2009 Farm Walk Education Series

Monteillet Fromagerie, Monday May 18, 2009

Presented by
Tilth Producers of Washington and the WSU Small Farms Team
FARMER-TO-FARMER: PASSING ON THE WISDOM - 2009 Farm Walk Education Series
Tilth Producers of Washington and WSU Small Farms Team proudly present the 2009 Schedule

Monday April 13 – Terry’s Berries, Tacoma, Recordkeeping in a Diversified Vegetable & Fruit Operation, 12:30pm-4pm, www.terrysberries.com

Monday April 27 – Lopez Island Farm, Lopez Island, Pastured Pigs and Soil Fertility, 10am-1pm, www.lopezislandfarm.com

Monday, May 18 – Monteillet Fromagerie, Dayton; French Cheesemaking in the Walla Walla Valley, 12:30pm-3:30pm (followed by optional wine & cheese tasting), www.monteilletcheese.com

Monday June 8 – Crown S Ranch, Winthrop; Organic Animal Husbandry, 12:30pm-4pm, www.crown-s-ranch.com

Monday June 22 – Estrella Family Creamery, Montesano; Artisan Cheese Production, 12:30pm-4pm http://estrellafamilycreamery.com

Monday July 13 – Let Us Farm, Oakville, Organic Mixed Vegetable Production and Farmer Transition, 12:30pm-4pm

Thursday July 30 – WSU Field Day and Organic Farm, Pullman; Current University Research and Teaching in Organic Farming – Eastern Washington, 9:30am-1pm, www.css.wsu.edu/organicfarm

Monday August 3 – WSU Field Day and Organic Farm, Puyallup; Current University Research in Organic Farming – Western Washington, 1pm-4pm; www.puyallup.wsu.edu/soilmgmt

Monday August 17 – Alvarez Farms, Mabton; Large Scale Diversified Vegetable Row Crops, 12:30pm-4pm http://smallfarms.wsu.edu/wsu_pdfs/AlvarezCaseStudy.pdf

Monday September 28th – Blue Dog Farm, Carnation; Berry Production, Static Composting, and Raising Children while Farming, 12:30pm-4pm, www.bluedogfarm.com

Farm Walk Logistics - Complete details at www.tilthproducers.org
More information also at http://smallfarms.wsu.edu
Farmer-to-Farmer: Passing on the Wisdom

2009 Farm Walk Education Series

Sponsored by the WSU Small Farms Team (smallfarms.wsu.edu)

and Tilth Producers of Washington (www.tilthproducers.org)

Monteillet Fromagerie ~ 109 Ward Rd.
Dayton, WA - 98328  509.382.1917

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Farm Walk Evaluation Form...

Please fill out and leave at the site
THANK YOU!!!
Monteillet Fromagerie

Monteillet Fromagerie, the first farmstead artisanal cheese facility in the Walla Walla Valley of Southeastern Washington is a destination for folks who love fresh goat and sheep cheeses paired alongside award winning wines crafted locally. For animal lovers, visiting the dairy flocks is a must, guarded by Tino, Jolie Neige, Lucille and Brava, the four Great Pyrenees, and Marti, a Boarder Collie. The other farm menagerie, including chickens, ducks, lambs, goats and many cats, coexist on the 30 acre farm located along the Touchet River (pronounced too-shee), which is the shortcut route that the local Nez Perce Indian tribes showed Lewis & Clark on their return trip.

As a Grade "A" dairy and a farmstead cheese facility, the most important characters are our beautiful, registered Alpine goats and East Freisan-Lacaune sheep. Both breeds produce a high butter-fat content milk which in turn creates a creamy all natural cheese, free from additives, antibiotics, and preservatives. Only the best quality alfalfa hay and natural grains supplement their diet along with pasture grazing. It is true, you are what you eat.

Our Cheeses

Causse Noir, is our tomme style, aged 3-6 months in our cellar. A mixture of 2/3 goat s milk 1/3 sheep milk, a nutty, rich flavor semi-hard cheese.

Fresh Chevre, the freshest cheese we make, is 48 hours from morning milking to finished soft cheese. A very mild, slightly salted cheese, excellent on salads, in pasta dishes or omelets.

Fresh Herbed Chevre, is the same fresh chevre made with an organic bouquet of basil, summer savory, Italian parsley, chives, and cilantro, grown at our farm. A ready to eat hors d'oeuvres, can be used on sandwiches in place of mayonnaise.

