Fall 2014

Oregon Small Farm News

Oregon State University Small Farms Program

In This Issue

Oregon State University OSU Extension Service

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Cover Photo:
The 2014
Commemorative Farmers
Market Stamps

Postal Service Issues a Stamp to Commemorate Farmers Markets

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

During 2013, I had the pleasure to work with the U.S. Postal Service as the anonymous reviewer of

their proposed farmers market postal stamp and its accompanying description and verso (brief description). The stamps were issued during August as part of National Farmers Market Week. With the project completed, I no longer need to remain anonymous. As reviewer and not the artist or writer, my input leaned toward keeping the project about food and farmers.

The four stamps are independent segments of the entire artwork showing the bounty of food and flowers symbolizing farmers markets. The stamps are intended to stand alone as art and are "forever" stamps, meaning they are always the correct postage. Text on the back of the 20-stamp sheet describes the appeal of Farmers Markets:

"Farmers markets are an old idea that's new again. Markets were once the main way Americans shopped. As towns and cities grew in the 19th century, farms were pushed farther from the population hubs, and new distribution systems and permanent in-town shops increasingly became the middlemen between consumers and farmers. However, in 1976 Congress passed the Farmer-to-Consumer Direct Marketing Act, and the number of markets has soared once more.

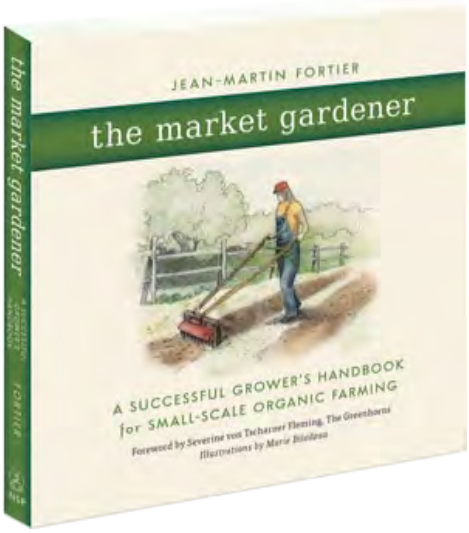
"Farmers markets flourish in every U.S. state and territory. Some markets thrive in permanent locations that operate year round; others are open only once a week during the harvest season. There are markets that sell just produce and meats; others also offer seafood, breads, prepared foods, or dairy products. Markets might include locally sourced honey or artisan crafts like soaps and candles. Live plants or cut flowers brighten many markets, and some markets feature live music or children's activities, voter-registration drives, or local master gardeners offering advice. There are almost as many different combinations of goods and activities as there are markets.

"Considered by many to be the new town square, farmers markets offer, as they did in the past, a gathering place for diverse groups of neighbors to meet and mingle and to share news, recipes, and stories-in short, to create a new sense of community."

The stamps plus framed enlargements, note cards, first day of issue stamps, and more may be purchased at: https://store.usps.com/store/browse/productDetailSingleSku.jsp?productId=S_472504&categoryId=forever-stamps

Master of Micro-Scale, Biologically Intensive Agriculture to Speak at 2015 Small Farms Conference

Jean-Martin Fortier will be a featured speaker at the 2015 OSU Small Farms Conference on February 28th. Jean-Martin will be presenting an indepth, full day workshop on his approach to micro-scale, biologically intensive agriculture.



Jean-Martin Fortier and his wife Maude-Hélène Desroches are the founders of Les Jardins de la Grelinette, near Quebec. The farm is recognized internationally for its high productivity and profitability using low-tech, high-yield methods of production. A leading proponent of biologically intensive cropping systems, Jean-Martin has more than a decade's worth of experience in organic farming.

Jean-Martin is a graduate of the McGill School of Environment and is a passionate advocate for strengthening local food systems, notably working with Montréal's Équiterre to help create Canada's most important network of CSA farms. He has also facilitated more than fifty workshops and conferences in Canada, France, Belgium and the United-States promoting the idea of micro-scale farming.

Jean-Martin has written articles about his work for popular magazines such as Canadian Organic Grower, La Terre de Chez Nous, and Growing for Market. He also contributes as an equipment and tool advisor for companies such as Johnny's Selected Seeds and Dubois Agro-inovation. His first book, The Market Gardener, published in French and English, has sold more than 30,000 copies since its release in the fall of 2012.

Jean-Martin lives on his 1.5 acre farm in St-Armand Québec, with his wife Maude-Hélène Desroches and their two children Forest and Rose. More information about Jean-Martin and his approach to farming is here: http://www.themarketgardener.com

Grow the Coast

Saturday, November 1, 8-4:30pm, Seaside Conference Center, Seaside

Cost: $30/person (two for $50) if register by October 26; after Oct. 26, $45/person (two for $80) Online registration closes October 30th. Tickets available at the door (cash or check). Scholarships available for youth and beginning farmers or farmworkers (less than 10 years running a farm). To apply, email northcoastgrown@foodrootsnw.org or call 503-815-2800.

Learn more and register at www.northcoastfoodweb.org/growthecoast

Central Oregon Food Summit

Saturday, October 25, 8-4pm, Bend Armory, Bend

Cost: $20 per person, includes a local food lunch. Seats are limited and scholarships are available. Tabling opportunities are available for $50 and include admittance for one and lunch.

Learn more and register at http://www.hdffa.org/food-summit/.

Mark Your Calendar!

