Summer 2009

Oregon Small Farm News

Oregon State University Small Farms Program

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OSU Oregon State University Extension Service

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Cover Photo:

By Chuck King, courtesy of the Oregon Food Bank

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Small Farms Program Faces Cuts

By: Garry Stephenson

At "press time," Oregon State University Extension Service is facing a large budget cut. This places all six Small Farms faculty at risk but four positions are at very high risk—they will likely be terminated unless the outlook changes. Losing these positions has a real impact on our work with sustainable farming, farm direct marketing, and community food systems.

Additionally, the impact specifically on OSU's work with organic agriculture is huge. Although there are many OSU faculty engaged in research or education related to organic agriculture, there is a core group of faculty whose assignments devote a significant amount of their time to this area. This group includes three Small Farms faculty. Losing these positions drastically reduces OSU's involvement with organic farming, particularly with small scale farmers.

At this time, we're hoping for better news from the legislature. Also, we are currently seeking other sources of funding for all the Small Farms positions. However, dependence on outside sources of funding will change what we do.

Below, I've listed some examples of Small Farms Program educational and research activities from this past year and slated for 2010. These are the types of efforts that are in jeopardy.

Educational Programs and Workshops:

- Crop Planning & CSA Distribution
- South Willamette Women's Agriculture Network
- League of Women Farmers-women farmers' network
- Immigrant and refugee workshops on organic production
- Living on the Land workshop series—stewardship for small acreage landowners.
- Organic Fertilizer Calculator
- Oregon Small Farm News
- Oregon Small Farms Conference
- Oregon Small Farms website

Current Applied Research or Outreach Projects:

- Growing Farms: Successful Whole Farm Planning (8 workshops for beginning farmers)
- Educating Women Farmers about Certified Organic Production
- Estimating Nitrogen Contribution from Cover Crops on Organic Vegetable and Cane Berry Farms.
- Increasing Grower Adoption of Adaptive Cover Cropping Systems: Effects on Vegetable Production and Nitrogen Cycling.
- Oregon Organic Cropping Research
- On-farm Compost Production, Compost Quality and Leachate Management

Farm Profile: Windflower Farm

by: Dana Martin

Windflower Farm is the accumulation of everything Gigi Meyer loves. From her barn deck, which she hopes will someday serve as an art and writing studio, she oversees horses grazing the lush pasture below. In the opposite direction the view changes to artistically designed vegetable and flower beds. Two greenhouses, an orchard and an old barn converted into a chicken coop serve as a backdrop to this beautiful scene.

Gigi seldom has time to enjoy the vision she has created on her 10-acre farm located about 15 miles east of Bend. She is much too busy planting seeds, pulling weeds, and harvesting crops to fulfill her 30 member CSA (Community Supported Agriculture) operation. Still, she is excited about living her dream, which combines all her passions.

"I have found a way to bring art, writing, horses and gardening, all the things I love, into one place," says Gigi. "After all my wandering, it feels good to be settled in Central Oregon and have this farm as my home."

Gigi's life journey has taken her places throughout the world. Growing up in Portland, she was first exposed to Eastern Oregon when her family purchased a large cattle ranch in Westfall. Summertime and vacations were spent on the ranch where she learned to ride horses and work cattle with the buckaroos. This was the perfect setting for a horse crazy 10-year-old and these experiences eventually lead Gigi to jobs of training and conditioning race horses and teaching riding lessons.

After graduating from high school, Gigi headed east to attend college and pursue her love of art. But even after 10 years of painting in New York, Gigi's form would usually reflect the deeply entrenched influence of Eastern Oregon. "In the process of abstraction, an image of the Oregon desert was present," she says.

In March, 1989, Gigi had the opportunity to travel to Italy to write a feature article on the Palio Horse Race. While there, she worked as a caretaker for a villa in Tuscany and discovered her passion for farming.

"It was a diverse villa with a beautiful rose garden, vineyard and lavender field. Different vegetables and flowers were growing and I learned a lot from my friend who was a horticulturist. It was a magical time," says Gigi.

After several months in Europe, Gigi returned to the United States a changed person. Realizing her need to be close to nature, she returned to the West Coast and eventually ended up in Bend.

In the fall of 2005, she was able to sell her house in town and purchase a farm in the rural Alfalfa community east of Bend. "The timing was right because Alfalfa was still off the map so I was able to buy the farm for less than the house I sold," says Gigi, noting that her new property was set up with a house, old barn and an inefficient irrigation system.

"The first thing I did was improve the fences and

irrigation system. Otherwise, I knew all I would be doing is moving hand lines," she adds.

Utilizing her talent as an artist, Gigi then designed the layout for her farm. She figured out where she wanted fence lines for the horse pastures and the placement of new greenhouses and horse barn. She planned the location for her garden and decided where the orchard should be planted.

