Spring 2012

Oregon Small Farm News

Oregon State University Small Farms Program

In This Issue:

Oregon State University OSU Extension Service

OSU Extension Service Small Farms Program

Garry Stephenson
Small Farms Program Coordinator
Corvallis, OR 97330

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

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

Amy Garrett
Benton, Linn, & Polk Counties, 1849 NW 9th St,
Corvallis, OR 97330
541-766-6750

Melissa Matthewson
Special Programs, Statewide,
Applegate, OR 97530

Elizabeth Murphy
Jackson, Josephine, & Douglas Counties, 569 Hanley Rd, Central Point, OR 97502
541-776-7371

Maud Powell
Jackson, Josephine, & Douglas Counties, 569 Hanley Rd, Central Point, OR 97502
541-776-7371

Chrissy Lucas
Small Farms Program Assistant, 1849 NW 9th St,
Corvallis, OR 97330
541-766-3556

Oregon Small Farm News Layout by: Chrissy Lucas

Cover Photo:
Chilling at Century Oak Packing Company, Mount Angel, OR. Story on page 3.
Photo by Garry Stephenson

OSU Small Farms Program Staffing Reductions & Staffing Increases

By: Garry Stephenson, Small Farms Program, Oregon State University

The Bad News

During 2011, three Small Farms faculty positions were lost. A new Extension Service administrative model created opportunities for two faculty to be promoted, vacating their Small Farms positions on the central coast and central Oregon. One other faculty member stepped down. It is unlikely that these positions will be refilled until the 2013-14 legislative session or perhaps beyond.

The Good News

However, there is good news. The core of the Small Farms Program remains intact. We have taken an entrepreneurial approach to continue to grow the program and meet the demand of small, young, beginning and women farmers. The innovative research and education partnership with Oregon Tilth, Inc. plus grant and other external funds have allowed us to increase staffing in programmatic and geographic areas of opportunity. Funds from Oregon State University currently support 4 Small Farms faculty totaling 3.0 FTE (full time equivalent). External funds (non-OSU) now support a number of additional faculty and program assistants totaling over 4.0 FTE.

Current programs and research that are enhanced by external funds include: A project to develop a toolkit and curriculum for establishing teaching farms on OSU research farms; a workshop series to enhance alternative livestock production for small scale producers; a workshop series on winter farming in southern Oregon; Women's Farming Networks; ACRES compost trainings; research related to the research, education and policy needs of organic farmers; cover crops; and developing degree day models for vegetable varieties, weeds and nitrogen.

Faculty & program assistants currently supported by external (non-OSU) funds include:

- Amy Garrett and Jennie Cramer based in the southern Willamette Valley (Benton, Linn, Lane and Polk Counties).
- Shaina Bronstein, Elizabeth Murphy, Heidi Dawn, and Tracy Harding based at the Southern Oregon Research and Extension Center (Jackson and Josephine Counties).
- A recently hired small farms program assistant based in the north Willamette Valley (Clackamas, Washington and Multnomah Counties).
- In addition, Melissa Matthewson continues to work for the Small Farms Program on special projects on a limited basis and former small farms program assistant Kristin Pool is now an OSU graduate research assistant in the Department of Horticulture.

Several of these positions are part-time and fit individual family, farming and other employment commitments.

Sources of external funds include the Oregon Tilth/OSU Small Farms Program Research and Education Partnership, USDA Western SARE, USDA Risk Management Agency, National Institute of Food and Agriculture, USDA Risk Management Education, Specialty Crop grant (via Oregon Department of Agriculture), West Multnomah Soil and Water Conservation District, plus funding from the Polk Extension tax district and the Clackamas Extension tax district.

This approach to funding the Small Farms Program requires being nimble and has some risks but it has helped us weather a period of substantial budget decline.

Local Meat Producer Takes on Retail Meat Cutting

By: Lauren Gwin, Small Farms Program, Oregon State University

"I built a packing plant to support my farming habit."

Mike and Patty Kloft are the farmers behind Lonely Lane Farm, a meat company based in Mt. Angel, OR, that sells pork and 100% grass-fed beef, both raised with no hormones or antibiotics. They recently took over a critical link in their supply chain: processing. Century Oak Packing, in Mt. Angel, OR, is a USDA-inspected "cut and wrap" facility where they turn whole carcasses into packages of meat for sale. The plant was designed for co-packing, and the Klofts are currently seeking other local meat producers interested in USDA inspected retail cutting and packaging, and value-added production.

Packaging Lonely Lane ground beef.
Photo by Garry Stephenson

History

Mike and Patty both have deep roots in Mt. Angel. Mike is a third generation cattle farmer, and Patty is a fifth generation pig farmer. Mike's grandfather had a meat packing plant but sold it when he started Lonely Lane Farms in 1939. The farm was originally a dairy and then switched to beef in the 1980s after the dairy market collapsed.

Long before grass-fed beef was popular, Lonely Lane cattle were forage-finished. The Klofts grew their own alfalfa for finishing, and the cattle, 100% Polled Herefords, graded low Choice, with white fat. "The breed makes a big difference in how things marble," Mike explains. They never used antibiotics or hormone implants. It wasn't a marketing strategy, just how they did things. "We didn't know anyone wanted that," Mike laughs.

In 1999, while a student at OSU, Mike was selling finished beef cattle to a nearby processor but cattle prices were then very low. He started thinking about other options. He was taking a class in world agriculture and food from OSU Professor Garry Stephenson and after class one day asked for advice about direct marketing. Mike remembers Garry's advice to the word: don't find a product to match the market, find a market to match your product.

Mike began selling packaged cuts of meat at retail stores in Corvallis and the Beaverton farmers' market. While other local meat producers often only had fresh product seasonally, Lonely Lane could deliver fresh meat year-round, because the farm staggered calving to be year-round.

Initially, they direct marketed no more than 50 head of beef each year. They now sell 165-200 head of beef and 250 hogs per year. The hogs are all raised on Patty's family farm, and they have added four co-producers for beef. Their #1 market is grocery stores, and #2 is the Beaverton farmers' market, where Lonely Lane was the first beef and pork vendor, drawing customers from miles around because no other farmers' markets had meat then.

From farmer to butcher

When he began marketing meat, Mike was lucky to have a USDA inspected meat processor, Mt. Angel Meats, in the same town. When he started bringing animals there, the plant was in need of a HACCP plan, which Mike offered to write. In return, he asked for packaging space in the plant. He then started helping with cutting. At the peak, he processed four head a week there.

