

Fall 2011

Oregon Small Farm News

Oregon State University Small Farms Program

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Cover Photo:

Pumpkins produced at Bernet Farms. Photo
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Oregon State University Small Farms Program and Organic Growers Club Sponsor visit by the Generation Organic™ Who's Your Farmer? Tour

Oregon State University will host the 2011 *Generation Organic Who's Your Farmer? Tour* on Thursday, October 6th on the Corvallis campus. The group consists of young farmer owners and the daughters and sons of Organic Valley dairies, America's largest cooperative of organic farmers. The campus appearance is sponsored by the OSU Small Farms Program and the OSU Organic Growers Club.

The "Gen-O" group will appear near the OSU Memorial Union Quad from 11:00 a.m. until 1:00 p.m. on October 6th, 2011. They will be hard to miss with their classic school bus resembling an Organic Valley milk carton. The group will be handing out free individual servings of string cheese and milk plus playing "Wheel of Farming" for prizes. The Gen-O group will also be presenting "Know Your Food, Drive Your Future" from 2:00 to 3:30 p.m. in Agriculture and Life Sciences Building (ALS) 4001.

The Gen-O farmers want more young people to think about farming and about sustainable farming. According to the USDA Census of Agriculture, the average U.S. farmer is 57 years old and aging. In contrast, the average Organic Valley farmer is only 44. These young farmers are helping run their family's organic farms' and creating a foundation for the future of farming. This year's Generation Organic crew includes young farmers hailing from around the country including Coos Bay and Scio, Oregon.

Kelly Mahaffy, of Coos Bay, Oregon says "As the mother of three young girls, it is important to me to leave this planet a better place than we found it. I love knowing there are other young farmers out there farming sustainably, growing a business and raising a family. Through Generation Organic, we connect and share stories with people everywhere who want to know where their food comes from." In 2003, Mahaffy and her husband Pete started River Bend Jerseys, an organic dairy farm stretching more than two miles along the Millacoma River near Coos Bay, Oregon. Today, with 120 Jersey cows on a 200-acre intensive grazing system, she raises cows and kids, and preserves vegetables from her massive garden for the winter.

The Generation Organic Tour will stop at other select college campuses; for a full schedule of events and to follow the tour, visit <http://ov.coop/GenOtour>, on Facebook at www.facebook.com/GenerationOrganic or on Twitter @GenOrganic. ☞

Young Farmer Brings New Life to Family Farm

By: Melissa Fery, Small Farms Program, Oregon State University

Bernet Farms in Scappoose, Oregon has begun a new era thanks to 26 year old, Gary Bernet. Fred Bernet, Gary's grandfather, operated the Bernet farm as a dairy until 1974 and even though most of the land has been leased for over 30 years, the farm has remained a centerpiece for his family.



Gary Bernet gives hay ride tours of the farm.
Photo provided by Melissa Fery

Gary wasn't exactly planning to be a farmer when he graduated from the University of Portland with a marketing degree in 2006. He took a job, learned new skills and put his hard earned degree to work. But, it didn't take long for Gary's goals to shift.

"I was sitting in an office and kept thinking there is so much I could be doing on the farm," says Gary. He needed to be outside, he wanted to restore the family farm, and he could put his marketing background to the ultimate test.

Since no other family members have the desire to farm, Gary's grandparents made him a deal and offered a portion of the land to work with. As a social kind of guy who enjoys events and has a talent for having fun, agri-tourism was a natural fit for Gary's personality and is a major component for the farm business.

A year was spent researching ideas, developing a plan and learning a lot from visiting with experienced farmers, also known as old timers. "You just have to listen and then separate their stubborn habits from the efficient ones and apply what you can to your own situation," says Gary. He also spent 6 weeks participating in *Growing Farms: Successful Whole Farm Management* workshop series offered by the OSU Extension Small Farms program.

"Growing Farms gave me a better grasp of the whole farming picture. It's easy to focus on the parts you want to see, but the course forced me to look at all aspects of a farm business, not just growing a crop."

In October 2010, after several months planning, farming and cleaning up the land, Bernet Farms' pumpkin patch and corn maze opened for

business. Even though the profit margin was slim, Gary considers his first season a success.

With marketing and branding efforts, the 2011 season which began October 1st is bound to be a draw for more families seeking fun on a farm. The Bernet Farm logo can be found nearly everywhere in Scappoose. T-shirts are worn regularly by all of Gary's friends and family around town and free tote bags have been given to customers purchasing at least \$20 at the farm. Unique marketing efforts such as advertisements at the local movie theater, gas station and a meet-and-greet at the Sauerkraut Festival have been new ways to reach out. A Facebook page and website are methods for outreach beyond the local community.



Customers finding their perfect pumpkins.
Photo by Melissa Fery

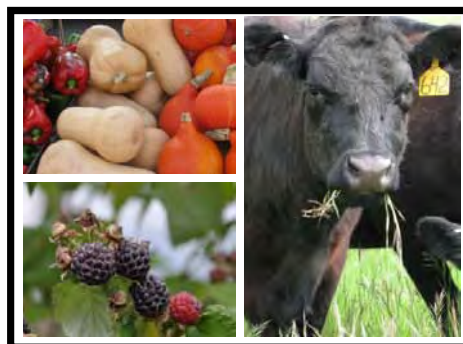
This year, nearly 5 acres are ripe with 35 varieties of pumpkins and gourds and some seasonal produce. Visitors may weave through a 4 acre corn maze which is said to be haunted after dark, enjoy hay rides, a farm animal looking zoo, pumpkin catapulting and even face painting on the weekends. On October 15th which is considered the height of the season will be the 1st annual Pumpkinfest and Pumpkin Run.

Planning different events on the farm is needed to help improve cash flow throughout the year. Bernet Farms will be hosting a wedding next summer, which will be a test run with a large formal event, though Gary has been successful in organizing a horseshoe tournament for over 100 participants. He also harvests hay in the summer and sells it in the winter, has a wholesale market for pumpkins and for now, has a part-time job off farm.