For the 2015 Oregon Small Farm Conference

February 28th

On the Oregon State University Campus

This year's conference will feature several intensive sessions including:

John-Martin Fortier will be present his workshop *Six Figure Farming for Small Plots*

Lunch from local farms—the best conference lunch around

Registration will open be open by Jan. 1, 2015 at http://smallfarms.oregonstate.edu

For updates on the Small Farms Conference and other up to the minute news, like us on Facebook--https://www.facebook.com/pages/Oregon-State-University-Small-Farms-Program/174466132601811?sk=wall

Cover Crop Establishment in Western Oregon Vegetables

By: Nick Andrews, Small Farms Program, Oregon State University

This article supplements an archived article in the fall 2010 issue of *Oregon Small Farm News*: http://smallfarms.oregonstate.edu/sfn/f10wintercovercrops. That article discusses cover crop species, time of seeding and includes a table of cover crop seeding rates. Here I discuss options for preparing a cover crop seedbed and seeding methods for relay seeded cover crops intercropped into an existing vegetable planting, or seeded after the vegetable crop is harvested. I explain the importance of adequate soil moisture and rapid early establishment, and provide links to additional information on no-till or reduced tillage strategies.

Field preparation

Tillage and cultivation has pros and cons. It controls weeds, loosens soil and breaks up clods, can be used to create fine seedbeds, and can help dry and warm soil in the spring. On the other hand, it breaks soil aggregates apart, disturbs soil biology and compacts soil over the long term. When tillage is necessary, try to avoid tilling soil that is too dry (i.e. dusty) or too wet (i.e. smears or sticks excessively to equipment). Soil aggregates can be badly damaged and soil is easily compacted when soil is tilled too wet. When soil is tilled too dry, it often doesn't work up well, and fine aggregates can be turned to dust and become prone to wind erosion. If soil is too dry, pre-irrigation before seedbed preparation can make cultivation more effective. Late summer and fall is usually the best time to subsoil in order to break up hard pans created by previous tillage and heavy traffic.

Cover crop species are relatively well adapted to poor germination conditions. Higher seeding rates (i.e. 1.5 – 2x) can often compensate for a rough seedbed. Cover crops often emerge well after little or no tillage, especially when the previous cash crop leaves only modest amounts of plant material in the field. However, a nice fine cover crop seedbed can increase percent establishment and weed suppression, and ensure high cover crop biomass at incorporation.

Crops leaving modest amounts of plant material after harvest, like summer Brassicas, salad greens and cucurbits can be incorporated with a disc. Usually little additional field preparation is needed before seeding.

Sweet corn and some other high residue crops like small grains can provide effective soil cover and wildlife habitat over the winter. If you have a thick canopy left after harvest, consider leaving it in place over winter. If you want to seed a legume cover crop for nitrogen (N) after a sweet corn crop, mow the stalks before they dry down too much to decompose easily. Then cultivate with a heavy cover crop disc and allow the residue to decompose for a few weeks. Then disc lightly again before cover crop seeding. Relay seeding into late sweet corn is also worth considering.

Relay seeding

When cash crops are harvested through October, it becomes increasingly difficult to establish a cover crop that will grow enough to protect bare soil from winter rains. Consider relay seeding into late brassicas, tomatoes, peppers, eggplant, winter squash, pumpkins, sweet corn, etc.. Relay seeding normally reduces fall cultivation, and can therefore protect soil health.

Relay seeded cover crops are broadcast over young, well established cash crops. Relay covers must be seeded early enough so that light reaches the soil surface for long enough to allow the cover crop to establish well. The cover crop seedlings have to survive shading during late summer and the traffic and disturbance of harvest. SARE's publication Managing Cover Crops Profitably reports that on a scale of 1-4 for shade tolerance, annual ryegrass, wheat, and crimson and red clover rate 3 (very good), barley, wheat, brassicas and hairy vetch rate 2 (good). Have a look at the information packed cover crop tables on pages 66-72 of the book.

The best timing for relay seeding varies. One rule of thumb is at the last weed cultivation. This can sometimes be a bit too late for good cover crop establishment if the cash crop subsequently creates a thick, dark canopy (i.e. winter squash). I currently try

to relay seed when light will still reach the soil surface for 4-5 weeks. Cover crops can be seeded into the alleyways, and not the crop row, between some crops with wide row spacing (i.e. trellised tomatoes).

Small seeded cover crops like clover seem to be particularly useful for relay seeding because they establish well with little to no incorporation. Relay seed immediately after a heavy weed cultivation. Larger seeded cover crops can be seeded just before a light weed cultivation, but avoid incorporating them too deeply.

Fig 1. Scott Latham (Sauvie Island Organics) and Kristin Pool (OSU graduate student) inspect a cereal rye and common vetch cover crop that will likely supply close to 100 lbs plant-available nitrogen per acre to the following crop. Scott is estimating canopy height and holding a sampling frame to test for cover crop PAN with the OSU calculator.
Photos provided by Nick Andrews

Make sure the field is irrigated frequently enough after seeding for the cover crop to establish. Young cover crop seedlings are more susceptible to drought stress in mid-summer than established summer vegetables.

I normally increase cover crop seeding rates at least 1.5x when relay seeding.

Post-harvest seeding

When summer vegetable harvest is over before early October, there is usually time to get a cover crop well established in the fall. If you have a lot of nitrogen left over in your soil (i.e. more than 20-30 ppm nitrate-nitrogen in 12" deep fall soil sample), it is helpful to plant a cover crop that will put on 8-12" of shoot growth before heavy fall rains begin. Cereals are especially effective at scavenging nitrogen and preventing excessive nitrates from leaching into groundwater. For more information see: Nitrogen Scavenging: Using Cover Crops to Reduce Nitrate Leaching in Western Oregon (EM 8728). If nitrogen scavenging is your primary goal, consider using a seed mixture that is predominantly cereal or grass. Some legume in the mix will help prevent nitrogen immobilization the following spring if you plan to let your cover crop grow to late the vegetative stage (i.e. flowering or just before flowering). In our experience, 15-20% legume biomass when the cover crop is terminated can prevent nitrogen immobilization. Young cereals and grasses that are terminated when tillering (Zadock's growth stages 20-30) are unlikely to immobilize nitrogen. As they mature through jointing and stem extension to heading (Zadock's growth stages 30-60), the risk of nitrogen immobilization increases, and legumes are especially helpful in preventing this.