Innovative wooden rails enhance food safety.
Photo by Garry Stephenson

About three years ago, Mike decided he needed more control over his processing – specifically the cutting and wrapping part. In NW Oregon, USDA inspected slaughter is fairly available; what he found he needed was his own cutting plant. "I realized I had to build a facility or get out of the market."

After unsuccessfully trying to buy an existing plant, he decided to build his own. His father and uncle helped him remodel an old dairy barn on the farm property; it took 18 months and cost about $500,000. The plant is 4500 square feet, with cooler capacity to hold 25,000 lbs or 30 beef (or equivalent).

The plant received its grant of federal inspection earlier this year. They are currently processing two to four beef and three to five hogs each week. Livestock are slaughtered at Mt. Angel Meats or Dayton Natural Meats, then transported as quarters to Century Oak for aging, cutting, and packaging. They also make fresh sausage and plan to have their smokehouse operational by summer.

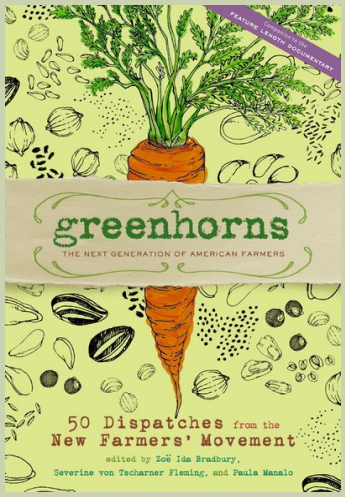
Mike estimates that the current Lonely Lane sales accounts will use one full day each week, Wednesday. He is looking for regular, weekly processing customers for Tuesday and Thursday. "Now and then" customers will come Mondays and Fridays.

Because the Klofts bootstrapped the plant themselves and took on no debt, Century Oak will break even with only their own product, since both Mike and Patty can handle all their own cutting and packaging. When they have additional processing customers, they will hire an experienced butcher who is a friend of the family and ready to sign on when needed.

"If things go well," Mike speculates, "if we operate at capacity, we'll build a new plant in 10 years, a larger one."

For more information, visit Century Oak Packing's website: http://centuryoakpacking.com/

Oregon Farmers Published in New Book



Oregon farmers Maud Powell, Josh Volk and Katie Kulla have essays appear in a new book about new farmers titled, Greenhorns: 50 Dispatches from the New Farmers' Movement. Maud Powell co-owns Wolf Gulch Farm and is an instructor with the OSU Small Farms Program, Josh Volk operates Slow Hand Farm, and Katie Kulla co-owns Oakhill Organics with Casey Kulla. In addition, one of the editors of the volume also hailing from Oregon is Zoe Bradbury of Valley Flora Farm on the Southern Oregon Coast.

From Storey Publishing: *Greenhorns: 50 Dispatches from the New Farmers' Movement* is a collection of essays written by dedicated young farmers. In the most recent Census of Agriculture, the USDA reported that the number of farms in America is increasing for the first time in decades. The most marked increase is in the small-acreage sector. The editors have assembled a wide range of stories that instruct as they inspire. With topics including financing, family, logistics, machinery, community building, and social change, Greenhorns helps you and aspiring farmers navigate career paths, build skills, and connect with each other while growing self-sufficient enterprises with conviction, vision and respect for the earth. Filled with advice, anecdotes, and stories of life lessons learned, Greenhorns is a must-read not only for new farmers, but also for self-reliance enthusiasts and anyone interested in organic, locally grown food.

Greenhorns: 50 Dispatches from the New Farmers' Movement
Editied by Zoe Bradbury, Severine von Tscharner Fleming, and Paula Manalo, Storey Publishing, $14.93 ISBN 978-1-60342-772-2

The 2012 OSU Small Farms Conference Retrospective

By: Garry Stephenson, Small Farms Program, Oregon State University

The attendance hit a record. Over 800 people attended the 2012 OSU Small Farms Conference. The 2011 record was 650. Needless to say, the organizers were confident but nervous. Attendees included: Farmers (majority), farmers' market managers, agriculture and food non-profit organizations, government agency and university faculty, and those who opening defied definition.

Over 800 farmers, non-profit organizations and farmers' market managers attended the 2012 OSU Small Farms Conference. *Photo by Melissa Fery*

The registration fee is always kept low through the support of sponsors. One of key expenses the registration fees cover is food. In a clear indication of how far the local/regional food system has developed in recent years, nearly all of the food for lunch was sourced locally (except lunch meats and cheese). The registration fee helps support these farms: Salad mix and root vegetables from Denison Farms near Corvallis and Gathering Together Farm near Philomath, black beans and garbanzo beans from Hunton's Farm near Junction City, hazel nuts from LaMancha Orchard near Sweet Home. All the bread was *Oregon Grains 100 Mile Bread* which included wheat, oaks and flax from Stalford Seed Farm of Tangent and Honey from Olsen's Honey Farm near Albany. The organizing committee will continue to improve the menu with food sourced from within our region.

Keynote speaker, Kristin Kimball "continues the conversation" in a session devoted to open questions. *Photo by Melissa Fery*

The conference included an inspiring keynote by Kristin Kimball of Essex Farm, New York plus 21 sessions covering multi-species meat marketing, new Oregon policies on broiler production and value added products, winter farming, permaculture, farm finance and management, and the full diet full year CSA model.

A highlight of the conference was the *Ladies in the Fields* art exhibit consisting of 11 portraits of local farm women by Rebecca Waterhouse from Scio. See page 7 for more information.

Conference sponsors were USDA Western Sustainable Agriculture Research and Education (WSARE), the Oregon Department of Agriculture, USDA Western Center Risk Management Education (RME), the Oregon Farmers' Market Association and Oregon State University.

For a farmer's perspective of the 2012 Small Farms Conference, see a reprint of Goat Song Farm's Caitlyn Menne "Goat Song Farm" farm blog on page 6.

The 2013 OSU Small Farms Conference is scheduled for Saturday, March 2nd, 2013 Mark your calendars.

The Small Farms Conference

By: Caitlyn Menne, Goat Song Farm
To Sing with Goats blog - www.lifeatmennageriefarm.blogspot.com

Hats... There were a lot of hats in that room... I found myself gaping at an enormous crowd of people last Saturday, as I wound my way through what was the OSU Small Farms Conference. Eight hundred people had gathered for this event. Eight hundred people who all had the same passion in life: growing good, clean food.

