wisely to Protect Groundwater

By: Chrissy Lucas

Protecting groundwater should be a concern for every Oregon resident. Most rural residents rely on groundwater for drinking, watering livestock, and irrigation of gardens and/or agricultural crops. Thereby, it is important to follow some best management practices to reduce to non-point source pollution. Non-point source pollution is contamination that cannot be attributed to one large source but many small sources that individually seem insignificant but cumulatively can result in large impacts on the environment

Nitrate is a common non-point source pollutant that is being found in more and more groundwater supplies throughout Oregon. Nitrate is a form of nitrogen that moves easily through the soils with water. You might wonder where the nitrate comes from; fertilizers, pesticides, and animal waste are some of the most common sources. Northern Malheur County, Lower Columbia Basin, and the Southern Willamette Valley all have established Groundwater Management Areas to address high levels of nitrate contamination found in rural drinking water supplies. Nitrate levels above the EPA limit of 10ppm or mg/L for public drinking water supplies is considered a health risk. Levels below 10ppm are considered safe for people of all ages to consume, however if the level is approaching 10ppm pregnant or nursing women and infants are not encouraged to drink the water. No matter what area in Oregon you reside following a few simple irrigation management practices will help protect groundwater.

**Schedule irrigations using available soil moisture and crop water use requirements.**

Don't over irrigate! This sounds relatively simple but most folks would rather err on the side of over watering than under watering. Over watering can cause stress to the crop and also nitrogen deficiency from leaching. Take the time evaluate and graph soil moisture. Soil moisture sensors are readily available or you can even use a shovel and your fingers. In addition, the Agri-Met system (http://www.usbr.gov/pn/agrimet/), and online tool, provides daily charts showing the ET (evapotranspiration) rates, and is a fairly accurate estimate of crop water use. Combine the tools together to help you plan a tailored irrigation schedule.

*Source: Barbara Hardy Centre http://www.unisa.edu.au/barbarahardy/ Photographer: John Hodgson.*

**Time irrigation to keep water in the rooting zone.**

Know your soil! Irrigation shouldn't be used to fill the soil to field capacity. By knowing your individual soil's available water holding capacity you can vary the length of time you irrigate. Using a more frequent but lighter irrigation schedule helps keep water in the root zone where plants can use it, and reduces the amount of nitrate that can leach. Don't forget to account for the weather and time of year. For example, manage your irrigation applications to keep any stored water to a minimum in the fall.

**Adjust application rates to meet crop requirements during different growth stages**.

Know your crop! Each crop consumes various amounts of water from planting to harvest. Certain stages of growth may require more or less water, understanding the growth stages of your crop is crucial to providing the right amount of water. Most crops can tolerate a reduced level of available water capacity that won't affect the crop quality or yield. The typical range is between 40-60% so keeping an irrigation schedule that fulfills the crops water need and doesn't allow the soil to dry below that level is imperative.

**Keep applications uniform and accurate.**

Make sure that whichever irrigation systems that are used have a consistent and even flow being applied across the entire area being irrigated. Without this consistency you may be over watering and leaching nutrients in one area of the field while another is being under watered – affecting total crop yields.

**Follow label directions when using fertilizers.** Label directions should always be followed, as well as working with guidelines from a current soil test. It can be a balancing game of applying the right amount for the crop at the right time. Excessive application creates a higher level of probability of leaching contaminates into the groundwater, and in addition wastes the money invested in the product. While under application can show little or no effect on the overall crop quality and yield.

Taking time to incorporate a few irrigation basic management practices into your system can help protect Oregon's groundwater, the health of your family, conserve water, save money, all while producing a high quality crop.

**Resources:**

*Small Farms News - Spring 2010 Edition.* Irrigation Management Basics and Resources. p 8-11

*Western Oregon Irrigation Guides* (EM 8713): A free preview is available at http://extension.oregonstate.edu/catalog/pdf/em/em8713.pdf. Cost is $5.50

*Irrigation Scheduling Using Water Use Tables* http://www.cals.uidaho.edu/edComm/pdf/CIS/CIS1039.pdf .