If you hope to optimize biological nitrogen fixation for the following vegetable crop, use legume cover crops to supply 40-100+ lbs/ac plant-available nitrogen. Crimson clover or vetches (i.e. common vetch) perform well on their own or in mixtures with cereals. I normally use about the same legume seeding rate in mixtures as in single species stands, and reduce cereal seed rates to 20-40% of the solo rate.

Brennan and Leap (2014) compared using a Sutton seed drill (6" row spacing, ¾" depth) to broadcasting for cereal rye, purple vetch and common vetch establishment followed by:

- Rototiller: John Deer model 680 set to ≈4" depth, 1.6 mph tractor speed and 2000 rpm,
- Perfecta II field cultivator: adjusted to ≈6" depth to minimize soil dragging by spike tooth gang, rolling basket on aggressive setting, 3 mph tractor speed,

Figure 2. Perfecta field cultivator as used in Brennan and Leap research: http://www.umequip.com/tillage/seedbed/perfecta/

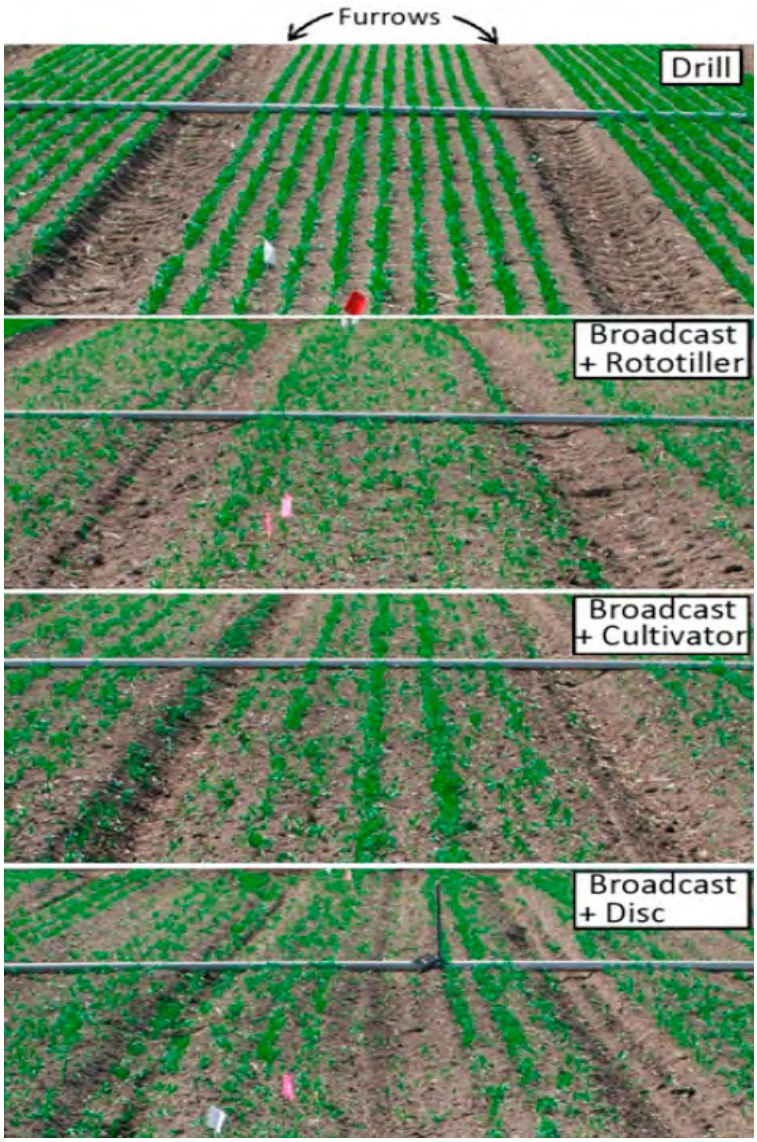


Figure 3. Cover crop establishment 13 days after seeding with a drill compared to broadcast + rototiller, broadcast + Perfecta field cultivator and broadcast + disc. *Brennan and Leap, 2014.*

- Disc: Land Pride model DH25, ≈5" depth with front disc gangs at 14° (second most aggressive setting) and rear disc gangs at 7° (least aggressive setting), 3.9 mph tractor speed.

The seed drill resulted in the most even and dense cover crop stands. Of the broadcast treatments, the rototiller provided the most dense and uniform stand. Brennan and Leap recommended increasing seeding rates by 50-100% when broadcasting compared to drilling seed. Most seedlings emerged from about ¾" below the soil surface in the drilled cover crop, 1½ - 2½" in the rototilled cover crop, ¾" in the Perfecta cultivated plots, and ¾ - 1½" in the disced cover crop.

Brennan and Leap conducted this research in loamy sand soil. They explain that "the rototiller would be less suitable than the (Perfecta) cultivator for small-seeded cover crops such as mustards (or clovers) that are less tolerant to deeper planting depths than cereal grains and grain legumes (i.e. vetches and peas) used as cover crops. Deeper seed placement by the rototiller would likely be more problematic in clay-textured soils that are known to inhibit emergence from deeper depths." (comments in parentheses are mine). We regularly use a ring roller to successfully incorporate cover crops after broadcasting in silt loam and silty clay loam soils, but have not compared these stands to drilled cover crops.

Well managed cover crops can reduce weed problems. However some weeds can set seed before the cover is terminated. The critical period for weed suppression in the cover crop is the first 30 days of establishment [1]. Cover crops with a dense canopy early in the season (i.e. cereal rye and mustards) intercept more light and compete well with weed seedlings. Table 1 lists key factors affecting cover crop weed suppression.