Granted, not all eight hundred people were wearing hats, but there was still quite the vast array! I scanned the low, brick building, trying to take everything in. There were conservative Mennonites, and beaded, tattooed hippies. Elderly gentlemen with polished cowboy boots and dusty hats, and suburbanites wearing T-shirts and sneakers. Youngsters and oldsters, wise folks, and reckless dreamers, cattle ranchers and veggie growers, folks with 100 acres, and others with 1 acre, rumbling truck drivers and Honda Accord drivers, tractor lovers and horse lovers. We were all here. To learn about farming.

The announcer gave his short and to-the-point speech as people filtered in the auditorium, and commenced to having various people stand up for what they did, and having everyone clap. He thanked all the folks who put the conference together; he thanked the speakers. He thanked the farmers who they bought lunch from (that was awesome; everything was locally sourced!), and then he surprised me by asking all the farmers under the age of 35 to please stand up.

Hey, thats me! LOL. I glanced around to see who else was standing up, and upon seeing other young people getting to their feet (I have to admit though... I was the youngest person [sigh]), I too, got out of my chair. My teal, *Lunatic Farmer* shirt suddenly seemed very conspicuous, but I wore it proudly. The announcer pointed to all of us who were standing and said, "Folks, these people are our future. Let›s give them a hand!" And with that, a thunderous round of applause rose from all around me. I have never felt so proud, like I did at that moment. I may still be a youngster, but these people were proud that I was willing to shoulder the responsibilities that they did, in producing good food. Shucks, I smile just thinking about it. :)

The classes were started shortly after, and the rest of the day was bliss... My first class was about winter gardening. Living in Oregon does have its advantages when it comes to weather. Our winters are so mild that we can pretty much keep things going year around. Whoohoo! My pen was madly writing things down; everything from slug control (high calcium levels in the soil keeps them at bay!), to greenhouse styles. Kale varieties, to planting dates. The first two speakers were local farmers. Soft spoken, yet rather blunt. Their gifts in life were obviously growing food, not speaking, but bless their hearts for shouldering the task anyway. ;)

Second class was about running a full-diet, year-around CSA (Community Supported Agriculture), taught by Kristin Kimball. Wow. Totally inspiring! Kristin is just as awesome when it comes to speaking as she is in her writing. She spoke of how they run their *Essex Farm* in New York, how we could use their CSA template, how to use draft horses, and all that fun stuff. Many questions were asked and answered during that session, and my hand couldn›t write things fast enough! It was such a good talk, and Kristin challenged all of us to see how we could change our farming methods to be more sustainable. After the talk was over, I looked at my friend Sarah and said, "I'm calling about that black draft horse tomorrow." LOL. (and I did, by the way)

The last session was yet another class taught by Kristin. This one was called, "Farmers as Writers", and I LOVED it. It was such an awesome time to hone in on my writing skills, ask questions to someone who has published a book already, and just be around fellow agriculture writers. :) As Kristin started wrapping the class up, she challenged us all to write down a writing goal we would like to achieve. I, being the unsuspecting person that I am, blithely wrote down that I wanted to start getting up at 6:30 every morning and

write until 8. Next, Kristin had everyone find a partner. Sarah and I looked at each other, and promptly scooted closer. That's what friends are for, right? Once everyone had a partner, Kristin mischievously, but seriously, told us to trade e-mail addresses with our partners and badger each other until our goals were accomplished. Everyone groaned and then laughed. Talk about walking blindly into a trap! LOL. So my friends, I am now getting up at 6:30 every morning, and I am writing until 8. Thank you Sarah for keeping me at it! ;)

The drive home was filled with chatter as Sarah and I mulled over our day. I was filled to the brim with ideas and schemes, and the two of us laughed and joked over possibilities. It was a good day.

I am a farmer. :)

This a reprint of the Goat Song Farm blog written about the OSU Small Farms Conference

Ladies in the Fields

Growing up in rural Oregon surrounded by trees and farm fields, agriculture has been an interest for artist, Rebecca Waterhouse. When combined with a talent for portraiture and a women's college education, this awareness of farming results in a celebration of women farmers. Twelve farmers all located near Oregon's Willamette Valley invited Rebecca to take photographs while they shared their stories of developing businesses, obstacles and opportunities they have experienced as women and as farmers. The photographs were later used as inspiration to paint original portraits.

The current collection features Jennifer Olsen of The Mushroomery near Lebanon, Julia Sunkler of My Pharm near Monroe, Alice Fairfield of Fairfield Farm near Corvallis, Lisa and Nancy Hubbe of Sweetwell Farm and Tommie van de Kamp of Queener Fruit Farm both near Scio , Jan Neilson of Fraga Farm and Luisa Ponzi of Ponzi Vineyards of the Sweet Home area, Karen Finley of Queen Bee Honey Company near Corvallis, Scottie Jones of Leaping Lamb Farm near Alsea, Merrilee Buchanan Benson of Tyee Wine Cellars near Corvallis, and Hannelore Ondrusek of Price Creek Family Farm near Kings Valley.

Ladies in the Fields is on exhibit through April at the Albany Public Library. The collection may also be viewed on Rebecca's website at http://rebeccawaterhouse.com/paintings/

Oregon's 1000 Bird Exemption: Rules and Best Practices

By: Lauren Gwin, Small Farms Program, Oregon State University

You may recall that in the 2011 legislative session, the Oregon state legislature passed a law creating new direct-market opportunity for small poultry producers. The law, HB2872, commonly known as "the Poultry Bill" is modeled after the federal producer-grower 1000 bird exemption in the Poultry Products Inspection Act (PPIA). At long last, the administrative rules are (essentially) final, and an FAQ about them is posted on the Oregon Department of Agriculture website: http://www.oregon.gov/ODA/FSD/faq_2872.shtml

Ian Silvernail teaches proper poultry handling for food safety.
Photo by Lauren Gwin

The Oregon Administrative Rules for HB2872 created two different exemptions: the Farmers' Market Exemption and the On-Farm Sale Exemption. Under the On-Farm Sale Exemption, Oregon farmers may slaughter up to 1000 poultry per year that they raise themselves on their farms, from eggs or chicks less than two weeks old, to sell direct to household consumers. Their processing set-up does not have to meet the building and sanitation requirements of a state-licensed poultry processing facility. Poultry must be "reasonably" protected from contamination. A combination of floor mats, tarps, and canopies should suffice. Customers must come to the farm to buy the poultry, which can be fresh or frozen.