For the month of October however, all efforts are on selling pumpkins, scaring people in the corn maze and

Growing Farms

Successful Whole Farm Management Workshop Series



The OSU Oregon Small Farms team is collaborating with partners to offer Growing Farms: Successful Whole Farm Management workshop series in the Southern Willamette Valley in 2012.

Location: Junction City, Oregon
Dates: Wednesdays, March 7, 14, 21, 28 and April 4, 11
Time: 5:00 to 9:00 p.m.
 Plus a full day Saturday field trip
Cost: \$275 for an individual or \$450 for 2 members of farm team
Contact: 541-766-6750


This six week course is designed to provide beginning specialty crop and livestock farmers with the tools and knowledge to manage both the biological and financial risks of farming. Participants will assess their farm enterprise and gain the ability to develop a whole farm plan. This program targets farmers in their first 5 years of their farm business.

The workshops address these six broad topics:

Dream It: Strategic Planning
Do It: Farm Operations
Grow It: Production
Sell It: Marketing Strategies
Manage It: Farm Finance
Keep It: Managing Risk



generally enjoying the fall season while encouraging others to do the same.

The farm is open Wednesday- Sunday through October 31st from 9 a.m. to dusk. Visit the farm website at <http://www.bernetfarms.com> or find Bernet Farms on Facebook. 

Using Heat Units to Schedule Vegetable Plantings, Predict Harvest Dates and Manage Crops

By: Nick Andrews, Small Farms Program, Oregon State University & Len Coop, Integrated Plant Protection Center, Oregon State University

Temperature controls the development of many organisms that don't have complex thermoregulatory systems. This allows us to predict the development of different organisms by accurately using development or phenology models which are based on the accumulation of heat units (i.e. degree days) during a growing season. These sorts of models have been developed for many plants, insects and plant pathogens.

There are other factors that can affect the development rate of organisms such as moisture, day length and competition. However, simple degree day (DD) models can accurately predict development rates within a few days, especially if some assumptions can be made about other factors affecting development rates, such as the presence of adequate moisture as provided in an irrigated field.

Nearly all seed catalogs report the time to maturity of different vegetable varieties in number of days to maturity. If all vegetables were bred in our region, that could be fairly accurate despite considerable variation in weather from year to year. However, a month in Florida or California provides a lot more DDs than a month in Oregon or Washington. Reported days to maturity can give a relative idea of which varieties take longer to mature, but they normally don't help schedule plantings or harvests with much accuracy.

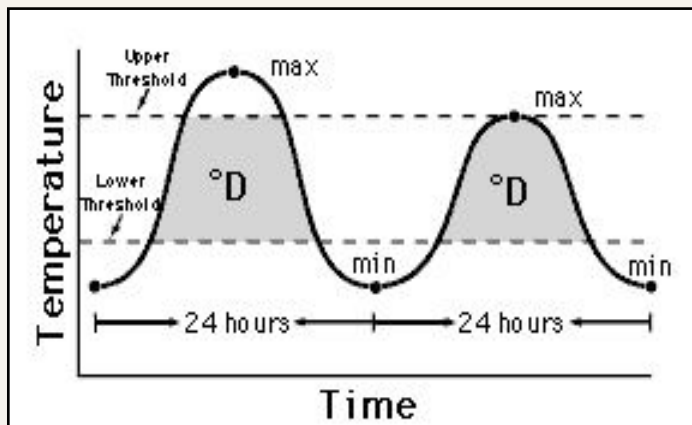


Figure 1. Accumulation of degree days within upper and lower development thresholds using the single sine method. From: <http://www.ipm.ucdavis.edu/WEATHER/ddconcepts.html>.

Many farmers get a rough feel for this after years of experience with a variety, and some farmers and agricultural companies have developed their own DD models for the main varieties they grow. They can use this information to schedule plantings to provide the volume of harvest they want at different times of the year. When inclement

weather interrupts the planting schedule, they can use this information to select different varieties that will get their harvest schedule back on track. As harvest time approaches, they can also use this information to communicate with buyers when their crop is ripening a bit earlier or later than expected. If climate change impacts local weather in the Pacific Northwest, this sort of information will help farmers adapt to years with poor growing conditions and take advantage of years with better growing conditions.

Crops have upper and lower development thresholds outside of which they don't develop physiologically. One of the simplest ways of counting DDs for one day when the crop's lower temperature threshold is known is: $[(T_{max} + T_{min}) / 2] - T_{lower}$. For example, assume the crop's lower threshold is 50°F and upper threshold has not been determined or is very high and therefore not used. On a day with a T_{max} of 90°F and a T_{min} of 40°F, the DDs for that day = $[(90 + 40) / 2] - 50 = 15$. This method of calculation is known as the "Simple average DD method." Since many crops such as corn are only responsive within a range of temperatures defined by the thresholds, substitutions are made; if the daily T_{max} or T_{min} are above or below the thresholds, they are reset to the threshold.

For example, using the same daily temperature values as above, and adding an upper threshold (used for corn) of 86°F and a lower threshold of 50°F, we would reset the Tmax from 90 to 86 and Tmin from 40 to 50 and calculate: $[(86+50)/2]-50 = 18$ growing degree days (GDD). A slightly more accurate method is to calculate the area under the curve between the maximum and minimum thresholds as shown by the shaded area in Fig. 1. Most insect DD models used in Oregon use a version of this known as the “single sine DD method.” Most models use daily maximum and minimum temperatures, but some have been developed using hourly temperatures divided by 24. Some instruments such as “Bioaccumulators” and weather stations with custom software can accumulate DDs with precision to the minute or less.