*Simple Irrigation Scheduling: Using the "Look and Feel" Method* (EM8716): http://extension.oregonstate.edu/catalog/pdf/em/em8716.pdf

*Strategies for Reducing Irrigation Water Use* (EM8783) http://extension.oregonstate.edu/catalog/html/em/em8783/

*Irrigation Management Practices to Protect Ground Water and Surface Water Quality in the State of Washington* cru.cahe.wsu.edu/CEPublications/em4885/em4885.pdf

*Soil Surveys on-line:* http://smallfarms.oregonstate.edu/soil-survey

# SAVE THE DATE

# February 26, 2011

## Oregon State University

## Extension Service

# Small Farms Conference

LaSells Stewart Center - Corvallis, Oregon

Oregon State University OSU Extension Service

# ODA Works With All Farms

*By: Katy Coba, Director, Oregon Department of Agriculture (ODA)*

When I talk about agriculture in Oregon, I use the analogy of a three-legged stool representing three broad segments of markets for growers. There are farms that focus on local marketing, others that service regional markets, and those that primarily export. Some do all three or combinations of these. There is room enough for all these marketing strategies, and in fact, we need all of them. All are end markets that make up the mosaic of different opportunities for our growers.

Some say small farms and marketing local are the future of farming in Oregon and across the nation, and that big agriculture is destroying the small family farm. Others may claim large-scale production and a global marketplace provide the real fuel that keeps ag's economic engine going and feeds the world. They say small, local producers don't really move the needle of overall agricultural activity.

The truth is both sides need each other. And generally, what is good for Oregon agriculture is good for both the small farmer of a dozen acres and the big guy who operates a spread of several thousand acres. The needs of both should be considered as decisions are made on resource allocation and marketing assistance programs. As diverse as Oregon agriculture is when it comes to the vast array of commodities being produced, the quilt of farm types in Oregon depicts an industry that comes from many directions, but ultimately has the same goal of attaining economic and environmental sustainability.

Our agriculture can be diverse, but should be largely unified. I am troubled when different sectors in this great industry shoot at each other and tear down the image of the other. That helps no one and only creates confusion among consumers and policy makers.

For its part, the Oregon Department of Agriculture continues to offer assistance to all shapes and sizes of farms throughout the state. We are always interested in helping growers access markets through many of our market development programs.

ODA is deeply involved in food safety, natural resource management, water quality issues, and activities of growers who use crop and animal protectant products. Resource stewardship and food safety are important for everyone – regardless of size, organizational makeup, or production methodology– and Oregon farmers, with few exceptions, are doing really good things all across the state.

ODA provides staff and resources to develop and strengthen marketplace locations for all growers, but many are specifically helpful to small producers:

- Farmers markets – ODA helped launch the Oregon Farmers Markets Association in 1987, hosting meetings, and serving on the OFMA Board since 2005. Farmers' markets are a key outlet for many smaller farms.

- Buy Local – ODA has worked with retailers on "buy local" programs and identification of locally grown goods for more than 25 years. Previous campaigns have been with the Agri-Business Council, commodity groups, and the Oregon Gourmet Foods Association. In fact, going back to 1987, ODA helped organize a Fresh Market Growers Association, plan their Farm Direct Conference, and launch the Pacific Northwest Farm Direct Marketing Association.

- food-hub.org – ODA has been a key sponsor and partner in the development and launch of FoodHub over the past three years. This broad new program helps all sizes of buyers and sellers identify each other, and can greatly benefit small farms that may lack resources to be visible to all potential buyers.

- Farm to School Program – ODA brought the first school purchasing 'advisory committee' together about four years ago. ODA worked with the Legislature to create a position at ODA to develop farm-to-school connections.

- ODA has operated the federal organic cost-share reimbursement program since 2002. Many organic operators are small, but there are all sizes. This program has added several hundred thousand dollars back into growers and processors hands. Further, ODA is now offering organic certification services.

- ODA assisted in development of the Farm Direct Nutrition Program in Oregon that enables growers to receive "WIC" coupons for direct farm sales. Now in its 13th year, ODA will distribute about $7 million of new vouchers throughout Oregon for redemption at farm stands, farmers' markets, and other direct sales, enhancing opportunities for small producers.

- ODA helped convene a 2009 conference on farm transition and new farmers, and recently convened a meeting about internships on small farms, bringing together regulatory agencies and growers to discuss concerns and opportunities. ODA has put farm internship information on its Web page.

- ODA has been a sponsor of OSU's Small Farms Conference since 2003, and involved in planning and information outreach in prior years.

- ODA initially convened interested parties to discuss small-scale meat processing more than nine years ago, funded feasibility studies, and has subsequently hosted many meetings to discuss the opportunities and challenges.

- ODA, in consultation with the Farmers' Market Association, updated food safety guidelines in 2007 that help clarify requirements for farmers' markets that have been in place for years. ODA continues to explore ways to implement size-appropriate regulations so that small farms don't get overburdened with licensing requirements, fees, and paperwork.

- ODA provided technical assistance and market access to Oregon Country Natural Beef as the cooperative began its operations in the early 1990s.