The Farmers' Market Exemption distinguishes on-farm sales from off-farm sales. If a farmer wishes to sell direct to consumers in an off-farm setting, such as a farmers' market or a CSA delivery, he must process in a facility that meets the poultry processing buildings and facilities requirements (ORS 619.026 and OAR 603-028-0100). However, he is not required to purchase a license.

As ODA explains in their FAQ, "Limiting sales of poultry processed under minimal building and facilities gives consumers some capacity to assess sanitation, building and facilities themselves when they purchase poultry."

We have written a guidebook to help farmers assure they are processing in sanitary conditions and selling their customers safe, healthy poultry. "A Best Practices Guide to Open-Air Poultry Slaughter" includes:

- Suggested sanitation practices for the processing site, water, personal hygiene, equipment, and packaging;
- Pathogen control techniques, including an anti-microbial spray step;
- Monitoring and recordkeeping guidance;
- Rules and recommendations for disposal of waste water and offal;
- A list of other useful resources about small-scale/on-farm poultry processing.

Some of the advice may sound like common sense. Yet the consequences of carelessness can be high: contaminated poultry, sick consumers, personal/farm liability, penalties for environmental damage, and so forth. Other suggestions may be new to you. All farmers should take the time to come up with a plan that they can and *will* carry out every day they process poultry.

The guide is available on the OSU Small Farm Program website, http://smallfarms.oregonstate.edu/ under Technical Reports entitled: A Best Practices Guide to Open Air Poultry Slaughter & Meat and Poultry Processing Regulations in Oregon- A Short Guide.

Building Community Through Food and Partnerships: Gathering Together Farm, Part 1

By: Amy Garrett, Small Farms Program, Oregon State University

New farms and food artisans continue to pop up in our community. In the case of Gathering Together Farm (GTF), multiple farms have popped up within a couple of mile radius over the past few years and some food artisans have even gotten their start within Gathering Together Farm, such as Burnheimer Meat Co. and Weinsteiger Mustard Co. This article will highlight how local farms and food artisans get started, support one another, and touch upon how these partnerships work in the case of GTF.

GTF got their start in 1987 on 20 acres with 5 employees, in year two dropped down to 7 acres with just the owners John Eveland and Sally Brewer, and has grown to employing over 50 people at the high point in their season and farming over 50 acres. Their primary markets in the beginning were Nearly Normal's restaurant, which John is part owner in, and wholesaling through Organically Grown Company.

Twenty-five years later GTF is providing high quality produce for multiple marketing channels including: farmers markets, restaurants, grocery stores, 200+ member CSA, GTF farm stand, on-farm restaurant, and Organically Grown Company. In addition to GTF's growth and success over the past 25 years, multiple partnerships have blossomed and facilitated new growth in our community food system.

GTF's restaurant and farm stand source products locally, and in many cases less than a couple miles away. The farm stand sells their own farm fresh produce in addition to products from neighboring farms including: eggs and poultry from Provenance farm, lamb from Cattail Creek, poultry from Afton Field Farm, fish from Moonshine Park Fish Company, and sausage and bacon from Burnheimer Meat Co. just to name a few.

Brad Burnheimer started working for GTF's on-farm restaurant with chef J.C. Mersman in 2009, and decided to start Burnheimer Meat Co. in 2011. Brad is extremely grateful towards John, Sally, and J.C. for providing him access to their ODA certified kitchen when the restaurant is closed. Brad sources meat from Mosaic Farm, Provenance Farm, Evergreen Creek Farm, and Heritage Farm NW and sells his products directly to the consumer. The local farms he sources

Gathering Together Farm, farm crew lunch.
Photo courtesy of Gathering Together Farm

Brad Burnheimer and Tenzin of Deck Family Farm butchering a hog
Photo by Amy Garrett

from get their animals processed through USDA certified facilities and deliver them to Brad.

The newest growth for Burnheimer Meat Co. has been starting a meat CSA that offers an array of customized options in a monthly meat box, and exploring a new partnership with Deck Family Farm in Junction City, OR. Brad will be hosting and cooking for a *Burnheimer Meat Co. fundraiser dinner on Saturday May 5, 2012 at Gathering Together Farm's restaurant* for 50 people with proceeds going towards his start-up infrastructure costs. To find out more the meat CSA or make a reservation for the dinner contact Brad Burnheimer at www.burnheimermeatco.com or 541-231-4085.

Rebecka Weinsteiger has worked for GTF for 5 years helping with farmer's markets. When Rebecka expressed interest to John and Sally in starting Weinsteiger Mustard Co. a few years ago, they were very supportive. They provided Rebecka with the opportunity to host a fundraiser dinner at their restaurant with chef J.C. to get her business off the ground. She was also provided access to GTF's certified kitchen when the restaurant was closed to make mustard. Weinsteiger Mustard Co sources mustard seed, beer, honey, horseradish, and other herbs as available locally. Rebecka said that she feels "more than just employed by GTF. I feel that I am a part of their family."

Gathering Together Farm is a great model of what can happen when you combine talents and a community to grow with and work in. The people side of farming can be more complicated at times than growing food. When asked about how all of these partnerships work, John mentioned that it was about growing high-quality vegetables first and foremost, and then having pragmatic people that like what they do on board. According to Frank Morton of Wild Garden Seeds (another partner of GTF), "it is about finding people that have complimentary not competitive interests. Then consider how that person's passion can be something you are a part of. We are way more together than we are alone." These partnerships expand the reach of each of these farms deep into our community and beyond.

Stay tuned! In a future edition of Small Farm News, we will cover the partnership between Wild Garden Seeds and Gathering Together Farm in "Building Community through Food and Partnerships, Part 2".

SARE's 2011/2012 Report from the Field

SARE is proud to release its 2011/2012 Report from the Field, the biennial report of the program's recent cream-of-the-crop grantees and their work.

Some highlights:

- Two brothers in Nebraska boosted corn yields by 10 percent in non-irrigated conditions with moisture-conserving cover crops, and have launched a cover-crop seed business.
- Within a year, knowledge gained from a three-day renewable energy training benefited more than 2,600 farmers across the South.
- A Cornell University Extension specialist developed new techniques for onion growers that can increase their net profit by up to $258 per 100-foot bed.