Unfortunately, the different methods of calculating DDs are NOT interchangeable; thus users of DD models must pay strict attention to the calculation method that was used to develop the model, and to adhere to that method when using the model. So, for example if a model specifies a “single sine method”, then only that method can be trusted to be unbiased.

Temperature thresholds are somewhat complicated to determine, and require independent research to estimate the maximum and minimum temperatures which limit physiological development. However, these temperature thresholds don’t usually vary very much within a crop species or group of

Crop	Lower Development Threshold (°F)
Asparagus	40
Bean, snap	50
Beet	40
Broccoli	40
Carrot	38
Collards	40
Cucumber	55
Eggplant	60
Lettuce	40
Muskmelon	50
Onion	35
Okra	60
Pea	40
Pepper	50
Potato	40
Squash	45
Strawberry	39
Sweet corn	50+
Sweet potato	60
Tomato	50
Watermelon	55

Figure 2. Lower development thresholds for some vegetable crops adapted from Knott's Handbook for Vegetable Growers, 4th edition, pg. 90 (D.M. Maynard and G.J. Hochmuth, 1997). †Sweet corn threshold from: Coop, L. B., Croft, B. A., and R. J. Drapek. 1993. Model of Corn Earworm (*Lepidoptera: Noctuidae*) Development, Damage, and Crop Loss in Sweet Corn. *J. Econ. Entomol.* 86(3): 906-916.

closely related species such as sweet corn or *Brassicas*. Lower development thresholds for many crops are published in Knott's Handbook for Vegetable Growers and the scientific literature. If these thresholds are known for your crop, you can use weather information from your farm or a nearby weather station (see below) to observe how many DD are needed before harvest or other event of interest (i.e. canopy closure or flowering) for your specific varieties. You will have generated a simple DD model for your variety that can be validated and used in subsequent years.

OSU's Integrated Plant Protection Center (IPPC) has a collection of more than 90 DD and hourly-driven plant disease risk and chilling unit models, all pre-configured for individual insects, plants, and plant diseases, plus a generic DD calculator, that are freely available online at <http://uspest.org/wea/>. The models on the website link to a large network of more than 15,000 weather stations across the United States. In Fig. 3 we display an example output from running the Jubilee sweet corn model (reference above) at the website, using May 1, as the planting date over the years 2009-2011, and the AgriMet weather station ARAO located in Aurora, Oregon. This particular model has been run over 2,600 times at the website and has been used for scheduling planting and harvest dates for processed sweet corn.

The sweet corn DD model example in Fig. 3 shows how DDs may be used to improve the scheduling of harvest dates in years with differing temperature regimes. It illustrates how you can begin to develop models for your own needs by careful record keeping of crop development for selected events and then later running a DD calculator that will help you determine the average DD requirements for each event. If funded, a new proposed project (see below) will provide training and instruction on how to do this step-by-step. This online system is widely used in the tree fruit and nut industries to manage pests by estimating phenological events (e. g. egg laying) that can be used to reduce risk and time treatments. From the website (Fig. 4) go to Quick Start then select the crops you are interested in. When you enter your zip code the program automatically selects the closest weather station and produces a graphical display of all the available models that are relevant to your

Date 2011	Date 2010	Date 2009	DDs	Event
5-19	5-16	5-16	104	First emergence from soil
6-12	6-12	5-31	308	5 leaf stage
6-25	6-25	6-9	445	7 leaf stage
7-25	7-24	7-9	883	5 inch tassels
7-30	7-27	7-14	960	10 inch tassels
8-1	7-30	7-17	1005	5% silk emergence
8-4	8-3	7-19	1062	50% silk emergence
8-9	8-7	7-24	1145	95% silk emergence
8-18	8-15	7-29	1288	50% brown silks develop
8-24	8-23	8-4	1412	95% brown silks develop
8-31	9-1	8-12	1539	Fresh market harvest
9-4	9-4	8-16	1597	Processing market harvest


Figure 3. Comparison of dates of key events in the development of sweet corn for 2011, 2010, and 2009, showing the effect of 2 cool years (2010 and 2011) vs. 1 warm year (2009). The warm year predicted fresh market harvest 19-20 days earlier than the cool years.

crops. Currently, this system has about 11 models of interest to vegetable growers including the late blight, early blight, cabbage maggot and Jubilee sweet corn development models. If you know the maximum and minimum thresholds and DD accumulation required for the varieties you grow, you can use the full featured DD calculator at this site: <http://uspest.org/cgi-bin/ddmodel.pl>. In addition to the models hosted by the IPPC, there are some other sources of DD models. For example, Crookham Company (www.crookham.com/)


has DD models for their sweet corn varieties and UC Davis has an extensive collection of DD models (<http://www.ipm.ucdavis.edu/MODELS/index.html>).

We are working with several vegetable growers on a new project proposal to increase the number of development models available to vegetable growers and develop a new interface for vegetable crop scheduling and management. If funded, Jim Myers (OSU Vegetable Breeder) would develop DD models for the varieties he works on, Dan Sullivan (OSU Soil Scientist) would work on a N-mineralization model, Ed Peachey (OSU Weed Scientist) would work on weed development models and Nick Andrews (OSU Small Farms Extension) would work on cover crop development models. Len Coop (IPPC) would lead development of the website and modeling system. The project team would work with growers to help them develop DD models for their own vegetable varieties.

We would also develop a new webpage that would help vegetable growers use these models to plan successive plantings, manage crops and schedule harvests.

We are already working with a group of about 10 local producers on this proposal, but are looking for other interested growers. If you are interested in this project please send your contact details to Nick Andrews (nick.andrews@oregonstate.edu). Your interest may help us secure funding, and if the project is funded, we'll get in touch to let you know how you can participate. 

MyPest Page -
IPM Pest and Plant
Disease Models and
Forecasting



for Agricultural, Pest
Management, and Plant
Biosecurity Decision
Support in the US

Introduction Quick Start Map Index Shortcut Links Degree-day Maps


Introduction:
This website brings together US weather data and plant pest and disease models to serve many decision support needs in agriculture. Currently this site provides over 73 degree-day and 18 hourly weather-driven models serving many IPM, regulatory, and plant biosecurity uses for the full USA, and specializes in IPM needs for the Pacific Northwest.