Water and irrigation

Many growers wait until fall rains begin to plant cover crops. Sometimes this works out, but if irrigation is available, it often ensures quick establishment, better weed control, nitrogen scavenging, and eventual spring biomass.

Average rainfall over the last 10 years in Portland was 1.2" in September, 3.1" in October and 5.8" in November (data from Western Regional Climate Center). The worst case scenario for dryland cover crops is rain at seeding followed by a hot and dry spell. The cover crop will germinate and then die. Another risk is that sufficient rains don't arrive until late October or November. This is too late for cover crops to provide enough cover to prevent erosion and protect soil aggregates from the impact of raindrops over the winter. Nitrogen scavenging is also poor, and some weed species are better adapted to sporadic soil moisture than most cover crops, so weed management by the cover crop could be compromised.

FACTOR	EFFECT ON WEED SUPPRESSION IN THE COVER CROP
Cover crop variety or mixture	Varieties and mixtures that rapidly develop a canopy are more weed suppressive.
Seeding rate	Up to a certain point, higher seeding rates are more weed suppressive than lower seeding rates.
Planting date	Earlier fall planting dates allow winter cover crops to germinate quickly and rapidly cover the soil and improve weed suppression.
Row spacing	Narrow spacing (6" between rows) minimizes competition between cover crop plants and maximizes weed suppression.
Irrigation	Irrigation normally hastens cover crop germination and early canopy development and can increase weed suppression.
Planting method	Drilling versus broadcasting a cover crop results in more uniform planting depth, even plant spacing, and an even stand that is more weed suppressive.

Table 1. Effect of selected factors on weed suppression during cover crop production *(2011, Brennan, Daugovish, Fennimore and Smith in UC/ANR Publication 3517)*.

If your soil is moist after irrigating the summer vegetable, you might be successful drilling the cover crop seed deep into moisture and waiting for fall rain. I recommend irrigating your fall cover crops as needed because the benefits are probably worth the cost of irrigation. Cost estimates from the OSU Organic Fertilizer and Cover Crop Calculator indicate that a cover crop might cost about $140 per acre to manage, including seed, labor, fuel and equipment depreciation. If two irrigations cost about $35/ac including labor to set the lines and electricity, the cost of irrigation is only 25% of the total cost. Considering the benefits of good cover crop canopy cover and biomass going into the winter, I think this is good value.

Some cover crops require little to no irrigation to establish well. Growers report successfully establishing Sudex (Sorghum x Sudan grass hybrid) and buckwheat in the summer in W Oregon with no irrigation. Their fields were generally moist after growing vegetables, but the cover crop wasn't irrigated. On a scale of 1-4 for drought tolerance, SARE's Managing Cover Crops Profitably claims that barley, cereal rye and forage radish rate 3 (very good), hairy vetch rates 2 (good), and crimson clover rates 1 (fair).

No-till and reduced till cover crops

If you are interested in reduced or no-till cover crops, be sure to selects cover crop species that will flower early enough in the spring so you can terminate them with rolling and crimping or flail mowing. Researchers at Washington State University Extension are studying organic reduced tillage systems west of the Cascades. This video and eOrganic article discuss some of their work:

- Video: http://smallfarms.wsu.edu/soils-compost/research/organicnotill.html
- Article: http://www.extension.org/pages/68283/adoption-potential-and-perceptions-of-reduced-tillage-among-organic-farmers-in-the-maritime-pacific-#.VB-VoRAXPfU

Resources:

Brennan, E.B. and J.E. Leap (2014). A Comparison of Drill and Broadcast Methods for Establishing Cover Crops on Beds. HortScience, 49(4): 441-447. Available at: https://www.researchgate.net/publication/261135752_A_comparison_of_drill_and_broadcast_methods_for_establishing_cover_crops_on_beds

Cover Cropping for Vegetable Production: A Grower's Handbook (2011). University of California Ag and Natural Resources Publication 3517: http://anrcatalog.ucdavis.edu/items/3517.aspx

Managing Cover Crops Profitably: http://www.sare.org/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition

New USDA Local Food Directories announced!

The USDA has just announced the launch of three new online Local Food Directories, including a Community Supported Agriculture Enterprise Directory, Food Hub Directory, and On-Farm Market Directory.

The Community-Supported Agriculture (CSA) Enterprise Directory will list farms or farm networks that offer delivery of locally-grown products; the Food Hub Directory will provide information on businesses or organizations that can organize the marketing of products to multiple buyers from multiple producers; and the On-Farm Market Directory will list farms with on-premise sales.

Like the Farmers Market Directory, there is no cost to be listed in any of the three new USDA directories and it is easy and quick to update and keep your information (e.g., new hours, new products) fresh.

USDA is currently requesting that managers and owners of local food entities enter their business information in the new directories. All CSAs, food hubs and farm markets owners/managers need to do is go to http://usdalocalfooddirectories.com/, then click on "Add or Update a Listing," and then click on CSA, Food Hub or On-Farm Market.

You can also expediently bring up-to-date the information about your farmers market in the same manner by accessing this page.

Once a sufficient number of operations have been listed in the new directories, they will be available for public viewing in addition to USDA's Farmers Market Directory. The numbers of directories required before the directories become available are provided on the pages.

Contact us at: directoryupdates@ams.usda.gov if you have any questions concerning the three new Local Food Directories.

The directories are managed and operated by the USDA's Agricultural Marketing Service (AMS) with the core mission of facilitating the fair and efficient marketing of U.S. agricultural products.