Report from the Field also includes updates on some of the funding allocations and priority activities in each of SARE's four regions, such as new grant programs, stakeholder listening sessions and scaling up local-based projects to the regional level - all to continually adapt grant making to the needs of the agricultural community.

Report from the Field is an inspirational and informative snapshot of the people who are working to make American agriculture more profitable for farmers, better for the environment, and a stronger foundation of rural communities.

Download all editions of SARE's Report from the Field for free at the SARE Learning Center. For print copies, call 301/374-9696 or write SARE Outreach, PO Box 753, Waldorf, Maryland 20604-0753.

Meat Measles

By: Dr. Susan Kerr, Washington State University - Klickitat County Extension

Many parasites have evolved with their hosts until a type of "if-you-don't-bother-me-I-won't-bother-you" relationship exists. It is not to a parasite's advantage to kill its host! However, sometimes parasites get into the wrong host and various problems can arise. The case of "measles" in beef, pork, sheep and goat meat is one such example.

Measles is the term given to the carcass damage that occurs when immature tapeworms encyst in pork, beef, sheep and goat meat. A few to thousands of small white nodules can be found at processing, which necessitates carcass trimming or condemnation to keep the food supply safe.

NOTE: The use of the term "measles" to describe this situation is unfortunate because it naturally makes one think about human measles. There is no connection between these two terms; the meat measles discussed in this article is caused by parasites; the human disease is caused by a virus. The true name of meat measles is cysticercosis (sis-tuh-sur-KO-sis).

Beef and Swine

Animals on pasture can sometimes ingest contaminants with forage. If they ingest tapeworm eggs or segments from other species such as dogs or even humans, cysticercosis can affect their carcass. In beef cattle, the human tapeworm *Taenia saginata* is the culprit. Cattle's feed or forage can become contaminated with this parasite if untreated human waste makes its way onto cattle pastures or into feed, if improperly treated human wastewater is applied to cattle pastures for irrigation or fertilization, or if cattle drink water contaminated with this human parasite.

If cattle ingest infective *T. saginata* tapeworm eggs or segments, the eggs hatch in the animal's intestinal tract and an immature form of the tapeworm encysts in muscle tissue. These cysts are pea-sized and readily visible. They are white and may be fluid-filled or calcified, depending on the animal's reaction to the parasite. The life cycle of this parasite would be completed if a human ingested these cysts in undercooked meat; the parasite would mature, lodge in the person's small intestine and perhaps go on to live a very long and undetected life in the human, discharging eggs or infective segments with the host's feces.

A very similar situation can occur with swine and the tapeworm *Taenia solium*. Again, humans are the definitive host, which means they are the species in which the parasite completes its life cycle, reaches adulthood and is able to produce eggs. Should swine ingest human tapeworm eggs or segments, tapeworm cysts can develop in pork muscle and be detected at slaughter. Refer to Figure 1 below from the Centers for Disease Control's Division of Parasitic Diseases

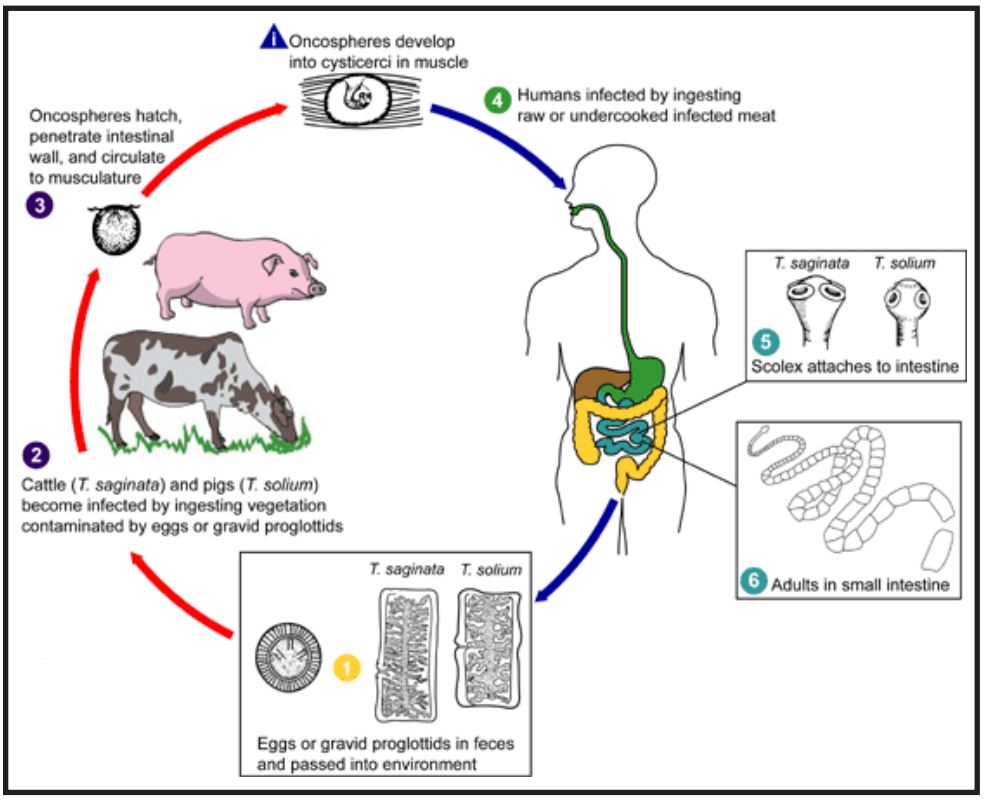


Figure 1. Origin of beef and pork "measles": life cycle of beef and swine tapeworms.
Adapted from www.dpd.cdc.gov/dpdx/HTML/Taeniasis.htm

and Malaria for a graphic depiction of the life cycles of *T. saginata* and *T. solium*.

FYI, *T. solium* can create serious disease in humans. If humans ingest *T. solium* eggs and/or if the adult tapeworm is refluxed from the small intestine into the stomach, human cysticercosis (painful cysts in muscles) or neurocysticercosis (cysts in brain) can develop. If humans ingest *T. solium* cysts in undercooked pork, they can simply develop the less problematic (but still disgusting) adult tapeworm, which can live happily undetected in humans for decades.