Weather data and forecasts are currently linked to the models for over 15,000+ US and nearby weather locations. Forecast sources include NWS Digital forecasts in all states, Fox Weather LLC forecasts in OR, WA, ID, W. MT, and CA, and NWS Zone forecasts for all US regions (max-min forecasts).

Funding has been provided by numerous USDA NIFA grants, USDA RMA ipmPIPE grants, NPDN grants, WR-IPM Center and Oregon Statewide IPM funds, and local and regional commodity grants.



MyPest Page -
IPM Pest and Plant
Disease Models and
Forecasting



for Agricultural, Pest
Management, and Plant
Biosecurity Decision
Support in the US

Introduction Quick Start Map Index Shortcut Links Degree-day Maps

First time user? Select one or more **Crops** and enter a **Zipcode** to initialize defaults for your *MyPest Page* of plant disease risk and degree-day models. Then click the "Go" button.

Crop(s):

☐ apple
☐ pear
☐ cherry
☐ peach
☐ grape

☐ caneberries
☐ strawberry
☐ hazelnut
☐ walnut
☐ pecan

☐ nursery
☐ wheat
☐ oats
☐ grains
☐ alfalfa

☐ beans
☐ hop
☐ vegetables
☐ potatoes
☐ corn

☐ sugarbeet
☐ peppermint
☐ sunflower
☐ clover

☐ invasive species
☐ park&yard trees
☐ degree-day calc. only

Zipcode:

Returning user? Go directly to <http://uspest.org/risk/models - MyPest Page>
(only your previous settings will be used)

Figure 4. The MyPest web page (<http://uspest.org/wea/>) provides access to automatic weather stations and degree day models useful for a variety of crops, and a degree day calculator.

Rogue Farm Corps Trains Future Farmers

By: Stu O'Neill, Executive Director, Rogue Farm Corps, www.roguefarmcorps.org

We have all seen the headlines and read the census reports. Less than 1% of the population farms for a living and our farmers are aging. Meanwhile, our farm economy is changing. Local food is all the rage. Farmers markets are opening all over the country. The face of agriculture is changing right before our eyes.

What does the future of agriculture look like? Who are the farmers of the future?

In Oregon's growing sustainable agriculture community the answers to these questions can often be found in the fields and barns working side by side with established farmers. Young people from all over the country and all walks of life are exploring agriculture as a possible career path. On-farm internships have provided an entry point for beginning farmers to learn the tools of the trade.

As anyone who has farmed before knows, you cannot teach farming in a classroom. You have to work on a farm to learn farming.

Interest in on-farm internships has exploded in the past 5 years. Young people are seeking out opportunities to learn from farmers and participate in the new food system. And many of today's established farmers want to give back to their communities and share the knowledge they have accumulated over the years.

Yet this age old model of sharing knowledge and teaching hands-on skills is in jeopardy. Farmers hosting interns in Oregon, California, and Washington have found themselves subject to wage claims and lawsuits for failure to adequately document the terms of their internship programs. The informal nature of most on-farm internship programs puts them in direct violation of these legal protections for workers. Handshake agreements between farmers and interns do not stand up to the law.

The risks associated with these informal on-farm



Photo provided by Rogue Farm Corps

internships sent a chill throughout the sustainable agriculture community and jeopardized the future of these valuable education and training opportunities. Many farmers stepped away from hosting interns all together. Others thought there had to be a better way.

Legal protections for workers are a cornerstone of our democratic society. These protections were won through many long, hard struggles of labor in all sectors of the economy. Historically, agriculture has been one of the worst violators of workers rights and this is not something that our community of farmers is striving to repeat. The intention behind the on-farm internships is to teach the next generation, to transfer skills and knowledge, and to ensure a sustainable agricultural future.

With all this in mind, the legal status of on-farm internships has been a hot topic of discussion. We have seen it presented on at several farming conferences around the West, and in the spring of 2010, Oregon Department of Agriculture (ODA) and the Bureau of Labor & Industry (BOLI) convened a meeting of stakeholders in Salem to discuss the quasi-legal status of on-farm internships in this state. Participants explored numerous options for addressing the legal concerns and allowing for this crucial education and training to continue. At this meeting, Rogue Farm Corps (RFC) emerged as the leading organization

in the state to meet the standards established for legal on-farm internships. RFC was born in the Little Applegate Valley of Southern Oregon. Farmers who shared a commitment to mentoring the next generation of farmers banded together to develop curriculum and refine training opportunities for interns. From these humble beginnings, RFC has grown to include 13 host farms in Jackson and Josephine Counties.



Photo provided by Rogue Farm Corps

RFC's Farms Next Internship Program is a cooperative program combining hands-on training, classroom learning, and farm-based education on a diverse network of family farms in Southern Oregon. Participants in Farms Next live and work full time on a host farm for an entire growing season, receiving ongoing instruction and learning in-depth skills unique to the host farmer's operation.

The hands-on work experience component is tailored to meet the unique needs of each individual host farm. Host farmers are required to offer close supervision and mentoring to promote mastery of the basic skills needed to operate their farm. Interns are exposed to all aspects of the farm operation and develop skills throughout the growing season.

In addition, interns are offered a comprehensive classroom curriculum in skills and topics necessary to succeed as a farmer. These classes occur two to three times per month throughout the growing season and include a tour of each host farm. Through this curriculum, interns are exposed to numerous farming operations and offered instruction in systems that may not be employed on their host farm.