Larzac, a soft ripened goat cheese divided in half by a line of vegetable ash made from grape leaves and vines. Tender in texture, subtle, nutty flavor with a delicious edible rind. aged in the cellar for 7 days.

LeRoi, is a petit chevre, soft ripened, dusted in grapeleaf ash imported from France, cellared for two weeks and crowned with pure gold dust. Fit for a Queen or King!

Pérail, A traditional southern French style soft ripened sheep cheese - one of our favorites. Luscious!

Provencal, a marinated goat cheese nestled in olive oil, sprigs of rosemary, sliced garlic, pink peppercorn berries, savory and a few drops of truffle oil. Reserve the extra virgin oil for vinaigrettes, a perfect picnic companion with great bread and a red wine.

Mejean Rouge, a Slightly drunken sheep cheese marinated in local Walla Walla syrahs et malbecs.

Mejean, a soft ripened sheep cheese cellared 1 month.

Sauveterre, is our pure sheep milk semi-hard cheese, cellared for 2-6 months depending on the size of molds used. Subtle buttyer flavor with a smooth texture in the younger tomme and a more crystalline texture in the older ones.
CHEESE MAKING

WRITTEN BY Picky Heasley

A DAY ON THE FARM WITH THE MONTEILLETs

I'm a city girl, born and raised in Cleveland, Ohio where my experience with farms was a field trip in school. However, I'm also a child of the '60s. Therein lies the soul in search of connections, love of the land, and caring for others. That is the part that I loved, the sense of community I felt from the very moment we set foot (or should I say tire) on the Montellet Fromagerie property, located two miles west of Dayton, on Highway 12. My editor and I drove to Dayton on a foggy, wintry day in December. The area received an unusual amount of snow. The drive was beautiful, highlighted by incredible scenery, made even more so by the incongruity of the snow. Vineyards were dusted white, hay stacks were covered, and a small plane was doing its best to stand under the weight of the latest winter storm.

We had no problems until we pulled into the drive of the Fromagerie. We had been warned by Joan
Montillet that it could be dicey, but we gave it a try
anyway and knew instantly we were stuck. I called Joan
and, within minutes, there she was, cheerfully walking
to us, snow shovel in hand. It's been a long time since
I've felt that welcomed.

Joan and her husband, Pierre-Louis, opened the
Fromagerie for public tasting two years ago, although
they began making cheese in 2002. Pierre-Louis grew
up in the Roquefort area of South Central France, so
cheese making was not totally foreign to him. Pierre-
Louis and Joan met at a pensione in Oaxaca, Mexico
while both were on vacation in 1978. At the time, Joan
was cooking at the Left Bank in Walla Walla. After the
vacation, Pierre-Louis hitchhiked to Walla Walla and
became the head dishwasher at the Left Bank. They've
been together ever since.

They first farmed Joan's family's 2,000-acre wheat
farm. In 1983, they heard that the four acres in front
of where the Fromagerie now stands were for sale.
They bought the acreage and the shack that came
with it. It took them ten years to make it the home it
is today. In 1989, more of the property came up for
sale and they purchased that. In 2000, they bought
ten more acres, ending up with almost 32 acres.
They then built the Fromagerie building, and that
was when their plan to make cheese began. With
the evolving wine production in Walla Walla, cheese
seemed to be the perfect complement to the local
culture. Basic traditional French cheeses were the
basis of their business plan, combined with a focus
on true self-sustainability. In 2001, they went back
to Europe and visited cheese makers in France and
Switzerland, spending a month learning all they could
about how to make the best goat- and sheep-milk-
based cheese. Their first cheese produced in their
Fromagerie was chevre, the simplest to make, just 48

hours from fresh milk to cheese.

Cheese making may sound glamorous, but it is
constant work. The goats and sheep are milked twice
a day, nine months of the year. The milking process
itself takes two hours, but the whole process takes
five hours: two hours for milking and three hours
of cleaning. That's ten hours a day just for the milk
process. Three goats or sheep are milked at a time,
enticed by grain to enter into the milk parlor. The milk
has to be kept at 40 degrees and pasteurized at 145
degrees for one half hour. At 85 degrees, a culture
is introduced to make different cheeses. Vegetable
rennet, made from fungi, is added to the milk.
Vegetable rennet is used so vegetarians can enjoy
Montillet cheeses. Once the cheese is curdled, it is
into bags or molds. Any cheese put in vats is drained
to catch the whey that is then fed to their pigs, a true
symbiotic relationship to support Montillet's mission
of sustainability.