Estimating plant-available nitrogen release from cover crops (2012). PNW Extension Publication 636: http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/34720/pnw636.pdf

OSU Organic Fertilizer & Cover Crop Calculator (2010): http://smallfarms.oregonstate.edu/calculator

Cover Crops for Home Gardens West of the Cascades (2014): http://cru.cahe.wsu.edu/CEPublications/FS111E/FS111E.pdf

Cover Crops for Home Gardens East of the Cascades (2014): http://cru.cahe.wsu.edu/CEPublications/FS117E/FS117E.pdf

Methods for Successful Cover Crop Management in Your Home Garden (2014): http://cru.cahe.wsu.edu/CEPublications/FS119E/FS119E.pdf

Public Comments on the Revisions Due to FDA on December 15th

By: Lauren Gwin, Center for Small Farms & Community Food Systems

On September 19, just before Washington D.C. slid headlong into election season, the U.S. Food and Drug Administration (FDA) finally released its long-awaited revisions to two proposed rules written to implement the Food Safety Modernization Act. The agency is asking for public comment by December 15.

The two rules – the "Produce Rule" and the "Preventive Controls Rule" (see side box for their long, official names) – have raised serious concerns for organic and sustainable farmers, local food businesses, and other local food system stakeholders. FDA received thousands of comments during the first round of rulemaking last year.

The revised rule language makes it clear that FDA listened on a number of key points. As FDA states in the preamble to the revisions, "The extensive input we have received from public comments has led to significant changes in our current thinking on certain key provisions of these proposed rules."

The revisions are long and detailed, and we are working with allies to sort through all the details, but based on the executive summaries of both rules, here are some highlights of what FDA appears to have done in response to public comment:

- Revised the microbial standard for water directly applied to produce during the growing season, proposing a tiered approach that targets specific untreated water sources.
- Removed the 9-month interval between application of raw manure and harvest of a crop, pending additional research on a more appropriate interval; FDA no longer conflicts with the National Organic Program on this point;
- Taken out the 45-day minimum application interval for composted manure, as long as care is taken to minimize contact with produce during and after application
- Included a new provision that explicitly says farmers are not authorized or required by the produce rule to "take" endangered species, exclude wildlife from outdoor growing areas, or destroy wildlife habitat,
- Clarified the process by which FDA could withdraw or reinstate a farm's qualified exemption (e.g., notification, opportunity for farm response, burden of proof, etc.)
- Redefined "farm" so that farms that pack or hold food from other farms (for example, as part of a multi-farm CSA) will no longer be defined as "facilities" and therefore will not be subject to the Preventive Controls rule.

> *"We are taking this action because the extensive input we have received from public comments has led to significant changes in our current thinking on certain key provisions of these proposed rules."*
>
> — U.S. Food and Drug Administration, September 19, 2014.

We will continue working with the National Sustainable Agriculture Coalition and other organizations to analyze the revisions fully and will pass that information to you as we have it.

More Info and How to Comment

FDA will take public comments on the rule revisions (only the revisions) until December 15. We will post our analysis and comments, along with FDA's instructions for submitting comments, on our website by mid-November: http://smallfarms.oregonstate.edu/fsma.

"Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption"
https://s3.amazonaws.com/public-inspection.federalregister.gov/2014-22447.pdf
You can find the executive summary on pages 4-7.

"Current Good Manufacturing Practice and Hazard Analysis and Risk-Based Preventive Controls for Human Food"
https://s3.amazonaws.com/public-inspection.federalregister.gov/2014-22446.pdf
You can find the executive summary on pages 8-13.

Pasture Management: Fall Back to Spring Ahead

By: Dr. Susan Kerr, WSU Regional Livestock and Dairy Extension Specialist

It seems counter-intuitive, but the forage production calendar starts in the fall, not the spring. Results of long-term research by Dr. Steve Fransen and his colleagues throughout Washington and Oregon are causing pasture managers and forage advisors to rethink many traditional practices and grazing calendars. This article will highlight management actions to enact this fall that will pay off in higher forage production next spring.

Photo 1. Soil "pugging" and compaction with weed invasion secondary to livestock access during wet season. *Photo provided by Susan Ker*

Cool Season Grass Growth

Most pasture grasses in the PNW are cool season grasses, meaning they grow best throughout spring, slow down during summer then regrow again in the fall. Examples of these plants include orchard grass, timothy, fescues, ryegrasses, and virtually all other pasture grasses in western Washington and Oregon. Their growth starts in the spring after average daily temperatures reach 42°F and increases steadily with rising environmental temperature. Growth slows as average temperatures approach 62°F and ceases entirely above 85°F unless irrigation is applied. In general, growth declines significantly after June 21 as plants begin the first of their two annual root-shedding phases.

What Happens in Early Fall?

At this time of year (mid-September), cool season pasture grasses are just starting to renew growth after summer dormancy induced by heat and lack of water. If they were not overgrazed and have sufficient stored carbohydrates as an energy source, grasses can regenerate their roots and develop many growing points *for next year's pasture production*. Most cool season grass growing points are created in the fall, meaning more tillers, denser stands, more leaves and fewer weeds the following season, which means production of more forage and nutrients for livestock.

Effects of Fall Overgrazing

Forage grasses store most of their carbohydrate energy reserves as sugars in the bottom 3" of stem, not in the roots. Some sugars are stored in roots but quantities are small compared to what is stored in the lower 3" of stubble. Allowing livestock to graze down into these reserves in the fall is like robbing the bank: in the spring, instead of using sugars stored in the lower stem to start new growth, grasses must use root sugars. This "loan" of energy from the roots will manifest itself as delayed and decreased forage production in the following grazing season. Expect a large increase in weeds throughout the pasture, as well, due to delayed and less vigorous grass growth.

Improving Pastures by Feeding Hay?

Here's another counterintuitive pasture management concept: if livestock are kept off pastures during critical growth periods, next season's production will compensate for hay fed during this exclusion period.