To meet the state and federal criteria for legal internships, RFC initiated conversations with Rogue Community College (RCC) in the fall of 2010

to establish a pilot program in Southern Oregon. Throughout the conversations between RFC and RCC, increasing the educational value of the intern's experience was a paramount concern, as well as meeting all the state and federal criteria for legal internships. In consultation with ODA and BOLI, RFC is close to solidifying a partnership with RCC that will launch in the spring of 2012.

Creating a model for legal on-farm internships will help ensure that the education and training of beginning farmers continues in Oregon. If the pilot program proves successful, RFC is poised to share the model with other communities across the state.

There are other models for beginning farmer education and training happening across the country. Many universities are now offering certificates and hands-on course work in sustainable agriculture. In 2010, Washington State passed legislation creating a pilot program for legal on-farm internships for small farms in two counties that met certain criteria. There is an effort underway to expand the duration and scope of the pilot program to more communities in Washington State. In California, farmers in the central coast have worked with state labor officials to create an official apprenticeship program for beginning farmers.

What seems clear is that in order for the next generation of farmers to learn the tools of the trade, many more of these types of hands-on opportunities are going to have to emerge and take root. Rogue Farm Corps is proud to be a part of this movement. A steady supply of young, able and willing farmers is needed to grow our food. The future of our food system demands it. *✍*

Farm Profile: Fort Vannoy, Grants Pass

By: Shelley Elkovich and Maud Powell, Small Farms Program, Oregon State University

Fort Vannoy Farm in Grants Pass is a great example of how small farms can successfully adapt to current market trends in order to stay relevant and financially viable. Bob Crouse's grandparents moved to Oregon in 1923 and built a small dairy

operation. By the 1940s Bob's father

Walt had grown a solid family farm business, milking about 100 cows and growing most of his own feed. The farm has been in its current location, five miles from downtown Grants Pass, since 1962. An important member of the farming community, Walt was awarded the Lifetime Achievement, Diamond Pioneer Award from Oregon State University and still works on the farm with Bob and Barbara Crouse today.

Over the past decade, however, the dairy industry has become increasingly cutthroat and most small dairies have gone out of business. During 2009 for example, commodity dairy prices reached a historic low, and dairy farmers saw milk prices cut in half from the year before. Five years ago Oregon was home to approximately 330 dairy farms that produced and sold milk. Today there are 280. Bob has faced the challenge of keeping his family farm profitable through an era that was unfriendly to the small dairy.

At its peak, Fort Vannoy's dairy operation consisted of 520 cows. The Crouses also managed 350 acres of pasture that provided forage and hay for their animals. Fifteen years of low milk prices and two years of extremely low prices forced a transition; the Crouses needed to make radical changes in their operation in



An aerial view of Fort Vannoy Farm.
Photo provided by Fort Vannoy Farm

order to keep the farm. About five years ago the Crouses sold their cows and decided to produce and market hay and silage to other ranchers and livestock owners. They also raised a few beef cattle for sale. A year after they stopped milking, they began renting the dairy to their former herdsman Jesus Miramontes, who is now their biggest feed customer. This lease arrangement provides the farm with a consistent income stream while the cows

produce manure fertilizer for the fields. Bob also got some of his pasture certified organic and now sells feed to an organic dairy.

In addition to expanding Fort Vannoy's feed operation, Bob made plans to diversify his farming enterprises. He looked for ways to transform his business model by focusing on niche and direct markets. Last winter, he attended OSU Extension's *Growing Farms* course in order to learn more about vegetable production and marketing opportunities for small farms.

While searching for a higher value vegetable crop, Crouse decided to add pumpkins to his rotation.



Customers hunting for pumpkins in the u-pick pumpkin patch.
Photo provided by Fort Vannoy Farm



An aerial view of the corn maze.
Photo provided by Fort Vannoy Farm

Currently, about eighty percent of his pumpkin crop is sold through a U-pick operation and farm stand; the remainder is sold wholesale. The decision to raise pumpkins has helped shape the current marketing operation: Fort Vannoy transforms into a harvest playground each September and October. Growth in the pumpkin

under vegetable crop production. He plans to double his acreage this winter while building new direct markets through a Community Supported Agriculture program. Bob has taken advantage of the farm's close proximity to an urban area and strong name recognition to build a loyal customer base. Fort Vannoy Farm is a completely different operation from the one Bob's grandparents built eighty-eight years ago. Like other successful small farms, the Crouses have been nimble and strategic in their ability to adapt to changes in the marketplace. *B*



enterprise has led to an agri-tourism venture that includes hayrides to the popular corn maze, pumpkin cannon, a zipline, and the pumpkin patch itself. The farm hosts school tours, birthday parties, and pumpkin patch visits every weekend from the last weekend of September through October. "Agri-tourism is a lot more fun than we anticipated. We watch people come in and we get direct feedback from people visiting the farm. Folks really enjoy visiting a working farm instead of just a pumpkin patch."

The biggest challenge with this transition has been the shift in marketing and visibility. The traditional dairy was low-key from a public outreach perspective. Agri-tourism is a highly visible enterprise, and the Crouses have worked hard to raise the farm's profile. Fort Vannoy Farm now has a Facebook page, advertisements in the local paper and the Rogue Flavor Guide, and has a booth at both the Medford and Grants Pass Growers' Markets. Bob enjoys seeing repeat customers return to the farm for the pumpkin patch every year.

Bob continues to look for new ways to innovate. His future plans include value-added processing, a pending specialty seed crop contract, and expansion of acreage

Save the Date!

Cheese Maker Education Day

January 21, 2012

LaSells Stewart Center • OSU Campus
Corvallis, Oregon



Key Note Speaker Peter Dixon

DAIRY FOODS
CONSULTING
Peter Dixon, M.S.
Artisan Cheesemaker

Location...

The Oregon Cheese Guild's
CHEESE MAKER EDUCATION
DAY will be held at LaSells
Stewart Center on the OSU
Campus in Corvallis, Oregon.