Hard cheeses need to be heated up, and the curd
must be cut. This changes the texture and makes it
more rubbery than soft cheeses. It is then pressed to
give any moisture out. The pasteurization process, from
start to lading, takes 24 hours.

Cheese is not the only thing you'll find at Montillet.
Everywhere we looked, there were animals. We were
greeted by a cat who found the one dry spot under
the eave of a building. Another cat showed me around.
The alpine milking goats were everywhere, very friendly and very curious. The East Frisian Lacaune sheep kept to themselves. The Great Pyrenees dogs were as sweet as they were big. And the chickens liked hanging out in the trees. I didn’t see the pigs the day we were there, but loved to hear Joan talk about how much fun the pigs had playing in the fresh snow. That’s why I would love to see. I wonder if they squeal with light.

As further proof of the sustainability the Montillet family, they sell the pork from their pigs. The whey-fed pigs are also free range and weigh about 300 pounds. Since they are so tender, there is no need to cure, so it’s a healthier cut of pork. The Montillet family also have lamb, goat, chicken, and eggs to sell. Pierre-Louis leaves their home on a weekday afternoon to drive to Portland to sell their cheeses at the Farmers Market on Saturdays (during the week), returning home on Saturday night to begin the weekly cheese making. That’s a lot of driving in a very short time that ends in a lot of work back at Fromagerie. That should change soon with the addition of their former intern, Jackie Freeman, who will become the lead cheese maker, leaving Pierre-Louis more time to go to more Farmers’ Markets around the area. Joan and Jackie will be selling their cheeses at the Moscow, Idaho Farmers’ Market and the Walla Walla Farmers’ Market.

You can also find their cheeses at restaurants around the Northwest, such as Creek Town Café, Saffron, T. Trigg’s, The Marc, and Bon Appétit in Walla Walla, Whoopeeup Hollow Café and Jimgermanbar in Walla Walla, and the Weinhard Café and Patt Creek Restaurant in Dayton. In Richland, Tagaris Taverna and Meadow Springs Country Club serve Montillet cheeses. In Seattle, you’ll find them at Tilth, Rovers, Boka, and Earth and Ocean. Many private clients order their cheese for parties and wine dinners. Dunham Cellars, L’Ecole, Isenhower Cellars, Pepperbridge, Woodward Canyon, and Dumas wineries in Walla Walla serve Montillet cheeses at openings and wine dinners.

We sampled some of their cheeses with some local wines and found them all different and delightful. The first we tasted was Causse Noir, named after the
plateaus around Pierre-Louis’s hometown of Millau. A mixture of two-thirds goat’s milk and one-third sheep’s milk, this semi-hard cheese is aged three to six months. Next we tasted their Larzac, a pure goat cheese, soft with a layer of grape-leaf-and-vines ash. This signature cheese is aged in the cellar for two to three weeks. LeRoi Noir, a petit chevre, is soft ripened and dusted in grape leaf ash from France. This cheese is cellared for two weeks and sprinkled with pure gold dust, the Black King (LeRoi is French for The Black King) crown. Sauveterre was next, their pure sheep milk, semi-hard cheese, aged for two to six months. Our final tasting was the Provençal mix, a marinated goat cheese in olive oil, rosemary sprigs, sliced garlic, pink peppercorn berries, savory, and a few drops of truffle oil. We were hard pressed to pick a favorite. They were all unique and incredibly flavored. I think our tasting was further enhanced by the company of Joan and Pierre-Louis and a few of their Waitsburg friends who joined us.

The Montellets believe firmly in giving back to the community, both locally and globally. Their love for Waitsburg is obvious, as is their desire to share their joy with others. According to Joan, “Waitsburg has a huge sense of community. We all help each other out.” One way they help out the global community is to host interns from all over the world for two to three months to teach them about organic farming. They are listed on the wwoofies site, and that is how potential interns have contacted them. Curious as to what a wwoofie is, as I was? Wwoofies stands for World Wide Opportunity for Organic Farmers. I couldn’t think of a better place to learn about organic farming and giving back.