Photo 2. Due to continuous grazing, this pasture is overgrazed in some areas and undergrazed in others. There is heavy weed infestation, poor distribution of manure nutrients and poor grass health headed into winter.
Photo provided by Susan Kerr.

A critical growth period is very early spring, when plants first green up. Growers are tempted to turn animals out early and stop feeding hay, but this is a bad decision with season-long effects on pasture production. Many livestock owners turn animals out too soon, unknowingly shooting themselves in the foot (or wallet). Removing leaf matter so early in the spring means the photosynthetic capacity of the plant has been curtailed; new root regeneration is slowed and recovery and production will be set back several weeks. In addition, livestock can cause significant compaction and other long-term damage if they have access to early spring pastures that are often still saturated with water (see Photo 1).

Another very critical growth period is NOW. Cool-season grasses are generating roots after their summer semi-dormant period. They are also creating and storing carbohydrates. Contrary to previous beliefs, most carbohydrates are stored as sugars in the lowest 3" of the stem, not in the roots; this makes them susceptible to removal by livestock through overgrazing. Again, removing these sugars now results in reduced plant vigor during winter, slower green-up in the spring and reduced overall production next year.

Surviving Winter

Stored sugars are also a critical factor in a grass plant's ability to survive winter. Some of these carbohydrates act as a natural anti-freeze for plants. Without this anti-freeze, pasture winterkill rates can be substantial.

Fall Tasks

- If soil conditions and forage supplies allow, continue rotating livestock through pasture cells, never grazing below 3".
- Conduct soil tests and supply needed nutrients while plants are still actively growing. Do not over-fertilize with nitrogen because this can cause late-season plant overgrowth instead of carbohydrate storage, which is necessary for winter survival and early spring start-up.
- Apply lime to raise pH if indicated by soil test. Fall

Photo 3. This chronically-overgrazed horse pasture is mostly weeds. The grass is perpetually stressed by continuous grazing and is in poor health heading into winter..
Photos provided by Susan Kerr.

is the perfect time to do this because it takes several months to exert its effects.

- Create a sacrifice area in which to confine animals when soils are saturated and/or plants are less than 3" tall. Sacrifice areas are also useful for easy-keeping animals on maintenance diets—these animals often gain too much weight and need to have some dietary restrictions. Consult NRCD and Conservation Districts for advice regarding sacrifice area materials and designs that will limit mud development and water runoff.
- Reseed or overseed pastures that need renovation before Sept. 25.
- Feed hay in the summer, fall or any time pasture height is lower than 3".
- Purchase hay needed for winter feed and times of confinement in sacrifice area.

Table 1. Summary of pasture activity and management according to season

Time of Year	What's Happening	What to Do	What NOT to do
Fall (late Sept-Oct.)	• Cool season grasses coming out of summer dormancy • Forage quality increasing • Roots regenerating	• Take soil test and apply lime and nutrients as needed while plants still actively growing	• Do not graze below 3" • Do not graze on waterlogged soil • Do not oversupply nitrogen
Winter (Dec.-Jan.)	• Forage quality low • Plants dormant, minimal growth • Roots shedding	• Confine livestock to sacrifice areas to prevent overgrazing and soil damage • If soil dry or frozen, can graze stockpiled forage if above 3".	• Do not graze below 3" • Do not graze on waterlogged soil
Spring (Feb.-June)	• Green up begins • Roots regenerating • Forage quality increases with time, then decreases	• Turn animals out on pasture when it is at least 6" high and soil not saturated with water • Rotate to new pasture cell every 1 to 4 days • Let grass regrow to +6" before regrazing • Use sacrifice areas as needed to prevent overgrazing • Fertilize as needed while plants actively growing • Mow or graze pastures to keep grass in vegetative state	• Do not graze below 3" • Do not graze on waterlogged soil • Do not turn animals out too soon • Do not let grasses head out into reproductive phase
Summer (July-Aug)	• Plants shedding roots and going dormant • Forage quality decreasing	• Irrigate if available	• Do not graze below 3"

Conclusions

Home-grown pasture forage is the least expensive source of nutrients for livestock. Through the application of timely pasture management principles (see Table 1), owners can improve plant and soil health, reduce feed costs, protect water quality, prolong stand life and increase forage production. Becoming a successful grass manager is challenging but also rewarding.

Thanks to Dr. Steve Fransen for reviewing this article.

Resources

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October 7-9, 2014

Practical Introduction to Cheesemaking



Program At A Glance

Day 1

- **Oregon's Dairy Industry**
- **Milk Composition & Quality**
- **Steps in Cheesemaking**
- **Introduction to Pilot Plant Equipment**
- **Pilot Plant Cheese Production**

Day 2

- **How to Make Different Cheeses - Variations in Cheesemaking Steps**
- **Queso Fresco Production Experiment**
- **Cheese Cultures**
- **Pilot Plant Cheese Production**
- **When Things Go Wrong - Troubleshooting Quality Problems**
- **Course Evaluation**

Day 3

- **Regulatory Requirements for Starting a Cheese Plant in Oregon**
- **How to Work with State Regulators**
- **Equipment Needed**
- **Safety Considerations**
- **Economics of Artisan Cheese Making**
- **Cheese Tasting**
- **Visit Artisan Cheesemaker**

Target Audience

People who want to learn how to make different types of cheese. This course places heavy emphasis on practical application and hands-on cheesemaking. The third day is specifically targeted for participants who are considering starting their own cheesemaking facility.

Location

OSU Dairy Pilot Plant, featuring all new state-of-the-art French and Dutch cheesemaking equipment.

Instructors

Marc Bates - Bates Consulting LLC, has over 29 years experience teaching cheesemaking short courses.

Dr. Lisbeth Goddik - Professor and OSU Dairy Processing Specialist with the Department of Food Science and Technology (FST).