With help from her family, Gigi then went to work digging up rocks and creating rock walls around the garden area. She enhanced her soil and started planting currant bushes to help serve as a windbreak for other crops.

Two greenhouses were constructed to give her an early growing advantage in the cold Central Oregon climate and the old barn was remodeled to accommodate 30 laying hens. Gig also built a 7 stall barn and has plans to board horses to help create more revenue for her farm.

In 2007, Gigi was ready to offer 5 CSA memberships. The number grew to 15 in 2008 and this year, Windflower Farm has 30 CSA members and there is a waiting list. For a fee of $625, a weekly bag of produce is dropped off for pickup in downtown Bend and for slightly more, home delivery is provided. For an additional $100, members can add fresh cut flowers and for $65 more, members can have eggs with their order.

Gigi's CSA season runs six months, May through October, and starts a month earlier than most other programs in Central Oregon due to her greenhouse advantage. A wide variety of produce is offered, ranging from different types of lettuces early on to tomatoes, peppers, cucumbers and herbs later in the season. She has established a market with a local grocery store that will accept extra produce and she is talking to a local caterer who is interested in using locally grown vegetables in his business.

As interest in local food grows, Gigi enjoys sharing what she has learned with others. She consults with people who are trying to establish gardens and has attracted volunteers who are eager to help out on the farm.

"I am learning as I go and have had some hard lessons along the way," says Gigi. "Farm work is physically and mentally tiring and there are always worries about money. I feel that it's important to have some balance in life so hopefully, I will reach a point when that happens."

For now, Gigi is exploring all opportunities to increase income on her farm. She voices frustration with the laws and policies that make it difficult for small farmers to financially survive.

"It would help if there was some flexibility in zoning requirements to allow for agri-tourism," says Gigi. "This has become quite popular in Europe. Farmers rent out a room or spot on the farm for tourists who would like to spend a few days in the country and learn a bit about farming. This helps keep farmers on the farm and also helps city-folk get first-hand experiences of country life."

Despite the long hours and exhausting work, there is no place Gigi would rather be than Windflower Farm. "Growing healthy food is very satisfying and I'm motivated by the enthusiasm people have for the farm and what we are growing," says Gigi. "It's wonderful that people are becoming more aware of what they eat and how everything we do affects the environment. I really want this to work because food is so important to everyone."

Oregon Food Bank Seeks New Partnerships with Small Farm Operators

By: Hilary Eyres, Oregon Food Bank

Over time, the sources of food for Oregon Food Bank's emergency food distribution have evolved from the early years of food banking when distribution was primarily based on USDA commodities. As USDA allocations have declined, the local food industry has played an increasingly important role, contributing 61 percent of the food the statewide OFB Network distributes, and represents the greatest hunger-relief opportunity for the future.

"Oregon Food Bank employee Sharon Thornberry works with one of our gleaning groups to collect excess fruit". *Photo by Oregon Food Bank*

The growing number of small acreage landowners throughout the state play a vital role. Small farms continue to keep the rich agricultural tradition in Oregon alive and provide critical support for the ever-growing local food movement. The role of Oregon farmers in hunger relief can expand through partnerships with OFB and its network of local agencies through the expansion of current programs, and through the creation and promotion of new programs.

Oregon Food Bank

Oregon Food Bank recovers food from farmers, manufacturers, wholesalers, retailers, individuals and government sources. It then delivers that food to 20 regional food banks covering all of Oregon and Clark County, Wash.. Combined with additional resources from local donations, over 900 emergency food agencies in the OFB Network provide supplemental food for families and households, providing food assistance to more than 200,000 people every month. The OFB Network moved 57.8 million pounds of food in fiscal year ending in June 2008. The need for emergency food has increased dramatically this year, growing by more than 15 percent since March 2008. As a result OFB is developing additional ways to engage partners in its communities.

Innovative Organizations and Programs

There are a number of ways for small acreage farmers to be involved: Harvest Share, Plant-a-Row for the Hungry, and Farmers Ending Hunger are a few to highlight, as they pertain specifically to farmers.

Harvest Share: A produce distribution program that moves perishable, highly nutritious produce quickly to families. Our driver picks up regularly at farms and produce houses throughout Multnomah, Clackamas and Washington counties and delivers directly to local agencies on a rotating schedule.

Photo by Chuck King

Plant-a-Row program: A nationwide effort spearheaded by the Garden Writers Association to provide fresh produce for people experiencing hunger. A number of local agencies readily accept smaller quantities of produce from family gardens.