A three-bedroom guest house on the property is available to rent. The house can be rented by one co for $200 the first night for one bedroom. Each additional bedroom rented costs $100. If you want to visit in the spring or the fall, call in advance to reserve, as these are the most popular times.

The spring would be a great time to be there. You can join in and help with the farming chores. If you
oy, you might get to assist with the birth of a goat multiples. They start giving birth in February. They all have twins, sometimes triplets. "From February on, it's unbelievable," Joan said. By May, all of the kids have been born. Gestation is five months. kidding season is mid-September through October. It's when the days are shorter and the goats like it. The female goats go into heat every three weeks. The Montelliers know when the mothers are due to give birth because their milk dries up around day before and they don't produce milk until the day time comes to give birth. I'm hoping to go back around that time to see if this city girl is ready to be a part of the birthing process.

Our day ended far too soon. It was a delightful visit that I will cherish. Now, it's your turn. Take a ride to visit the Fromagerie and get to know the Montelliers. It will be a drive and a visit that will touch your soul and awaken all of your senses.

The tasting room is open Saturdays and Sundays from 1-5 p.m. and by appointment by calling 509-876-1429. Their address is 109 Ward Road, Dayton, WA 99328, milepost 365 off of Highway 12, west of Dayton.

And When She Has Some Extra Time...

Joan stirs a pot of delicious onion and pork stew that she has lovingly prepared for her guests on this winter day.
**Pesticide Disclaimer**

Documents included in this packet may contain information regarding pesticides used in states other than Washington. It is the responsibility of the reader to determine whether those active ingredients or pesticide products are registered for use in Washington State.

Readers are reminded that all pesticide products, including products certified for use in organic production systems, must be registered by the Washington State Department of Agriculture's Pesticide Division in order to be legal.
The Science Behind Compost Teas and Biodynamics
Dr. Lynne Carpenter-Boggs, BIOAg Coordinator
Center for Sustaining Agriculture and Natural Resources, Washington State University

Compost Teas and Biodynamics (BD) are both gaining popularity along with the upsurge in organic and sustainable practices. Both are poorly understood, surrounded by myth and misunderstanding. Both have been over-sold by some practitioners but have very interesting potential, not only for improving agricultural and horticultural production, but also for teaching us a great deal about beneficial microorganisms and biochemistry.

What is compost tea, and what is it used for?

Compost teas are variable in composition, but normally start with 1 part compost plus 10-100 parts water. Other materials may be added such as microbial inoculants, plant growth nutrients, rock powders, or foods (substrates) for microbial growth. This mixture is left to steep for some time, 1 hr to 1 wk (1 day being common), in either static (non-aerated) or aerated conditions. Static soaks are the lowest cost, but can allow anaerobic conditions to develop; aerated brewing will require some added equipment but many options are now available. After the brewing period the solid materials are removed and the solution is used either undiluted or diluted up to 1,000X. As you can see, “compost tea” can mean many things. The processes and ingredients involved in making any tea will change its microbial community, chemistry, and eventual effects on soil or crops. Compost teas can be used directly on crops to supply foliar nutrients and/or to address diseases. Foliar application carries a greater risk of osmotic stress. Teas may also be applied directly to soil to supply nutrients, add microorganisms, and/or add microbial substrates. All of these variables, plus the variability in composts we may start with, lead to tremendous inconsistency in the makeup and effects of compost teas.

Despite widespread anecdotal evidence and some scientific evidence of compost teas’ effectiveness, the subject remains poorly studied actual results vary. In some studies compost teas or extracts have improved plant growth, had no effect, or in a few cases even worsened disease; however there are over a dozen existing studies showing reduction in disease after compost tea application (Table 1).

Table 1. Plant diseases reduced in at least 1 published research study.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Genus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late blight of potato</td>
<td>Phytophthora</td>
</tr>
<tr>
<td>Gray mold on beans</td>
<td>Botrytis</td>
</tr>
<tr>
<td>Fusarium wilt</td>
<td>Fusarium</td>
</tr>
<tr>
<td>Powdery mildew on cucumbers</td>
<td>Sphaerotheca</td>
</tr>
<tr>
<td>Apple scab</td>
<td>Venturia</td>
</tr>
<tr>
<td>Bacterial blight on carrots</td>
<td>Xanthomonas</td>
</tr>
<tr>
<td>Powdery mildew on grapes</td>
<td>Plasmopara</td>
</tr>
</tbody>
</table>

The microbial and biochemical basis for successful or detrimental applications is seldom known. The myriad factors affecting microbial, chemical, plant, soil, and pathogen interactions are complicated and may never be completely understood. Improving the replicability and usefulness of compost tea research will require better replicability in the making of the teas themselves. And although these studies have shown the potential of
teas to reduce disease pressure, the use with greatest untapped potential is for foliar nutrient application.