REGISTER EARLY! Limited to 25 participants

For program information contact:
Dr. Lisbeth Goddik, ph: 541.737.8322
lisbeth.goddik@oregonstate.edu

Sponsored by...

Arbuthnot Dairy Center

Oregon State University Extension Service

Department of Food Science and Technology

Regional Conferences Nurture Regional Food Systems

By: Katrina Van Dis, Central Oregon Intergovernmental Council, Emily Vollmer and Lauren Sorg, Food Roots

Editor's note: On back-to-back weekends this fall, two regions of Oregon will gather together to celebrate their local food systems and strategize next steps for future development. Both gatherings will be hosted by local food system nonprofits, public agencies, and OSU Extension.

Central Oregon Food Summit

Central Oregon is blooming with interest in a sustainable food system. The second Food Summit, on October 25, will bring farmers, ranchers, the public, food professionals, CSA members, community organizers, and politicians together to *Celebrate our Progress and Define our Future* for healthy, local food in Central Oregon. Conference attendees will learn about regional farm and food issues, healthy food access, food system infrastructure, and methods to mobilize communities in order to increase access to farm-fresh, locally grown food.

At the first Food Summit in 2010, participants identified barriers and needs for the region. This October, participants will learn about and celebrate four years of regional successes. Instead of having a keynote speaker, the community will be the keynote! During an interactive morning of Ignite Talks,™ people will learn what farmers, people, organizations and businesses are doing to support the region. Afternoon breakout sessions in three tracks – agricultural producers, consumers, and organizations – will focus on specialty crop production, collaborating with and among organizations, discussion with local policymakers, and food skills education for families and individuals.

The Food Summit is hosted by the Central Oregon Intergovernmental Council, OSU Extension Service, and Jefferson County Soil & Water Conservation District and is supported by a grant from the Oregon Department of Agriculture.

Grow the Coast

On Oregon's North Coast, excitement about new opportunities for food, farms, and communities is also growing. Food Roots, North Coast Food Web, and OSU Extension are hosting the third annual "Grow the Coast" conference on November 1, in Seaside. The full-day conference will feature both beginning and advanced level workshops for farmers, gardeners and homesteaders, and local food enthusiasts.

The conference will be a place of learning, connection, celebration of successes, and brainstorming the future. The keynote session, "Local Food on the North Coast: Celebrating Successes, Moving Ahead," recognizes that a regional food system is a team effort. Keynote panelists and the audience will have the opportunity to hear from each other and share perspectives and ideas for how to grow the region›s food system and economy. Panelists will report on trends and opportunities for producers, markets, and community, and the moderator will ask for audience participation: What are you seeing? What's challenging? What are you excited about? And what can we do about it together?

The keynote will be followed by educational workshops, 5 tracks over 3 time periods, on a wide range of topics, from orchard management and variety selection for hard cider production, crop breeding and seed saving, and crop rotation for disease management to agritourism, cost accounting, farm financing, small-scale equipment and hand tools, and school and community garden programs – and more.

OSU Offers "Recipe to Market" Series in Southern Oregon

OSU Extension's Family and Community Health Program and the Small Farms Program have teamed up to offer a four-part "Recipe to Market" workshop series this fall, beginning October 15. The series is designed for farmers and others interested in starting their own value-added food businesses.

The cost varies by session, but you can sign up for all four for $55 total. Register for by calling the OSU Josephine County Extension Office at (541) 476 6613 or emailing Josephine.Extension@oregonstate.edu.

Session 1: Pub Talk & Product Showcase

Wednesday, Oct. 15, 6-8:30pm

The kick-off event, at Taprock in Grants Pass, will feature local food samples, a no-host beer and wine bar, and a "Success Stories" panel of local business owners who are successfully producing, processing and selling a food product. The event will include time for networking and tasting local artisan foods.

Location: Taprock Northwest Grill's Evergreen Room, Grants Pass

Cost: Free, but space is limited and pre-registration strongly encouraged.

Session 2: Launching a Successful Food Business: Product Development, Laws & Labeling

Saturday November 1, 2014, 10am – 4pm

This session will be led by Sarah Masoni, Product and Process Development Manager at OSU's Food Innovation Center, and Laura Barton, food consultant and former Oregon Department of Agriculture trade manager. Both are veteran food industry specialists with a passion for assisting food entrepreneurs.
The session will help you get ready to start a food business confidently with an understanding of food labeling, food safety, creating a recipe, product testing, shelf-life, kitchen and licensing requirements, food laws, food business vocabulary, pricing, marketing strategies, and next-step local resources. Their easy-to-understand yet comprehensive presentation will include networking and plenty of time for questions and answers.

Location: OSU Extension Josephine County Auditorium

Cost: $40.00 (includes lunch); register by October 28.

Session 3: Local Resources for Developing Your Business Plan & Financing

November 5, 6-8:30pm

At this workshop, THRIVE, the Rogue Community College Small Business Development Center, and other local business advisors will answer some important questions: Why do you need a business plan and how do you go about creating one? What type of business structure is best for me? How should I approach budgeting and recordkeeping? What different types of financing are available to me?

Location: OSU Extension Josephine County Auditorium

Cost: $15.00

Session 4: Building Your Food Brand in the Marketplace

Wednesday November 12, 6-8:30 pm.

This session will cover the pros and cons of various marketing and distribution channels including farm stands, growers markets, stores, Internet, and wholesale distributors. We will also discuss branding your product, from how to develop a logo to how to use social media to create a buzz about your new product. Speakers include successful food business owners and a local marketing consultant.