Cysticercosis in pork.
Photo from Armed Forces Institute of Pathology
Courtesy of the Center for Food Security & Public Health at the College of Veterinary Medicine, Iowa State University.

Sheep and Goats

The case is much different for tapeworms involving sheep and goats. *Taenia hydatigena*, *T. ovis*, *T. multiceps* and *Echinococcus granulosis* are all tapeworms that involve sheep and/or goats as intermediate hosts. The definitive hosts are canines—dogs, foxes, coyotes and wolves. A grazing sheep or goat could ingest tapeworm eggs shed in an infected canine's feces. Depending on the species of tapeworm, immature forms can lodge in the affected sheep or goat's lungs, liver, brain, abdominal cavity or muscles. The muscles usually affected include the tongue, jaw muscles, heart and diaphragm.

Unlike with the tapeworm life cycles involving beef and pork described above, humans are not involved with most of the canine tapeworms that affect sheep and goats. The exception is *E. granulosis*, which can cause hydatid disease in humans who ingest eggs through contact with infected dog feces. In this case, immature tapeworms can encyst in human organs such as the lungs, liver, brain, etc. and cause various health problems.

Detection of Cysticercosis

Blood tests for relevant antibodies can detect cysticercosis in animals before slaughter, but the cost is considered prohibitive. Cysticercosis is generally identified during slaughter when cysts can be seen in muscle or organs. Affected tissues are trimmed out and removed from human consumption; carcasses with many lesions are condemned. If even just one cyst is detected, the processor must freeze the carcass for 15 days to make the remaining carcass safe for human use. Cysticercosis therefore causes economic hardship to producers, processors and consumers.

Although humans are the definitive host for *T. saginata* and *T. solium* and these tapeworms often cause no illness in their human hosts, the public deserves to trust in the safety and wholesomeness of the food they buy. Trained USDA inspectors can identify cysticercosis at slaughter and intervene to keep affected products out of the food supply; experieced custom processors can recognize this condition as well. If a significant number of animals from a certain source is affected with cysticercosis, federal veterinary inspectors will visit the premise of origin to determine and eliminate the means of infection.

Prevention and Control Measures

Standard quality assurance practices, recommended

sanitation/hygiene and routine safe food handling should greatly reduce the chance of ingesting contaminated meat and/or incurring losses from excessive carcass trimming or condemnation due to cysticercosis.

- Do not let human waste come into contact with swine and beef feeds or environments
- Wash hands after going to the bathroom, after handling animals and before eating
- Deworm livestock as recommended by veterinarians
- Provide human sanitation stations (portable bathrooms and handwashing stations) where needed
- Consult physicians for identification and treatment of humans infected with tapeworms
- Have carcasses processed where processors are knowledgeable about cysticercosis, can detect its presence and know what to do if found
- Cook meat cuts to 145°F and ground meat to 160°F (165°F for ground poultry); use a meat thermometer
- Regularly deworm at-risk dogs—especially livestock guardians—with effective tapeworm medication (praziquantel)
- Prevent dogs from feeding on the carcasses of infected intermediate hosts (dead sheep, goats, deer, elk, etc.)
- Control stray dog populations
- Restrict areas of home slaughter of livestock; do not give farm dogs or wild canines access to these areas
- Properly dispose of offal by effective composting, deep burial, landfill or other legal means that prevent canine access
- Do not consume food or water that may be contaminated by canine fecal matter
- Do not encourage wild animals to come close to your home or keep them as pets
- Wear protective gloves when dressing any carcass or handling canine feces
- Do not harvest or consume sick animals

Origin of sheep cysticercosis. *Photo courtesy Optimal Livestock Services, LLC and CleonsCorner.com, used with permission.*

Conclusion

Cysticercosis is a quality assurance issue that can affect pork, beef, lamb and goat meat produced on any scale. Small acreage owners and large commercial operators alike should devote time to reducing the likelihood that the meat they produce is affected by encysted tapeworm larvae. Enacting the prevention and control measures listed above should greatly reduce the risk of cysticercosis in a herd and thereby eliminate the need for carcass trimming or condemnation.

For More Information

www.optimalag.com/cleonscorner/Article003.aspx

http://edis.ifas.ufl.edu/pdffiles/AN/AN17100.pdf

www.cfsph.iastate.edu/Factsheets/pdfs/taenia.pdf

www.cdc.gov/parasites/cysticercosis/index.html

www.vetmed.ucdavis.edu/vetext/INF-BE_cca/INF-BE_cca98/INF-BE_cca9812.html

Thanks to Dr. William J. Foreyt, Washington State University College of Veterinary Medicine Department of Veterinary Microbiology and Pathology, for reviewing this article.

Elizabeth Murphy Joins the Small Farms Program in Southern Oregon

By: Maud Powell, Small Farms Program, Oregon State University

The Southern Oregon Small Farms program is thrilled to welcome Elizabeth Murphy (Ea for short) to our staff. In February, Ea was hired on as the new Forage and Livestock instructor and area Extension agent for Jackson, Josephine and Douglas counties. Currently, she is focused on organizing five classes on livestock management for the 2012 season. She joins the Southern Oregon Small Farms team of Maud Macrory Powell, Tracy Harding, Shaina Bronstein and Heidi Dawn.

Ea was born and raised in East Texas, then relocated to Southern Oregon in 1998. She spent several years working on small farms in the area and engaging in forestry, construction and landscaping work. In 2004, she entered Southern Oregon University as an undergraduate and majored in Geology with a biology minor. During her stint at SOU, Ea participated in a number of interesting field research projects. One project involved a partnership with SOU and the BLM and focused on the control of yellow star thistle, one of the most noxious weeds in Southern Oregon. She also worked on projects examining the mycorrhizal oak associations in oak woodlands and sediment contamination trends related to the Gold Ray Dam removal.

After completing her undergraduate degree, Ea went on to get her Masters degree in Soil Science from the Agroecology Lab of UC Davis . At Davis, she specialized in soil organic carbon sequestration and stabilization. Specifically, her research examined the relationship between residue and manure inputs and soil carbon cycling. After completing her graduate work, Ea was eager to return to Southern Oregon and begin applying her knowledge and expertise within the local community.