Plant a Row for the Hungry
Garden Writers Association Foundation
www.gardenwriters.org
Call Toll Free: (877) 492-2727

Farmers Ending Hunger: Provides growers big and small with an outlet to plan donations for OFB. Through "Adopt-an-Acre," FEH enlists the support of the urban community to provide the funding needed to move and, when necessary, process this food for distribution through the OFB network.

Places for Development

Community Supported Agriculture (CSA): As CSA's increase, so does the need for having convenient pick-up locations for members. Partner with OFB to locate an agency with the ability to host a CSA pick-up. CSA growers can donate unclaimed shares and excess production directly to the partner agency. Additionally, it gives CSA subscribers an opportunity to connect with emergency food agencies in their community and learn of other means of support.

U-Pick: Without additional staff for harvesting, U-Pick sites often find it difficult to donate surplus produce. A "U-Pick for Oregon Food Bank" promotion is an opportunity to capitalize on customer picking capabilities, provide much-needed produce for our network, and drive additional business to your farm.

The Small Farm Connection

There are opportunities to get involved, on any scale. Many agencies in our network have volunteers that are able to pick up donations and can provide refrigerated storage for perishable product. For growers with additional portions of farmable land, consider planting surplus to harvest for an agency near your farm. Small quantities of surplus produce you can't take to market can go to a local agency on your distribution route to make donations streamlined. Call OFB or connect with Farmers Ending Hunger about potential donations and processing of poultry and livestock.

We can all make a difference, and together, small acreage landowners have the ability to make a huge impact. If every person who downloaded this publication was able to donate 100 pounds over the growing season, we could capture an additional one million pounds every year!

Useful Links and Information

Oregon Food Bank
www.oregonfoodbank.org
Food Industry Contact:
Hilary Eyres
heyres@oregonfoodbank.org
503.490.8972

Plant-a-Row
www.gardenwriters.org
www.oregonfoodbank.org (click on Volunteer, then Garden, then Plant-a-Row)

Farmers Ending Hunger
www.farmersendinghunger.com
PO Box 7361
Salem, OR 97303
503.931.9232
burtjgb@aol.com

Photo by Chuck King

Liming Coastal Pastures

By: Sam Angima

Nearly everybody involved in agriculture knows something about soil pH. Broadly, pH is a measure of the hydrogen ion concentration in soil solution which controls the overall suitability for root growth of any plant. Different plants have differing abilities to get plant nutrients from this soil medium, hence the reason why we need different soil pHs for specific crops. Most cool season forages grow better in a pH range of 5.5-7.5. However, outside this pH range we expect soil conditions to become a limiting factor in production.

Lush fescue pasture in Siletz Oregon that received 2.5 tons/acre lime 2 years ago – surface applied. Even though yield may be increased with surface applied lime, the economics are still questionable. *(Picture Sam Angima).*

Soils tend to become acidic due to leaching from the high rainfall that we receive especially along the coast, which removes nutrients like calcium, potassium and magnesium leaving a high concentration of hydrogen ions in soil solution. Most of the nitrogen supplying fertilizers we use such as ammonium sulfate and urea also help acidify the soil further. Lime is generally used to raise the pH to desirable levels depending on soil test recommendations. The big question now is should we surface apply lime to pastures to change pH or should we till, apply lime, and start new pastures?

Lime Movement

For lime to change soil pH, mixing with soil is necessary. Calcium carbonate, the primary component of lime, is not soluble. The inability to move with water inhibits lime from changing soil pH unless it is mixed with soil. In the absence of tillage, lime will be contained to the top inch of soil. External forces are needed to assist movement of calcium carbonate deeper into the soil. Some studies in the 1960s and 1990s from Western Oregon have illustrated the lack of soil pH change when lime is top dressed or surface applied to seven perennial ryegrass seed fields. Fifteen months after lime was applied, the soil was carefully sampled to four inches. Lime increased soil pH only to a depth of one-half inch, and even after six years, there was little change.

However in a filbert orchard, surface applied lime was found to raise pH 5-10 inches below the soil surface. Also in a current on-going study in a Douglas-fir forest ecosystem, pH change and exchangeable calcium levels were found to be significantly higher than control plots down to 32 inches. This movement has been attributed to soil microorganisms especially earthworms and for the forest soils, maybe preferential flow patterns following living and dead root systems. However, many questions still remain for the pasture system in relation to effectiveness of surface applied lime.

The following summary and argument is from research conducted by Troy Downing and John Hart, OSU Extension professors, on liming coastal soils found online at: (http://extension.oregonstate.edu/tillamook/sites/default/files/documents/dairy/dairy-soil-ph-and-pasture-productivity.pdf).