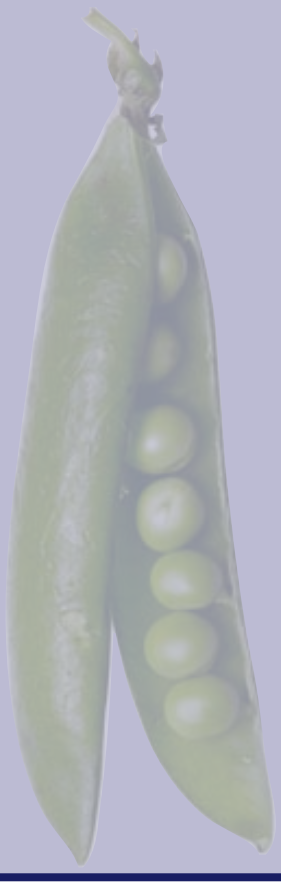
There are many other examples of ODA's efforts to assist small farms, ranging from development of industry clusters to grant assistance.

ODA's mission is to foster a sustainable Oregon economy through the state's agricultural production whether the products come from a small farm or a large one. All farms are important and we want them all to be successful stewards, businesses, and community citizens. Cooperation and collaboration between small and large farm interests could help the entire industry. Everyone wants to successfully produce, promote, and sell Oregon agriculture. Together as partners, we can achieve more.

## USDA REPORT LOCAL FOOD SYSTEMS: CONCEPTS, IMPACTS, AND ISSUES


This comprehensive overview of local food systems explores alternative definitions of local food, estimates market size and reach, describes the characteristics of local consumers and producers, and examines early indications of the economic and health impacts of local food systems. There is no consensus on a definition of "local" or "local food systems" in terms of the geographic distance between production and consumption. But defining "local" based on marketing arrangements, such as farmers selling directly to consumers at regional farmers' markets or to schools, is well recognized. Statistics suggest that local food markets account for a small, but growing, share of U.S. agricultural production. For smaller farms, direct marketing to consumers accounts for a higher percentage of their sales than for larger farms. Findings are mixed on the impact of local food systems on local economic development and better nutrition levels among consumers, and sparse literature is so far inconclusive about whether localization reduces energy use or greenhouse gas emissions. Economic Research Report No. ERR-97 is found at: http://www.ers.usda.gov/Publications/ERR97/

# Calendar



## July

**10 - Designing a Whole Farm System**
Series of 3 Field Days - Field Day 1 at Runnymede Farm: Topics include setting goals for a whole farm, social capital and community relationships and how the human aspect contributes to a whole farm system; growing annuals for profit and economic viability for diversified whole farms. 1831 West Evans Creek Rd, Rogue River, OR. 10:00 AM - 4:00 PM. For more information contact Paula Burkhalter at 541-776- 7371 or paula.burkhalter@ oregonstate.edu. ***$50 series or $20 per field day.***

**13 - Farmscaping for Predators, Parasitic Wasps, and Native Bees in PNW Berry Systems**
Bring Your Own Bug (BYOB) for indentification event. Learn about the research projects on the farm, state-of-the-art organic berry practices as well as take a detailed, hands-on, look into the identification, biology, and ecology, of native bees and beneficial insects and the on-farm habitat that supports them. On-farm berry poluck after the walk. Riverbend Farm, Jefferson, OR. 1:00 PM - 5:00 PM. For more information or to register contact Gwendolyn Ellen at 541-737-6272 or gwendolyn@ science.oregonstate.edu. ***Free.***

**27 - Mapping Beneficial Insects and Pollinators on Your Farm**
Bring Your Own Bug (BYOB) for indentification event. Potluck after the farm walk. Persephone Farm, Lebanon, OR. 1:00 PM - 5:00 PM. For more information or to register contact Gwendolyn Ellen at 541-737-6272 or gwendolyn@science.oregonstate.edu. ***Free.***

**31 - Horses and Wilderness, Smart Horse Certification Program**
Learn about trail riding and packing in wilderness areas, map, compass, and GPS use, access to back country, responsible use of wilderness areas, what to do if you get lost in wilderness areas, and much more! Jackson Soil & Water Conservation District, 573 Parsons Dr. Medford, OR. 8:30 AM - 5:00 PM. Pre-registration is required. For more information contact Julia Pedersen at 541-776-7371 or Julia.Pedersen@ oregonstate.edu. ***$6 for Smart Horse Program Enrollees $10 for non-enrolled***.

***Visit http://smallfarms.oregonstate for more upcoming 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