SAVE THE DATE

Oregon Cheese Guild's Cheese Maker Education Day
January 21, 2012

Education Day Topics

- Key Note Event – Cheese Evaluation with Peter Dixon
- Agri-Tourism
- Marketing of Artisan Companies
- HACCP for Milk Production on Farmstead Creameries
- How to Package and Ship Your Cheese
- Insuring Artisan Companies

Registration Information Coming Soon!

For more information contact:

Dr. Lisbeth Goddik | ph: 541.737.8322 | lisbeth.goddik@oregonstate.edu

Johne's Disease: Don't Bring Home More Than You Bargained For

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

Johne's (YO-nee-z) Disease is a contagious, untreatable and fatal disease of ruminants. It is estimated that 68% of the nation's dairy herd and 8% of the beef herd has at least one positive animal; prevalence in the sheep and goat herds is unknown. If you don't have it, you don't want it. If you do have it, it is well worth your time and effort to control it because it is silently eating you out of house and home and your livestock out of their health.

The Disease Agent

This wasting disease is caused by *Mycobacterium avium* subspecies *paratuberculosis* (MAP), a bacterium that needs to live inside ruminant macrophages (infection-fighting cells of the immune system) to reproduce. The organism is quite resistant to drying, heat and cold, so it can survive in feed, soil and water for up to a year, but it can't reproduce outside its host.

The Infection Process

Here is a typical infection scenario: a baby ruminant is infected in utero or ingests an infective dose of MAP within a few months of birth through milk, feed or water contaminated with MAP-infected feces. MAP invades the neonate's ileum (last part of the small intestine) and eventually initiates an inflammatory response by macrophages. Macrophages are unable to clear the infection so more inflammatory cells are called to the scene. MAP keeps multiplying within the macrophages, resulting in more MAP and more inflammation. The bacteria eventually spread to regional lymph nodes and throughout the body to all tissues.

The disease process continues slowly but continually in affected animals for months to years before any signs of illness are observed. As you can imagine, the chronically-inflamed intestine is thickened and irritated and becomes less able to digest and absorb nutrients. Even sub-clinically affected animals require more nutrients just for maintenance and they are performing sub-optimally in the areas of fiber, milk and meat

production and reproduction.

Sadly, clinically affected and test-positive individuals are usually the tip of the iceberg when it comes to the prevalence of Johne's Disease in a herd. Infected animals shed MAP into the environment and serve as sources of infection for other animals for months if not years, even while appearing healthy. Infected animals shed MAP into milk, colostrum and feces and can even transmit to fetuses across the placenta. Clinically ill animals are usually very heavy shedders.

Signs of Illness

Clinical signs of Johne's Disease are often precipitated by a stressor such as birthing or transportation. In cattle, the main signs of clinical infection are weight loss and profuse diarrhea. In goats and sheep, the usual sign is significant weight loss despite a good appetite; diarrhea is not as common in goats as in cattle. If you have a ruminant that is at least 18 months old, is thin and doesn't respond to better nutrition and deworming, you may have just met Johne's Disease.

Diagnosis

If you have a thin animal in your herd unresponsive to treatment and it dies, is culled or euthanized, have a veterinarian perform a necropsy on it. Samples can be taken from the ileum and regional lymph nodes to check for Johne's Disease. This is often how a producer first learns the disease is present in a herd

Certainly other diseases can be responsible for weight loss in ruminants with or without diarrhea. Dental disease, cancer, malnutrition, toxins, scrapie, B.V.D.,



The microscopic view of the disease agent.
<http://www.tn.gov/agriculture/regulatory/johnes.shtml>

C.L., C.A.E. and other infectious diseases could be to blame. After a thorough examination of a clinically ill animal, a veterinarian will recommend specific laboratory tests to rule in or out other diseases.

Testing for Johne's Disease involves looking for the organism in manure, tissues, milk, soil, water, feed, etc. or animal antibodies produced in response to the disease. Culturing (growing) MAP from fecal, tissue or environmental samples can be a very slow process and often misses early cases of the disease; however, using pooled or targeted cultures is economical and often used initially to detect the presence of MAP in a herd or the effectiveness of eradication efforts. DNA probe tests are another way to find the organism. This test looks for MAP DNA in samples, so it is much quicker than culturing the organism. Antibody tests include the ELISA and AGID options. All tests can be negative in early stages of the disease, so retesting is a crucial aspect of diagnosing, controlling and managing this disease.

ELISA testing on blood or milk samples is a good low-cost option for whole-herd screening. Results are reported as an antibody titer levels — the higher the number, the greater the certainty an animal is infected and shedding. In sheep and goats, antibodies from C.L. (contagious abscesses) can cross-react with some Johne's Disease ELISA tests and give false-positive readings, so your veterinarian might recommend other tests be used in herds with C.L. or C.L. vaccination programs.

The AGID blood antibody test tends to be used to diagnose the disease in individual sick animals. The results are reported as positive, negative or suspect. The type of test to use will depend on the likelihood



Jersey cow with Johne's Disease.
Source: The University of Wisconsin-
Madison School of Veterinary Medicine,
www.johnes.org

of your herd's infection status, your goals and your veterinarian's recommendations. Be aware that if a female tests positive, it is likely her dam, siblings and offspring are or will become positive, too.

Prevention and Control

Here's a list of what you can do to reduce the entry or spread of MAP in your herd:

- Do not feed animals on the ground
- Only feed colostrum and milk from negative animals (or milk replacer or pasteurized milk); do not pool colostrum from animals with unknown MAP status
- Remove newborns from positive dams immediately and hand raise at a MAP-free location
- Test all animals over 18 months old; separate positive and negative animals and their feed and water sources; have MAP-positive and -negative dams give birth in separate areas
- Re-test negative animals at least annually
- Wean youngstock early to minimize length of contact with adults' manure
- Rotate pastures to prevent overgrazing and minimize animals' contact with manure
- Rest pastures as long as possible before re-entry
- Do not graze on known contaminated pastures or fields where MAP-infected manure has been spread
- Till contaminated pastures and expose to sun and as many freezing/drying cycles at possible before re-use
- Assess individuals' body condition scores often and investigate cases of weight loss
- Do not co-house ruminants with other ruminants of unknown MAP status
- Do not use milk or colostrum of unknown MAP status to feed youngstock
- Do not share or allow or access to water downstream from an MAP-positive farm

For Johne's Disease prevention and control: Feed milk replacer or pasteurize milk at 145° F for 30 minutes stirring continually or 162° F for 15 seconds stirring continually. Feed colostrum from known negative animals.