A project was conducted on two sites that had initial soil pH values at 5.1 and 5.3. Twenty four plots in two sites were planted to perennial ryegrass and limed at 0, 1 ton, 2 ton and 4 tons per acre equivalent. Half the treatments were applied and incorporated while tilling before planting and the other half the plots received lime as a top dress application during the first winter. Plots were harvested six times a year

for two years. Yield and quality data were recorded and the data was statistically analyzed.
Lime treatments increased soil pH significantly as well as slight increases in yield. Differences in yield from the control plots to the highest lime application plots were significant. However, the total increase was only around 1000 pounds of forage (less than 10% increase) per acre per year. If we value this increase in forage as feed at 8 cents a pound, we increased the value of forage by $80 an acre. The four ton treatment of lime could cost $240 - $280 acre and (even triple that in 2008-09 depending on location), making the economic return questionable. One main question that is not answered yet, is how long this increase will last? Typically, we would estimate liming working for 5-7 years.

These results were surprising to the researchers. We have always thought that when pH is the limiting factor, then 'fixing' it will solve the yield equation. Soils in western Oregon do have high organic matter, and this could be buffering the pH change to an extent not similar to Willamette valley soils and conditions. These soils started at 5.2 and were increased to 6 at the highest treatment.

As we, at OSU continue to formulate research to address this liming dilemma, what we currently know is that top dressed lime does not change soil pH in more than the surface inch or so unless it is mixed with the soil in pastures. Top dressed lime can alter plant growth, but more than a year may be required before a change in plant growth is measured. In contrast, changes in soil chemical properties and plant growth can be measured in a few weeks after lime is incorporated.

Therefore for these pasture systems, it will largely depend on your management objective. If you really want to influence nutrient status of the soil, lime has to be mixed before you put in a new pasture. If you want to maintain a level pH to provide adequate calcium, surface application of lime may be an option but not necessarily an economical way to do it in the long run.

Seed Saving Basics

By: Maud Powell

Summer and autumn are the seasons when many gardeners and farmers are out in their fields collecting vegetable, fruit and flower seeds for the next season. Seed saving is an excellent way to engage in the worldwide movement to preserve some of the older "heirloom" varieties of seed. During the past two decades, many seed companies have consolidated, and regulations regarding the patenting of seed varieties have been loosened. As a result, seed companies routinely drop older varieties for newer ones, which are usually hybridized and/or patented. Organized grassroots seed-saving efforts, as well as inspired gardeners and farmers have done an excellent job of saving many heirloom varieties.

Seed saving is also a great way to develop seed-lines that are well adapted to a particular environment. Saving seed from the healthiest plants year after year enables growers to select for traits that are most suitable for their growing conditions. Finally, seed saving encourages a deeper understanding of the life cycle of plants. We rarely see certain vegetable plants, like lettuce, onions and carrots, in the reproductive stage of their lives. Saving seed provides growers with an education in plant genetics and breeding, which is usually left to universities and seed companies. Following are the four basic steps to saving seed.

Step 1: Choose what seeds you want to save

When saving vegetable seeds, it is important to choose open-pollinated varieties. Open-pollinated varieties set seeds whose plants resemble the parent plants. In contrast, F1 hybrid seeds are products of crosses between two different varieties and combine traits of two different parents. Seeds collected from F1 hybrids will produce a mixture of plant types, most of which will be inferior to the parent plants.

Plants can be roughly divided into three types of pollinators: self-pollinated, wind-pollinated and insect pollinated. Plants that self-pollinate, like tomatoes, peppers, beans, lettuce, peas and broccoli are the easiest to save seed from because they rarely cross-pollinate. Self-pollinating seeds that are biennial crops, such as carrots and beets, are harder to save since they need two seasons to set their seeds.

Crops that are wind or insect-pollinated, including cucumbers, melons, corn, pumpkins, gourds, and squash, will readily cross-pollinate. If you want to save viable seeds from these plants, you can only grow one variety during any given season.

Step 2: Collect the Seeds

Take seeds from the healthiest-looking plants. You can also select for a particular desirable trait. For example, if you want to develop a more heat tolerant lettuce variety, collect seeds from plants that were last to bolt. Allow the seed to reach full maturity before collecting. Mature seeds usually have a hard seed coat or a darkened color. When the seed is fully ripe, pick and dry the seed as soon as possible.

Seeds contained in a pod or husk should be left to dry on the plant. Each pod can generally be harvested individually as it dries, but if heavy rains or freezing weather threaten, harvest as many as possible. The entire plant can even be removed from the field and

hung inside to complete the maturation process.

Step 3: Clean Seeds
Seed cleaning methods can be divided into wet processing and dry processing. Wet processed seeds are embedded in the damp flesh of fruits or berries, such as tomatoes, cucumbers, and melons. To clean wet processed seeds, begin by cutting open fruits and scraping seeds out. The seeds, pulp and juice from the fruits may need to go through a fermentation process. During the fermentation process, microorganisms such as bacteria and yeast destroy many of the seed-borne diseases that can affect the next generation of plants.