What is Biodynamics, and what is it used for?

Biodynamics is an esoteric brand of agriculture created by Austrian philosopher Rudolf Steiner. Biodynamic farms can be certified under the Demeter label. Steiner is also the father of the philosophy “anthroposophy,” anthroposophic art, anthroposophic medicine, Waldorf schools, Camphill communities, Eurythmy dance, and several other movements in science and culture. Biodynamic practices draw on ancient European farming mythology and new impulses from Steiner.

Biodynamic farming is not only a set of methods, but is also founded in a philosophical system relating to the overall structure of the farm. Biodynamics is at its heart based on the creation of a farm that functions holistically as an intact organism with its soil, animals, humans, and plants acting as “organs of a living organism.” The health of the farm organism depends on each organ working properly in concert with the others as well as with its environment. Energies must flow between the human, animal, plant, mineral, and the cosmic. Following these ideals creates agriculture that is as far as possible self-supporting. Biodynamic farms attempt to form a nearly closed system, with as much of its inputs (such as fertilizers) as possible coming from within the farm. For instance compost and legumes supply most fertilizer needs, and control of weeds and pests is generally achieved through mechanical or physical controls, homeopathy, rotations, and other non-commercial means. Crop growth depends on organic soil fertility, which depends on well-managed livestock. Demeter certified farms must include livestock or have a close relationship with a nearby livestock farm. Biodynamics was envisioned to not only produce ample food and fiber, but also to heal and nourish the people who depend on these products by healing the soil, plants, and earth. Some but not all biodynamic farms use astronomical calendars and other cosmic indicators to determine the timing and type of farm activities.

Biodynamic farms are essentially unique in their use of homeopathic BD preparations. The preparations are made from common plants and materials, but each undergo unique fermentations before use. For instance the best known, Preparation 500 the “cow horn preparation,” is made by stuffing a well-formed cow horn with healthy cow manure, burying this horn in the ground in the fall, and uncovering in spring. The material is transformed over winter to a fine, rich compost-like material that is used at a very low dose. Approximately 2 Tbsp is intensively stirred into water for 1 hr, then sprayed onto 1 acre of soil just prior to planting.

Table 2. Main ingredients of Biodynamic preparations.

<table>
<thead>
<tr>
<th>Preparation Number</th>
<th>Main Ingredient</th>
<th>Preparation Number</th>
<th>Main Ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>Cow Manure</td>
<td>502</td>
<td>Yarrow</td>
</tr>
<tr>
<td>501</td>
<td>Silica</td>
<td>503</td>
<td>Chamomile</td>
</tr>
<tr>
<td>508</td>
<td>Equisetum</td>
<td>504</td>
<td>Stinging Nettle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>505</td>
<td>Oak bark</td>
</tr>
<tr>
<td></td>
<td></td>
<td>506</td>
<td>Dandelion buds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>507</td>
<td>Valerian</td>
</tr>
</tbody>
</table>
In research by others and myself biodynamic management has been shown to benefit overall soil quality, increase available N and P, and increase both earthworm and microbial populations as compared to conventional agricultural management. Most of these benefits are due to increased use of compost, legumes, and other organic inputs to the soil. The unique BD preparations do seem to “build a better compost” with slightly higher temperature, slightly faster decomposition, and retention of more of the initial nutrients. In my own research we could detect differences in the microbial communities in compost with vs. without the BD compost preparations, as well as in soils fertilized with BD compost vs. untreated compost. Large changes in soil chemistry or crop production due to use of the BD preparations are generally not observed in short-term studies, but growing populations of BD growers claim to have increased soil fertility.

How might they work?

The primary likely modes of operation for both compost teas and BD preparations are: nutrient addition (primarily micronutrient), microbial inoculation, plant immunity stimulation, plant hormones, and microbial signaling.