In addition to her half-time position with OSU extension, Ea was also recently hired on to be the part-time Riparian Restoration Program Manager for the Applegate River Watershed Council. She works with a

diverse group of landowners and small farmers through her work with the watershed council, which provides opportunities for her to deepen her ties to the local agricultural community. Overall, she sees her work as integrating environmental stewardship with small-scale agricultural production. Her newest passion is to help people use goats in ecological restoration projects. In her spare time, Ea practices Aikido and teaches women how to operate chainsaws. Keep an eye out for a great line-up of classes on Livestock Management this spring and summer around the state.

LETTUCE, SQUASH, HUNGER

Put another way….. let US squash hunger! You can help the Oregon Food Bank meet their mission of ending hunger by donating excess product from your fields during the harvest season. This is truly a "win-win" proposal as the Food Bank is able to feed hungry families and offers a business solution to your company. Simply give us a call to discuss donation options based on the crop, its location, and the window of opportunity for the harvest. All across the state we have a variety of financial and logistical resources available to assist with the harvest of the excess product. In addition, our fleet of trucks is available to pick up the donated product and quickly distribute it to our regional food bank partners. If the volume is sufficient, it might also be frozen, canned, or processed into a soup or sauce. You receive a business tax receipt for the donated product as well as the satisfaction of not seeing the food go to waste. For more information, please contact Dan Crunican at 503-358-0798 or Amy Gillette at 503-490-8972.

Oregon FOOD BANK SM

Expanding Niche Livestock Ranching in Oregon through Risk Management Education

OSU Extension Small Farm program along with partners, including the USDA Risk Management Agency, OSU Extension Animal Science program and local farmers and ranchers are planning field days this summer to address issues related to small-scale livestock production.

The stand-alone workshops will focus on specific livestock species including sheep, hogs, meat goats, dairy goats, beef cattle and poultry processing. All workshops will take place on-farm and focus on strategies to manage production and marketing risk to create viable and successful small livestock enterprises.

Regional field days are currently being planned; more information will become available as the details are developed. Feel free to contact the regional coordinators for class descriptions and registration information.

Southern/Central Willamette Valley

Dairy Goat and Cheese Processing
Fraga Farms, Sweet Home
Wednesday, June 6th, 10am-4pm, $60

Raising and Marketing Healthy Lambs
Rain Sheep Lamb, Albany
Sunday, June 10th, 2pm-7pm, $30

Processing Poultry under Oregon HB 2872
Our Family Farm, Eugene
Tuesday, July 10th, 1pm-7pm, $60

Pork Production
July/August date TBA. Wood Family Farm,
Aumsville, Oregon

Raising Beef on Grass
August date TBA.
Sweet Home Farms, Sweet Home, Oregon

Contact:
Melissa Fery
melissa.fery@oregonstate.edu
541-766-6750

Southern Oregon

Growing Lamb
Long Mountain Farm, Eagle Point
Saturday, May 19th, 10am-4pm, $30

Pasturing Hogs
June date TBA.
Hensel Family Farms, Rogue River, Oregon

Processing Poultry under Oregon HB 2872
Rogue Valley Brambles, Talent
Sunday, July 8th, 10am-4pm, $60

Managing Meat Goats
Friday, July 27th, 10am-4pm, $30
Tri-R-Ranch, Glendale, Oregon

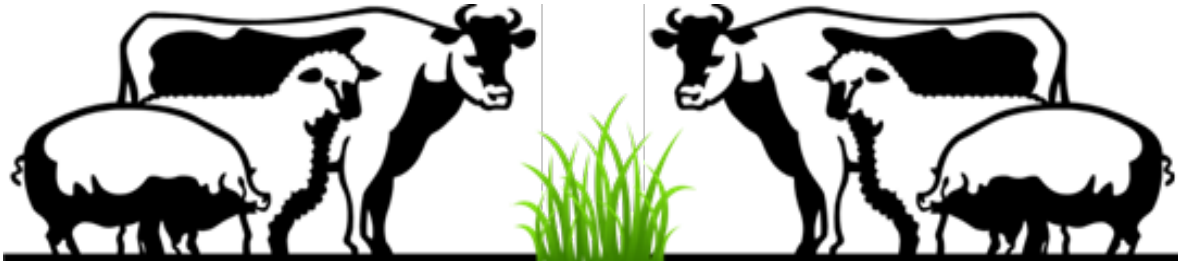
Raising Beef on Grass
Martin Family Ranch, Central Point
Friday, August 10th, 10am-4pm, $30

Contact:
Elizabeth Murphy
elizabeth.murphy@oregonstate.edu
541-776-7371, ext 208

Northern Willamette Valley

Workshops are currently being planned to address production, processing, marketing and other risk management topics for farmers and ranchers interested in***: Poultry, Beef cattle, Hogs, & Sheep***

Contact:
Heidi Noordijk
heidi.noordijk@oregonstate.edu
503-678-1264



Ponding, Plugging, & Pugging: How to Care for Wet Spring Soils

By: Elizabeth Murphy, Small Farms Program, Oregon State University

With another long, wet spring on the horizon for the Pacific Northwest, particular attention should be paid to take care of wet spring soils. As rainfall continues, rivers swell, and fields are saturated well into the estimated production start dates, it may be tempting to go ahead and cultivate fields or open up pastures. In these conditions, however, the potential damage to the soil far outweighs the benefits of an earlier start to the season.

Ponding

At the most basic level, soils are composed of mineral particles (sand, silt, and clay), and the pore spaces between these particles. Pores are filled with a dynamic balance of air and water, both of which are necessary for soil life, including plant roots and soil biota. Large amounts of rain or irrigation water over short periods of time exceeds the water holding capacity of the soil by filling pore spaces. Under these conditions, known as field capacity, excess water cannot enter the soil and runs off the soil surface. This runoff from local topographic highs can lead to erosive features across bare soils, such as rills and gullies, and results in ponding in local topographic lows.

Soil type and drainage rate also affect runoff and ponding across your field. Finer textured soils with more clay have greater water holding capacity, but can also have slower drainage rates that result in more surface water. On the other hand, coarse, sandier soils have less water holding capacity, but remain saturated for shorter periods of time due to greater drainage rates. Soil compaction, by reducing pore space and drainage rates, results in more ponding and runoff than less compacted soils.

For these reasons, observations during and after heavy rainfall events can shed light on variations in soil type and condition across the farm. Ponded areas may highlight management problems that lead to increased compaction or may simply reveal areas to avoid for a longer time following rainfall events. Watching the flow of water across from higher to lower landscape positions also offers information as to areas where bare soils pose more erosional threats and where care should be taken to stabilize soils with vegetation or residues throughout the winter and early spring. Water flow after a rainfall event also illustrates how irrigation water is carried by the field and pasture soil, which may explain variations in water availability and plant growth during irrigation season.