- Remove manure from housing ASAP and prevent runoff into water sources
- Do not have too many animals for your acreage or facilities
- Provide adequate amounts of a balanced diet
- Consider all manure infective; clean and sanitize the environment continually, including udders
- Wash tools and equipment with soap and water and disinfect with a tuberculocidal product
- Fastest elimination will come from testing all animals over 18 months old and culling all positive animals and their most recent offspring.

A vaccine is not available in the U.S. for Johne's Disease prevention, so producers have to rely on management practices to prevent or eliminate this scourge from their herd. ***This can't be stated strongly enough: only add animals to your herd that have tested negative and are from negative herds.*** For Johne's Disease, a herd's status is even more important than an individual's status; a negative animal from a herd with positive animals may be harboring the disease and convert to positive in the future. Quarantine all herd additions for at least three months and re-test before letting them join the herd.

MAP is spread through fecal-oral routes, so manure management is key to controlling and preventing Johne's Disease. ***Your goal is to minimize and delay the dose of MAP ingested by youngstock.*** Work with your veterinarian to develop a risk assessment and Johne's management plan for your herd. As a nice bonus, those who have had to develop a Johne's Management Plan often observe a reduction in other sanitation-related diseases such as coccidiosis and mastitis; feed bills are often significantly reduced as well.

The Bottom Line

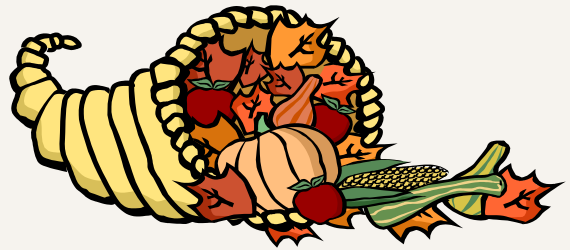
Do not take the "ostrich approach" to Johne's Disease and decide not to test because you don't want to know the answer. If you want to stay in the livestock business, eventually you will HAVE to test and the delay in diagnosis will cost you many more animals' lives and a lot more money and effort. To control Johne's Disease in a nutshell:

- Check your herd for MAP
- Identify and remove positive animals
- Target farm sanitation, especially manure management
- Keep excellent records for decision making

For More Information

www.johnes.org 

57th ANNUAL NORTH WILLAMETTE HORTICULTURE SOCIETY MEETING



***Jan. 10th ~ Organic Crops Section
Jan. 11th ~ Vegetable Section
Jan. 12th ~ Berry Section***

Clackamas County Fairgrounds
694 NE 4th Ave
Canby, Oregon

*Program & registration information
will be available in November at the
OSU North Willamette Research &
Extension Center Website:
<http://oregonstate.edu/dept/NWREC/Events.php>*

Farm Production Practices for Safe Foods: Good Agricultural Practices (GAPs)

November 7th, 2011

Sheraton Portland Airport Hotel, 8235 NE Airport Way, Portland, OR 97220

Please visit our website for registration information: <http://foodsafety.wsu.edu/ag/index.html>

Many growers seek information about food safety and good agricultural practices (GAPs). Food safety management using GAPs can be utilized by growers to protect their businesses, broaden marketing opportunities and prepare for regulatory impacts of the Food Safety Modernization Act. Understanding scientific principles of produce food safety risks and control measures using GAPs can assist growers in implementing successful GAPs programs in their operations.

WSU offers a three-part workshop series to introduce, discuss and implement GAPs food safety principles. The goal of the workshop series is to assist growers with GAPs assessment, adoption of food safety practices and preparation for third-party certification.

Session I provides science-based information from a multi-disciplinary group of scientists and extension faculty. Standard Session I workshops will be offered in 2012 (January-February).

On November 7, 2011 an expanded Session I workshop will be offered. This workshop focuses on providing current research-based GAPs information from scientists throughout the United States. Producers and food industry professionals are encouraged to capture this opportunity to hear nationally-recognized speakers and reserve seats in follow-up Sessions II and III.

Session II (offered in March 2011) provides opportunities to discuss GAPs implementation and challenges with WSU faculty and other growers. Participants are encouraged to assess their farms and food safety practices prior to the session. Opportunities to work on GAPs documentation will be offered in Sessions II and III. Session III (offered during the 2012 growing season) will also provide opportunities for producers to observe a GAPs third-party certification process.

OSU Cheese Maker in Residence... **Sebastien Roustel**

To Pasteurize or Not To Pasteurize: The Great Raw Milk Cheese Debate, a French Perspective

...seminar followed by sampling of select cheeses

November 3, 2011 • 7:00 - 9:00 pm

Portland Marriott Downtown Waterfront
1401 SW Naito Parkway • Portland, Oregon

Seminar Registration

There is no fee to attend this seminar however pre-registration is required. You may register online at http://oregonstate.edu/dept/foodsci/cmr_seminar.htm or by phone: 1-800-823-2357.

In lieu of a registration fee a suggested \$50 donation to the Food Science & Technology General Scholarship fund is encouraged and welcomed. To learn more about how to contribute to the Food Science & Technology general scholarship fund please contact:

Oregon State UNIVERSITY | OSU Foundation | Give to the Food Science Scholarship Fund

or Dr. Lisbeth Goddik | lisbeth.goddik@oregonstate.edu | 541.737.8322

Need More Information?