Compost teas and BD preparations do contain some nutrients, but generally at very low concentrations. It is very unlikely that applications of teas or preparations onto soil will have any noted effect on macronutrient or even micronutrient availability. Using foliar application, however, small amounts of nutrients can be directly applied to and taken up by plants. Micronutrients in particular can have significant benefit to plants when applied even at very low concentrations. However, any nutrient will only increase plant growth if that particular nutrient is not yet adequate for the plant’s growth stage. Effective foliar fertilization, whether by commercial or alternative materials, should be guided by plant tissue nutrient analysis or known deficiencies.

Compost teas and BD could also change the plant or soil microbial community. The microorganisms in compost tea will be essentially those found in the initial compost, but population dynamics and activity rates will be altered by the nutrients, oxygen status, and temperature during tea fermentation. The organisms in compost tea or BD preparation will be added to the microbial community on the plant or soil surface. However, any added microbes will be short-lived without the proper environment. Available foods and conditions will determine the microbial community, and knowing the needs of beneficial organisms can make it possible to culture them. Repeated application and/or habitat enhancement is usually necessary to change a microbial community over the long term (Fig. 1).

Although it is difficult to directly change microbial communities, the community make-up and/or its activities can be affected by microbial signaling. Microorganisms communicate with each other by several means including through volatile or diffusible molecules. Individual microbes can release tiny amounts of hormones or other signals, that reach other microbes and may induce a change in their activity. One type of these signal molecules are antibiotics, produced by many soil and compost microbes to reduce the growth of other populations. Other compounds can increase growth rates or reproductive rates of microbes in the same species. The chemistry and complexity of microbial signaling is a new frontier in microbiology.

Another reason compost teas and BD preparations are gaining popularity and interest is for disease inhibition. Teas and preparations could suppress plant pathogenic
organisms through competition, predation, antagonism, or inhibitory compounds from the compost tea microorganisms. In some cases compost teas have also been shown to induce “systemic acquired resistance” in plants. This is similar to a plant vaccination or overall immune system stimulation. Typical plant responses to pathogenic attack such as production of chitinase (an enzyme that breaks down fungal cell walls) and thickening of plant defensive cell walls can be stimulated PRIOR to actual attack by a pathogen. When and if a pathogen does attack, the plant is prepared for defense, and stands a much better chance at survival. This systemic acquired resistance has been induced in several studies by silica solutions (including BD silica preparation 501) and harpins, as well as some compost teas (Fig. 2).

Plant hormones applications are not uncommon in horticultural production. They are used to induce budding, induce rooting, or change plant physiology in other ways. Several studies have identified plant hormones such as auxins and cytokinins in composts, vermicomposts, and BD preparations.

On-farm Testing

The use of compost teas and BD on hundreds of farms and greenhouses suggests they may be effective in the right circumstances. Successful use of any new material requires on-farm experimentation and diligent record keeping. Take note of the timing and conditions during composting, tea making, and application. Always include a “negative control,” an area or set of plants that receives no treatment or only water spray. A “positive control” or your usual method should also be included as one of the treatments. Try more than one compost source or tea fermentation method, since different compost teas can certainly have different effects. Apply each different tea to several (preferably 3-4) field areas or sets of plants to assure that results are consistent. The more care taken in experimental tests, the more reliable the results.

Citing this paper:
Figure 1. General effects of soil inoculation.

Population

Enhanced Habitat
Poor Habitat

Time

Inoculations

Figure 2. Plant immunity stimulation after treatment with silica spray.

Days after treatment

Defense compounds

Pathogen Attack

silica
no spray

Live Plant
Dead Plant
Milk and Dairy Products

Farms selling cow, goat, sheep or other lactating mammalian milk directly to consumers from the farm, at farmers markets, on the Internet, through retail grocery stores or any other means must obtain a Milk Producer License and a Milk Processing Plant License from the Washington State Department of Agriculture (WSDA).

The WSDA Food Safety Program provides one-on-one technical assistance for dairy farms and milk processing plant to help you produce safe dairy products. Milk is a potentially hazardous food product because of its ability to support pathogen growth. It is important to reduce the risk of unintentionally contaminating your milk product. The WSDA Food Safety Program helps you reduce risk by advising you about your farm and milk processing plant design, construction materials, equipment, heating and cooling procedures, water source, and food science techniques for preventing cross-contamination from the farm to your milk processing plant.