Poorly drained area after compaction by equipment.
Photo by Elizabeth Murphy

Plugging

Soil compaction is the most serious threat to wet soils. As soil pore space fills with water, pressure and weight on the soil surface forces soil particles together more easily. When this happens, soil pore space is reduced and plugged with finer soil particles. This reduces not only the water holding capacity and drainage rate of a soil, but also the diffusion and availability of oxygen and nutrients to plant roots and soil microbes. Compaction is shown to reduce yields due to its effects on plant root growth and the availability of air and water, and yield variations across a field can often be attributable to differences in soil compaction.

The effects of compaction, although mediated by some management techniques, are difficult to reverse. The most obvious culprit of compaction is heavy machinery and tillage implements. High animal traffic can also lead to compacted trails or areas around feed or watering troughs, which reduce available forage. When a soil is moist, the effects of these practices on soil compaction are even more pronounced.

A soil does not have to be completely saturated to be vulnerable to compaction. While clay soils are more vulnerable to compaction, sandy soils can also be susceptible given improper management. Checking the moisture conditions of your soil before cultivating will pay off in the long run. As a general rule, soils are too moist for cultivation if they fail the ribbon test or the ball test. For the ribbon test, push the soil between your thumb and forefinger. If the ribbon breaks before 1-2 inches, there is less risk of compaction, but if you form a ribbon form 4-5 inches, the soil is too wet for cultivation. For another test, form the soil into a 2 inch ball. If the ball holds together when thrown into the air, then it is also too moist for cultivation. Soil moisture probes are also available to help determine when the soil water content is too high for cultivation.

Determining soil moisture by feel is really more of an art than a science. The importance of not cultivating a wet soil cannot be overemphasized. When in doubt, waiting a day or two is your best protection against inadvertently damaging the structure of your soil.

Pugging

Wet soils are also extremely susceptible to pugging by animals. This occurs when animal hooves break through the soil surface, which is less stable when saturated. This trample results in burying or uprooting of pasture plants. Localized compaction also occurs and further comprises pasture productivity. The resulting pugging damage can decrease pasture productivity from 20-80% for the year after the initial damage occurs and up to 20% after pastures appear to have recovered. The unevenness of the pasture surface also reduces forage utilization by animals. Additionally, undesirable weedy species are better able to compete with desired pasture species after pugging damage.

To avoid pugging, it is important to recognize the moisture condition of pasture soils. Under very wet conditions, it may be advisable to keep animals off pastures entirely. Other options include moving electric fences more frequently or increasing the paddock area. Hardening high traffic areas can also improve conditions for animals.

Timing is also an important factor in preventing pasture pugging. The resiliency of a pasture is affected by its vegetative cover, with bare soils being more susceptible to pugging. For this reason, the strength of grass roots, which increases with new pasture growth in the spring, is an important consideration in timing turning animals out in pasture to prevent pugging. Since seasonal variations in rainfall as well as previous year's grazing affect the strength of pasture roots, there is no definitive time to let animals out on pasture. The best rule of thumb is to perform a pull test on your pasture plants. If they are easily uprooted by pulling, then they are probably too fragile for grazing. If grazed too soon, then the resulting bare patches are more susceptible to pugging in the event of spring rains.

Conclusion

Watching the water on your landscape during a long, wet spring offers insights into inherent soil and topographic variability, as well as management challenges and opportunities. Wet pastures and fields are also extremely susceptible to damage from compaction due to animals and machinery, as well as reduced pasture productivity from pugging. Appropriate timing of spring cultivation and grazing due to wet conditions, however, is essential to preserving long-term soil productivity and preventing the necessity of costly remediation efforts.

Additional resources:

http://offices.ext.vt.edu/carroll/programs/anr/forages/pugged_pastures_spring2010.pdf
http://www.extension.umn.edu/distribution/cropsystems/dc3115.html
http://www.extension.iastate.edu/publications/pm1901b.pdf

Calendar

April

12 - Beekeeping Basics: A Quick Overview For Wannabe Beekeepers
An overview of bee biology and pollination priciples, how to obtain honey bees and equipment, when to start a colony, colony health and how to manage hives will also be covered. Douglas County OSU Extension Office, Roseburg, OR. 5:30 PM - 8:00 PM. Contact: 541-672-4461 ***$20***

19 - What to do With My Small Farm
Introductory class designed to help small acreage landowners decide what to do with their properties. Information provided on how to assess water rights, soil classifications and enterprise options. 215 Ringuette St., Grants Pass, OR. 5:30 PM - 8:30 PM For more information, Maud Powell at 541-776-7371 ext. 208. Register by calling 541-476-6613. ***$10***

May

19 - Growing Lamb
Workshop focused on small acreage sheep production. Topics include pasture management, sheep nutritional requirements, small-scale facilities, reproductive health, direct marketing, and Scrapie eradication in Oregon. Long Mountain Farm, Eagle Point, OR. 10:00 AM - 4:00 PM. For more information, contact Elizabeth at 541-776-7371, ext. 208 or elizabeth.murphy@oregonstate.edu ***$30***

June

6 - Dairy Goat & Cheese Processing
Fraga Farms, Sweet Home, OR. 10:00 AM - 4:00 PM. For more information contact 541-766-3556. ***$50***

10 - Raising and Marketing Healthy Lambs
Rain Sheep Lamb, Albany, OR. 2:00 PM - 7:00 PM. For more information contact 541-766-3556. ***$30***

July

8 - Processing Poultry & the 1000 Bird Exemption
Laws and regulations for farm direct slaughter and sales under Oregon HB2872. The A to Z's of poultry processing, sanitation, pathogen management, and regulatory compliance will be covered. Pasture management and niche marketing will also be addressed. Rogue Valley Brambles, Talent, OR. 10:00 AM - 4:00 PM. For information or to register, contact Elizabeth Murphy at 541-776-7371, ext. 208 or elizabeth.murphy@oregonstate.edu. ***$60***

10 - Processing Poultry under Oregon HB 2872
Our Family Farm, Eugene, OR. 1:00 PM - 7:00 PM. For more information contact 541-766-3556. ***$30***

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