Next, wash the seeds by placing them in a large bowl or bucket. Add water, and stir the mixture vigorously. Viable seeds tend to be denser and will sink to the bottom, while poor quality seeds are more likely to float. Add more water and repeat the process until only clean seeds remain. Pour the seeds into a strainer and washed under running water. Finally, dry the cleaned seeds by spreading as thinly as possible on a flat, dry surface such as a glass or ceramic dish, cookie sheet, window screen, or a piece of plywood. Stir the seeds several times during the day.

To clean dry processed seeds, begin by separating seeds from husk, flower head, or pod. Seeds that are in pods, may need to be smashed. Once the seeds have been released from the pods or husks, you can separate them from the pods by using hand-screens. Hand-screens are easily to build, and should have a wire gauge that allows to seeds pass through. Once the larger pods are removed, lighter chaff can be separated by winnowing.

Keep in mind that damage begins to occur whenever the temperature of seeds rises above 95F. Fans hasten the drying process; ceiling fans are ideal, and placing seeds on window screens is best of all as they allow for excellent air circulation.

Step 4: Storing Seeds
Proper seed storage ensures a high percentage of germination at planting time. Once seeds have been cleaned and dried, place equal amounts of silica gel (available at craft shops) and seed into paper envelopes. Always remember to label envelopes, especially if you are saving different varieties of the same plant species. Place each envelope into a clean, glass jar. In one to two weeks, remove silica gel from the seeds, and return the envelope to the glass jar. Store jars in a cool, dry place until you are ready to use the seeds. If you are depending on these seeds for commercial production, we recommend testing for germination percentage about a month before the expected planting date.

For more information, Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners by Suzanne Ashworth is an invaluable handbook for both beginning and experienced seed savers. If you aren't already saving your own seed, choose one or two varieties to collect this fall.

Selected Seasonal Livestock Health Concerns

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

Coccidiosis -This parasitic disease can happen year round, but it mostly affects young animals and these are usually born in the spring. Coccidia organisms are generally species specific, which means that they don't spread between pigs and cattle, for example. Sheep and goats can share a few species. Coccidia are extremely hardy, which means that once a premise experiences a case of coccidiosis, the premise should be considered perpetually infected through both contaminated environment and carrier animals.

Signs of coccidiosis vary between species. Typical signs include poor growth, rough hair coat, pot-bellied appearance, failure to thrive, loose to bloody stool and even death. Diagnosis is by fecal sample examination.

Animals can be affected from about one to 12 months but most typically those showing signs of illness are animals about weaning age. Affected animals may be permanently stunted and become poor do-ers. Clinical coccidiosis is rare in adults due to immunity they eventually develop.

Coccidia are protozoa and therefore not killed by routine dewormers. Clinically ill animals need treatment either through a water source or by oral drenching for several days in a row. The good news is that clinical disease can be prevented. Medications can be added to grain mixes, salt source or minerals to provide a low-level of coccidiosis prevention during the period of concern. Good manure management and sanitation practices also have a place in control of coccidiosis. NOTE: Do not feed medications with coccidiosis preventative medication (e.g. monensin) to any members of the horse or poultry families.

For more information:
http://osuextra.okstate.edu/pdfs/F-9129web.pdf
www.oznet.ksu.edu/library/LVSTK2/MF2209.PDF

White Muscle Disease
This nutritional disorder can also happen at any time of the year, but again it mostly affects young animals and these are usually born in the spring.

In most parts of the U.S., soils are deficient in the mineral Selenium. One of Selenium's roles is as an anti-oxidant to help stabilize cell membranes, particularly muscle cell membranes. If animals do not ingest enough Selenium, either through grazing or supplements, they can exhibit signs of Selenium deficiency.

Signs of deficiency vary with age. In adult animals, signs are subtle and may include poor reproductive performance, retained placentas, chronic infections and poor immune system function. The signs are much more dramatic in young stock: poor growth rates, weakness, pneumonia and/or death. Animals with *in utero* deficiency may be premature, lightweight, weak or stillborn.

Selenium deficiency is diagnosed through physical examination, blood testing, liver biopsy, response to treatment or necropsy. At necropsy, hamstring, tongue, heart and throat muscles lack their healthy red color and are instead soft and pale (hence the name "White Muscle Disease"); this is because the cell membranes have been damaged and the muscles have degenerated. If cardiac muscles are affected, the disease can be fatal.

All livestock in our area need some sort of Selenium supplementation. Supplementation through mineral or grain mixes may be sufficient for adult animals at maintenance. Growing and pregnant animals will probably need at least one injection of a Vitamin E/ Selenium product. Ask your veterinarian for advice about how, when, how often and how much to give your animals.