Farms licensed by WSDA as a Milk Producer and a Milk Processing Plant can process pasteurized milk from neighboring farm raw milk supplies. Contact the WSDA Food Safety Program for food safety requirements when hauling milk from a neighboring farm to your milk processing facility.

Fluid Milk Sales

Pasteurized Milk (retail & wholesale)
Pasteurized fluid milk processed by a licensed WSDA milk processing plant can be sold direct to consumers and through all food distribution channels in Washington State and out of state.

Retail Raw Milk
Raw fluid milk produced by a licensed WSDA milk producer and bottled at that farm’s licensed milk processing plant can be sold direct to consumers from the farm, at farmers markets, on the Intranet, or through grocery stores within Washington State.

Raw milk sold in Washington State must bear the following labeling as required by state law (RCW 69.04 and 16-101-990 WAC.)
1) Identification of the product, including the word “Raw” in clear lettering;
2) Name and place of business of the producer or packager;
3) The quantity, weight, and grade of the milk;
4) The words “WARNING: This product has not been pasteurized and may contain harmful bacteria. Pregnant women, children, the elderly and persons with lowered resistance to disease have the highest risk of harm from use of this product”.

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When selling raw milk, a sign must be posted near the product that states: "Warning: Raw milk or foods prepared from raw milk may be contaminated with dangerous bacteria capable of causing severe illness. Contact your local health agency for advice or to report a suspected illness." (246-215-051 WAC)

Wholesale Raw Milk
Raw fluid milk produced by a licensed WSDA Milk Producer can be sold for further processing to a licensed WSDA milk processing plant, food processor or animal feed processor.

Contact the WSDA Food Safety Program to talk about the licensing requirements before submitting your license application.

Animal Health Requirements

It is illegal to sell or deliver milk or milk products produced from diseased mammalian animals. All milking mammals must meet the animal health requirements established by the state veterinarian in chapter 16.36 RCW. Mammalian animals showing chronic mastitis are not allowed to be part of the milking herd.

Raw milk intended to be consumed in the raw state must come from a herd that has tested negative within the previous 12 months for brucellosis, tuberculosis and other diseases designated by the state veterinarian. Animals must be tested yearly thereafter to assure their health. Additions to the herd must test negative for the diseases within the previous thirty days before introducing them into the herd.

Cheese, butter & Other dairy products

Dairy farms wishing to process cheese products, butter, and/or other dairy products must obtain a Milk Producer License and a Milk Processing Plant License from WSDA.

Cheese can be processed from pasteurized milk or raw milk. If processing cheese from raw milk, the cheese must be aged at not less than 35° F. for at least 60 days.

Other value-added dairy products (e.g. chocolate milk, buttermilk, egg nog, yogurt) can only be processed from pasteurized milk.

Licensing & Fees

- Milk Producer License: Free
- Milk Processing Plant License: $55.00
• Contact the WSDA Food Safety Program for one-on-one technical assistance for your dairy farm or milk processing plant.
• The Food Safety Program can help you with
  ➢ The application process for your license
  ➢ Design layout for your milking parlor, milk house and milk processing plant
  ➢ Approval of equipment you are seeking to purchase
  ➢ Evaluation of your water source and cross-connections
  ➢ Food science handling and processing techniques to help produce a safe, quality product for your customers.
• Application packets are available through the web site listed below.

  **Contact:** Washington State Department of Agriculture
  Food Safety Program
  (360) 902-1876
Additional Online Resources

Dairy Sheep and Goats:

www.sheepandgoat.com

http://www2.luresext.edu/goats/index.htm

http://agr.wa.gov/FoodAnimal/Dairy


ATTRA: Free Download of Dairy Goats: Sustainable Production is located:

Herd health on organic dairy farms, WSU Extension: http://www.extension.org/article/18322

Cheesemaking:


Vermont Institute for Artisan Cheese: Dedicated to Education, Research & Service http://www.cheesesociety.org/displaycommon.cfm?an=1&subarticlenbr=22


Dairy farmers can add value to their milk by processing and marketing their own products, such as cheeses, yogurt, butter, ice cream, and farm-bottled milk. Many consumers are willing to pay a premium for locally produced, high-quality, farmstead dairy products; organic certification may further enhance the market potential.