Registration Information

Debby Yacas, ph: 541.737.6483
or toll-free: 800.823.2357
deborah.yacas@oregonstate.edu

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U.S. Fish and Wildlife Service Finds Endangered Species Act Protection for Franklin's Bumble Bee May Be Warranted

Listing the Franklin's bumble bee under the Endangered Species Act may be warranted according to the U.S. Fish and Wildlife Service. The agency is seeking more information about its status and threats before making a final determination on whether or not to include it on the Endangered Species List. With the smallest distribution of any bumble bee in North America and perhaps the world, the Franklin's bumble bee has been found in an area of about 190 miles north-south and 70 miles east-west in Douglas, Jackson, and Josephine counties in southwestern Oregon and in Siskiyou and Trinity counties in northern California. Some of its known range is on federal lands managed by the Bureau of Land Management and U.S. Forest Service and it also inhabits agricultural and urban areas.

The last documented sighting of the Franklin's bumble bee was in 2006. For the last 12 years, the Fish and Wildlife Service has provided financial and technical support for Franklin's bumble bee research. Dr. Robbin Thorp at University of California at Davis has conducted annual surveys. Sightings declined from a high of 94 individuals in 1998 to 20 in 1999, and continued on a downward trend until 20 were found again in 2002, and then downward again to zero until 2006, when a single worker was observed.

Also in 2006, a separate BLM survey of 16 sites that were believed to provide optimal habitat for Franklin's bumble bee was undertaken, but no bees were found. While some postulate that the species may now be extinct, conclusive evidence is not available.

The Fish and Wildlife Service was petitioned to list the Franklin's bumble bee under the Endangered Species Act as endangered and to designate critical habitat by Dr. Thorp and the Xerces Society for Invertebrate Conservation last year. The petitioners hypothesize that disease introduced through the use of commercially produced bumble bees for agricultural pollination is the primary reason for the decline. The petition cited a wide range of potential threats, including habitat alteration, the inadequacy of regulatory protections, pesticides, population dynamics, climate change, and competition from other bees. Much of what is known is general and the degree to which these are threats to Franklin's bumble bees in particular is unknown at this time.

Bumble bees pollinate crops grown in greenhouses and open fields, including tomatoes, peppers, cucumbers, eggplant, and different berries. They also are used commercially for pollinating flowering plants. In the wild, they play an important role in the food chain; for example, some of the plants they pollinate produce berries that serve as a food source for other wildlife such as birds and bears.

The Fish and Wildlife Service is including graphics on its website, www.fws.gov/oregonfwo, to help with Franklin's bumble bee identification. Some distinguishing characteristics of the Franklin's bumble bee include:

- Extended yellow coloration on their middle, between the head and abdomen, which extends well beyond the wing bases and forms an inverted U-shape around the central patch of black;
- A lack of yellow on the abdomen;
- A predominantly black face with yellow on the top of the head; and
- White coloration at the tip of the abdomen.

Other bumble bees with similar coloration in the range of the Franklin's bumble bee have the yellow coloration extending back to the wing bases or only slightly beyond, and usually have one or more bands of yellow either on the middle or slightly behind the middle of the abdomen. Females of most species have yellow pubescence—fine hair-like structures on the face—in contrast to black on the Franklin's bumble bee. Females of the western bumble bee (*Bombus occidentalis*) and *B. californicus* that have black pubescence on the face also have the same coloration on the vertex—the top or crown of the head—in contrast to the yellow pubescence on the vertex in the Franklin's bumble bee. Females of *B. californicus* have a long face in contrast to the round face of the Franklin's bumble bee and the western bumble bee.

Information on the Franklin's bumble bee may be provided to: Paul Henson, State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE 98th Ave., Suite 100, Portland, OR 97266; (503)– 231 –6179; fax (503) 231–6195.

Calendar

October

8 - Small Scale Poultry Production

See possible shelter designs that create practical, low-cost, lightweight structures that house pastured poultry safely and effectively. The presenters will also be available to answer general poultry production and management questions. Klickitat County Fairgrounds, Goldendale, WA. 9:00 AM - 1:00 PM. For more information or to pre-register email Michelle at Michelle@Gorgegrown.com or 541-490-6420. **Free**

22 - Pesticide Round-Up

Agricultural producers will have a second chance to dispose of their old and unusable pesticides. Producers will need to call Clean Harbors Environmental Service at 800-819-5912 to register. Clean and residue free, triple rinsed plastic containers up to 55-gallon capacity will be accepted for recycling at no charge. Contact Clean Harbors Environmental Service for additional information. Clean Harbors, 12402 SE Jennifer St, STE 160, Clackamas, OR. For more information, Alan Ranf at 1-800-819-5912. **Free**

November

3 - To Pasteurize or Not to Pasteurize

A French perspective on the great cheese debate. Portland, OR. For more information contact Lisbeth Goddik

at lisbeth.goddik@oregonstate.edu or 541-737-8322. \$

11 & 16 - Successful Farm Marketing on a Shoestring

This two-part class will help you develop and implement a successful marketing program for your farm, or build on your current efforts, without investing a lot of time or money. Jackson Co. OSU Research Center Library. 5:00 PM - 8:00 PM. For more information or to register contact Maud Powell maud.powell@oregonstate.edu 541-776-7371 ext. 208 **\$25.00**

March

7 - Growing Farms: Successful Whole Farm Management Workshop Series

This six-part course is designed to provide beginning specialty crop and livestock farmers with the tools and knowledge to manage both the biological and financial risks of farming. Participants will assess their farm enterprise and gain the ability to develop a whole farm plan. This program targets farmers in their first 5 years of their farm business. 5:00 PM - 9:00 PM. Junction City, OR. For more information contact 541-766-6750. **\$275 single or \$450 farm team of two.**

Visit <http://smallfarms.oregonstate.edu> 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