For more information:
http://cru.cahe.wsu.edu/CEPublications/eb1607/eb1607.html
http://extension.oregonstate.edu/catalog/html/pnw/pnw157-e

'Lush spring forage, while it looks good, can have an adverse affect on livestock health'

Founder

Laminitis ("founder") is inflammation of tissues connecting an animal's hoof to the underlying bone. Although this disease could happen in any hoofed species, it is most common in horses and dairy cattle.

The sensitive layers of tissue connecting the hoof to bone can become inflamed whenever an animal has a high fever, overeats carbohydrates, is exposed to a toxin or experiences strong and repetitive concussive forces to the feet. In horses, too rapid cooling of a hot animal is another predisposing factor. Sources of excess carbohydrates include high-grain rations, molasses tubs, tree fruit falls, grain spills, unlimited access to grain or unlimited lush spring pasture.

Affected animals walk with a slow and hesitant gait but they usually do not favor one leg over another. They may lie down and be reluctant to move. Their hooves will be hot and the arteries serving the feet will throb.

A veterinarian should be consulted immediately for the best long-term outcome for the animal. Recommended treatments include removal or cessation of the causative factor, cold water soaks for the affected feet and administration of anti-inflammatories and other medications. More extreme treatment measures may be needed in individual cases. For horses, corrective shoeing methods can aid recovery and animal comfort.

To prevent founder, monitor animal health closely; control carbohydrate consumption; control access to lush spring grass; provide sufficient bedding; do not force horses to travel on hard surfaces; feed bicarbonate with high-grain diets; and cool horses slowly after work. Some horses are perpetually prone to founder and may need to be kept on a dry lot and only fed hay.

For more information:
http://ohioline.osu.edu/b762/b762_30.html
www.ces.purdue.edu/extmedia/VY/VY-30.html
www.oznet.ksu.edu/library/lvstk2/mf2070.pdf

Grass tetany

Grass tetany ("grass staggers") is another common springtime disease of livestock, especially cattle. The cause is debatable. For simplicity, this condition will be described here as low blood levels of magnesium in affected animals due to low levels or low availability of magnesium in feed or poor absorption by the animal.

Lush spring forage may have low magnesium content and therefore be associated with this disease. However, grass tetany can occur if cattle are ingesting too much potassium, are deficient in salt or the diet is changed rapidly from hay to lush pasture.

Animals with abnormally-low blood magnesium levels may appear fine until stressed by calving, movement or transportation. Mildly affected animals will twitch their face and ears, carry their tail up, walk with a stiff "goosestep" and act more wary or wild than usual. As the condition worsens, animals become more excited. They may bellow, stagger and appear blind. Without treatment, affected animals go down and begin a repetitive, stiff-legged paddling motion with all four legs. Death is likely without prompt treatment and down animals may do serious secondary injury to themselves. Indeed, most livestock producers realize they have an "outbreak" of grass tetany when they find dead animals that have paddled into the dirt before they died.

Treatment consists of intravenous magnesium preparations. Due to potentially-fatal cardiac complications, treatment should be administered by a veterinarian. Restraint is critical because unlike the near-coma induced by milk fever, grass tetany cows can be hyperexcitable and dangerous.

To prevent grass tetany, supplement winter hay and early spring pasture with magnesium oxide in salt, mineral or grain mixes. Make sure every animal ingests about two ounces of magnesium oxide each day. Molasses magnesium blocks are specifically made to prevent grass tetany; they are handy but expensive. Also feed hay before animals are let out on lush spring pastures to transition them over to pasture slowly.

For more information:
www.oznet.ksu.edu/library/lvstk2/MF976.PDF
http://edis.ifas.ufl.edu/DS137

Can You Identify Fatal Hazards on Your Farm or Ranch?

The following article is provided by the Center for Research on Occupational and Environmental Toxicology (CROET), Oregon Fatality Assessment and Control Evaluation (FACE), at Oregon Health Sciences University. Call 503-494-2281, email to orface@ohsu.edu, or visit their website at www.ohsu.edu/croet/face for more information.

Six workers are killed each year on farms and ranches in Oregon.

Person Outside Vehicle

Moving combine

Polk County 2003

A 32-year-old grass farmer was killed when he fell under the rear wheel of his moving combine. Entering a new field after making adjustments to the combine, the farmer exited the cab to check the seed flow at the rear while the combine was operating. The farmer was wearing cowboy boots instead of his usual sneakers, and he may have tripped. The rolling rear wheel pulled him under.