Location: OSU Extension Josephine County Auditorium

Cost: $15.00

Crops That Don't Require Irrigation *(and big equipment)*

By: Chip Bubl, Extension Horticulturalist, Columbia County

Western Oregon has a number of small-acreage farms (40 acres or less) that have traditionally raised livestock but could produce higher value crops. But most of those farms do not have an irrigation right and perfecting a new right is very difficult. In addition, farms with those rights may want to reduce their irrigation costs on part of their land. The following are some suggested crops that could be grown in western Oregon without irrigation on soils with decent drainage. There are other options but this is a starting point:

1. **Christmas trees:** A well-established crop that has gone through a number of ups and downs over the last 30 years. Prices are marginally better now but it takes 5-6 years or more depending on species and care for the first harvest.

2. **Garlic:** Fall-planted and harvested in July. Some new diseases have made this crop more challenging recently. Ground also needs to be rotated on a 4-5 year cycle so you would need something else to grow in the rotation years and the extra land to cover the rotation cycle.

3. **Tree and nut crops:** May need some irrigation during the establishment years. Weed control to reduce moisture loss is crucial. Apples, pears, plums, and hazelnuts are all promising. So are some newer/less traditional fruit species. Market strategy would need to be developed. Usually do best on Class 1 and 2 well-drained soil types. Lots of management in pest control and pruning.

4. **Raspberries and blackberry types** like the Marion, Logan and varieties: Historically, they were grown without irrigation on really good land. But as irrigation techniques improved, raspberries responded well and now most raspberries in western Oregon are irrigated. Still, it can be done, albeit with lower yields. The blackberry types would be the best bet in that they have more vigorous roots and less disease issues.

5. **Strawberries:** Again, significant strawberry acreage was grown without irrigation in parts of western Oregon in the 1940s and 50s. Soil types are important and so are varieties. Weed control is crucial to conserving moisture and reducing disease.

6. **Tomatoes:** This one is really controversial and largely untested, at least in recent memory in western Oregon. In northern California in the north central coastal belt (Marin county and adjacent areas) they are growing some non-irrigated tomatoes. They are warmer than we are but not by a lot. They get 45 inches or more of rain in the winter but little summer rainfall. They plant tomatoes on good loam soils that have a deep profile. Transplants are put in when the soil temperatures reach 55 degrees or so. Row covers are used in some cases and not in others. The growers force the roots down into the stored moisture in the 2-3 foot zone below the soil surface. Weed control is critical. So is planting density and, I would guess, tomato variety. There really are no assessments of root vigor except in the minds of those growers and they aren't saying much. Why do they do this? Some California farming regions are very short of irrigation options. In addition, the growers are said to get premium prices for these tomatoes that are reputed to be more intensely flavored. Grafted tomatoes with their more vigorous roots might be the way to go. So might direct seeding under cloches followed by row covers. Pretty good soils are also important. But even that is a complex exercise since the rootstocks on these grafts all have different traits and qualities. This is a long-term project that may not work well here at all. But it might be worth looking at.

7. **Rhubarb:** This one is a bit like raspberries and blackberries. They can be grown without irrigation but yield is reduced. Careful management of picking to make sure the crown has a good chance to renew itself is critical. So is

weed control. Market development is key to this crop.

8. **Fava beans**: They can be seeded in either the winter (many varieties overwinter) or as early in the spring as you can work and/or plant the crop. In one test, they grew well but had some disease issues. Picking culinary varieties that are favored by the Mediterranean cultures will offer the best marketing options. Restaurant owners that tasted the trial output described English fava varieties as fit only for livestock. But they thought the mid-Eastern types were very acceptable. Market development is important.

9. **Over-wintering peas:** *Cascade* is a good variety to over-winter. But temperatures like we got last winter kill it. Spring disease can also be a problem. So it is a gamble. But if you can get the seed (and then save your own) it is a decent cover crop even if the crop doesn't work out.

10. **Other over-wintering vegetables:** This includes some varieties of onions, cauliflower, and most leeks and shallots. They are technically difficult, may freeze out, and often are damaged by spring diseases. And most have to be started with irrigation in August or so to be large enough to over-winter successfully.

New Leopold Center Toolkit Looks at Shared-Use Kitchens

Shared-use Kitchen Planning Toolkit: This is a guide to starting a shared-use kitchen as an affordable venue for new and existing value-added food production entrepreneuers, farmers and caterers. The 44-page toolkit includes insights from five shared-use kitchens operating outside Iowa, as well as perspectives from several people who are starting their own facility. News release

http://www.leopold.iastate.edu/pubs-and-papers/2014-09-shared-use-kitchen-planning-toolkit

Calendar

November

1 - Launching a Successful Food Business: Product Development, Laws & Labeling
The session will help you get ready to start a food business confidently with an understanding of food labeling, food safety, creating a recipe, product testing, shelf-life, kitchen and licensing requirements, food laws, food business vocabulary, pricing, marketing strategies, and next-step local resources. Their easy-to-understand yet comprehensive presentation will include networking and plenty of time for questions and answers. 10:00AM - 4:00 PM/ OSU Extension Josephine County Auditorium. ***$40***

5 - Local Resources for Developing Your Business Plan & Financing
At this workshop, THRIVE, the Rogue Community College Small Business Development Center, and other local business advisors will answer some important questions: Why do you need a business plan and how do you go about creating one? What type of business structure is best for me? How should I approach budgeting and recordkeeping? What different types of financing are available to me? 6:00 PM - 8:30PM. Location: OSU Extension Josephine County Auditorium. ***$15***

12 - Building Your Food Brand in the Marketplace
This session will cover the pros and cons of various marketing and distribution channels including farm stands, growers markets, stores, Internet, and wholesale distributors. We will also discuss branding your product, from how to develop a logo to how to use social media to create a buzz about your new product. Speakers include successful food business owners and a local marketing consultant. 6:00 PM - 8:30 PM. OSU Extension Josephine County Auditorium. ***$15***

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