Climbing on skid steer

Tillamook County 2005

A 12-year-old girl was killed at her family's dairy farm while climbing on a skid-steer loader while it was running. The girl's mother was operating the skid steer with an agitator attached. The daughter was getting in the machine to take her mother's place when the skid steer started bouncing. The victim lost her balance and was crushed between the frame and the bucket arm.

Rolling tractor

Gilliam County 2005

An 81-year-old rancher was killed when he was run over by a tractor he was operating. The rancher was using an articulated scoop loader to move straw. He exited the operator's seat to open a gate, without shutting down the engine. The tractor started to roll, and the rancher apparently tried to climb back on to stop it. The rear wheel rolled over him.

Safety Recommendations

1. On tractors and most other farm machinery, completely shut down the engine before exiting: gear in neutral, parking brake set, power off. Lower forks and attachments to the ground. On bulldozers, give the blade an extra push down. Read the operator's manual for specific safety instructions.
2. Do not trust the stability of heavy mobile machinery on an incline.
3. Block tires before working beneath a vehicle.
4. You are not a superhero. Do not try to stop a rolling vehicle with your body.

Operating a vehicle and working with machinery are the most common sources of fatal injury.

Tractors

Overturned tractor

Malheur County 2005

A 17-year-old tractor operator was killed on the family farm when his tractor overturned. The operator was driving on a dirt road in an older-model tractor, with a large implement attached to the back. The tractor veered off the road over an embankment toward a

separate field when it overturned in the soft dirt. The victim was crushed by the rear fender and seat of the overturned tractor.

Safety Recommendations

1. Be sure the tractor has rollover protection and seatbelts. Wear the seatbelt securely. For older tractors, retrofit kits are available.
2. Drive slowly on uneven ground or when the road surface changes. Sideways force multiplies exponentially with speed, so even a small bump at a low speed can unbalance a tractor.
3. Use extra caution on slopes, especially when moving with an elevated load. Keep the load low to the ground.

Farm Trucks

Farm truck in ditch

Klamath County 2003

A 20-year-old farm truck driver was killed when his loaded potato truck veered onto loose soil at the edge of an irrigation ditch and overturned. The truck cab was submerged in water in the ditch. The truck had no seatbelts and the driver probably drowned. The incident occurred about 9:30 p.m., after the driver had worked 13 hours on his sixth day of work in a row. Weather was dark and windy. The medical examiner reported the victim was slightly intoxicated. Empty beer cans were found in the cab.

Loaded wheat truck

Sherman County 2004

A 63-year-old farmer was killed when his fully loaded wheat truck failed to negotiate a corner and ran into a rock embankment. The truck had several mechanical problems. The farmer was not wearing a seatbelt and was ejected from the vehicle. Speed was apparently not a factor. The medical examiner reported the victim's blood alcohol content was over the legal limit.

Safety Recommendations

1. Do not drink alcohol during or before work, especially when driving. Even small amounts of alcohol can impair judgment and performance.
2. Avoid driving while drowsy.
3. When you drive near an abrupt edge, keep your eyes on the road. If distracted even for an instant – stop.
4. Keep your vehicle in good repair. Fix faulty brakes right away.

All-terrain vehicles

ATV in ditch

Klamath County 2006

A 62-year-old ranch manager was killed when he was flipped from the all-terrain vehicle he was driving and broke his neck. The ranch manager was helping to drive about 300 head of cattle from a distant field, together with two ranch hands, each driving an ATV. The ranch manager drove at the rear with his 7-year-old grandson riding on the gas tank in front of him. While crossing a shallow irrigation ditch at a slow speed through foot-high grass, the front wheel caught at the base of the ditch and the ranch manager was ejected over the top of his rider. The victim died shortly afterward. The young rider was not seriously injured.

Safety Recommendations

1. Wear a helmet and other protective gear when riding an ATV. Gear includes a helmet, eye protection, gloves, long pants, and sturdy boots.
2. Know the terrain. Drive slowly in unknown areas and stay alert for concealed hazards, such as a ditch or a rock in tall grass, or unknown terrain on the far

"The worker fatality rate in agriculture is far greater than the average worker fatality rate in Oregon."

side of a hill.

3. Inspect the ATV before you ride. Be sure controls work properly and you can easily reach them. Do not ride an ATV too big or too small for you.
4. Train before you ride. Read the operator's manual and get safety tips from a rider who knows that particular machine.
5. Do not carry a passenger on an ATV or other mobile machinery unless an appropriate seat and safety harness are available. The extra weight can cause loss of balance and control.

Fall Hazards

Hay trailer

Klamath County 2005

A 42-year-old rancher fell 12 feet off a trailer onto his head, and died 2 weeks later. The rancher was feeding hay to horses from the top of a trailer when the string broke on a bale he picked up, sending him backward off the trailer. The rancher went to the hospital and was discharged 4 days later. He returned 2 days before his death with shortness of breath. Cause of death was a massive pulmonary embolism.

Safety Recommendations

1. Three-point rule: Get a firm grip with three of four limbs, especially in icy conditions.
2. Beware of losing your balance from an unexpected release of a weight you are carrying or pulling, or from overreaching.
3. Make sure ladders are in good condition and secure.
4. Avoid standing up from a kneeling position next to a ledge – momentary dizziness can upset your balance.
5. Cover and guard holes securely.

Augers & Drivelines

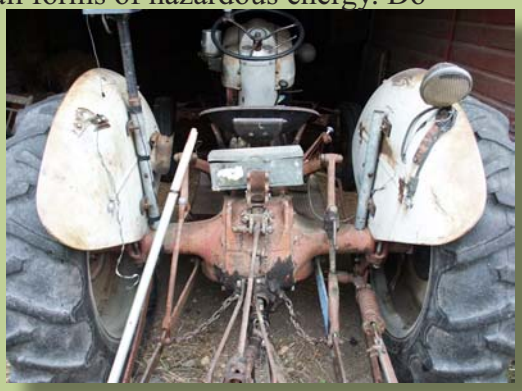
Drill rig entanglement

Union County 2005

A 64-year-old drill-rig operator was killed while drilling water well, when he attempted to recover a hose that dropped down the drill shaft. The machine was in operation, and the operator's fingers were caught under a loop of chain running on a pulley. His hand, arm, and then his entire body were quickly drawn into the pulley. A coworker, untrained to start or stop the engine, began pulling out wires until it shut down.

Safety Recommendations

1. Prior to performing maintenance operations on any machine, make sure to de-energize, isolate, and block all forms of hazardous energy. Do not get near an augur or unguarded power take-off (PTO) driveline during operation.



2. Repair or retrofit old equipment to shield any unguarded PTO drivelines.
3. Learn to recognize and avoid hazards. Train all workers in safe practices, and hold regular safety meetings where hazards can be reported and discussed. Continually reinforce safe work behavior.

Water Pressure

Irrigation riser

Deschutes County 2006

A 42-year-old ranch hand was struck in the eye by pressurized water from an irrigation line, and died 5 days later. A riser valve failed when the ranch hand was disconnecting the line. The explosion of water severed an artery in the victim's eye.

Safety Recommendations

1. When working with a pressurized water system, stay clear or guard yourself from the outlet path where valves and hoses connect.
2. Components of a pressurized irrigation system should be inspected for defective parts at least annually.
3. Establish an emergency plan for personnel who work alone.

Calendar

June

28-Introduction to Organic Farming and Gardening
Pest Management: However fascinating you find flea beetles, no matter how peacefully you coexist with aphids, and whether or not you've planted an extra row of beets for the leaf miners, there are times when treatment of pests is called for. We'll overview common beneficials, pests, and modes of preventative and direct treatment, emphasizing nontoxic methods. To finish, we'll scan the garden for friends and foes. Workshop series introducing practical organic agriculture skills through hands-on learning and small group instruction at Zenger Farm's six-acre field and garden sites. 10:00 AM - 12:30 PM Zenger Farm 11741 SE Foster Road Portland, OR, 97266. Please contact Ryan Hofrichter at ryanlee.hofrichter@gmail.com or 786-972-1333 for more information! ***$25***

July

5-Introduction to Organic Farming and Gardening
Cover Crops: Triticale, vetch, or rapeseed may not be the first crops on the beginning gardener's mind, but these plantings - among many other Oregon cover crops - can provide the essential roles of fixing nitrogen, capturing nutrients, smothering weeds, suppressing pests, and disease, and protecting soil surface and structure. We'll examine the factors worth considering when selecting a cover crop and touch on other fall/winter possibilities in the garden, such as cold-tolerant veggies or mulching.. 10:00 AM - 12:30 PM Zenger Farm 11741 SE Foster Road Portland, OR, 97266. Please contact Ryan Hofrichter at ryanlee.hofrichter@gmail.com or 786-972-1333 for more information! ***$25***

September

25 to 27 - Oregon Flock and Fiber Festival
Workshops on Friday, September 25 Clackamas County Fairgrounds-Canby, Oregon.Activities for the whole family-livestock and fiber shows-workshops-Fiber sales and competitions-Annual Cook Off 9 a.m. - 5 p.m. Saturday 9 a.m. - 4 p.m. Sunday For more info or for Catalog contact Whistlestop.farm@verizon.net or 503-628-1205 http://www.flockandfiberfestival.com
FREE ADMISSION & PARKING

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 email Chrissy.Lucas@oregonstate.edu or call 541-766-3556