Developing a product line, production facilities, and a niche marketing strategy will take time, money, and commitment. It is unlikely that the enterprise will be profitable in the first three to five years. Additional skills beyond producing milk will be required. Here are some basic questions dairy producers need to ask themselves before they get into processing and marketing:

- Do I have the resources to do this?
- Do I really want to do this?
- Do I have the experience, people skills, and information to do this?
- How much profit potential is there with this enterprise?
- How will I market the product and what is the customer base available?
- Do I have the financial resources needed to support this enterprise during the start-up period?

Regulations

Dairy food processors—including small farms adding value to their own dairy commodities—are subject to a dizzying array of state and local regulations and inspections. Aspiring processors should check carefully with regulatory authorities for specific requirements during the planning stages of the enterprise, and once again as the equipment is ready to be installed. Some states may have training requirements for persons intending to process dairy food products.

State and local regulatory agencies have primary responsibility for enforcement of sanitation requirements on dairy farms and at dairy processing plants. Producers must contact their Department of Agriculture (Department of Health in Arkansas) for specific regulations and requirements before proceeding with any other steps. The National Association of State Departments of Agriculture has a directory at <http://www.nasda-hq.org/nasda/nasda/member_information/gen_main.htm>. A more general listing of all state and local regulatory agencies by state is available at the FDA’s Directory of State Officials 2001 at <http://www.fda.gov/ora/fed_state/directorytable.htm>.
Law professor Neil Hamilton's 235-page *Legal Guide for Direct Farm Marketing* is a good source of information about laws on marketing products directly to consumers and to retail and wholesale buyers. It was written to address producers’ questions about the legal aspects of direct farm marketing. The book provides many contacts and resources across the U.S., including state and federal inspectors, organizations, and others. The cost of the book is $20.00. To order, contact Drake University Agricultural Law Center, Des Moines, IA 50311, (515) 271–2947.

**Organic Milk**

At the time of this writing, the National Organic Program (NOP) is scheduled to begin implementation of the Final Rule for national organic standards in September 2002. As of this date, any producers seeking initial certification will have to comply with the requirements of the Final Rule. Producers who are already certified (by an agent that has received USDA accreditation) will have to achieve compliance with the NOP standard at their next annual inspection. For additional information on organic certification, request ATTRA's *Organic Certification & The National Organic Program* or visit NOP's website and review the Final Rule’s standards for organic dairy production at <http://www.ams.usda.gov/nop/nop2000/nop2/finalrulepages/finalrulemap.htm>.

Demand for organic milk and milk products continues to grow nationwide. The *Organic & Natural News* article "Return to the Golden Age of Dairy" (1) states:

According to SPINS/ACNielsen, the organic dairy industry has experienced tremendous growth in almost every category it tracks. Organic milk gallons have taken the gold medal with a 148.8-percent increase in the 12 months ending July 2000 compared to the previous year. Other categories have made incredible leaps as well. Sales of organic cottage cheese and ricotta have risen 53.58 percent with packaged organic cheese, organic butter and organic sour creams trailing closely behind; all posted increases in the 30-percent range.

The growing demand for organic dairy products is driven primarily by consumers' belief in the higher quality and safety of these products, and their awareness of the positive environmental, animal welfare, and ethical impacts of organic agricultural practices. Many are concerned about the use of antibiotics and of rBST (recombinant bovine somatotropin), a genetically engineered Bovine Growth Hormone that is injected into an estimated 30 percent of lactating cows in conventional dairies. These are some of the reasons why consumers choose organic dairy products despite higher prices (2).

Organic milk comes from cows that are not given any hormones, antibiotics, or pesticides. They have access to open pastures and are fed 100-percent organic feeds—grown in fields that are chemical-free for at least 3 years. Organic milk must be handled separately from conventional milk and never intermixed. Organic milk and milk products must be processed, either on-farm or off-farm, in a certified organic plant.

*Other ATTRA publications that will help you to plan for value-added production and direct marketing:*

- *Adding Value to Farm Products: An Overview*
- *Keys to Success in Value-Added Agriculture*
- *Direct Marketing*
- *Alternative Meat Marketing*
- *Evaluating a Rural Enterprise.*
Sources of Further Information

The state Department of Agriculture is the best source of help and information. The producer will need to comply with state law first; everything else is secondary.

An excellent source of information is the Hometown Creamery Revival Project. This project is funded by the Sustainable Agriculture Research and Education (SARE) program of the USDA and managed by Ms. Vicki Dunaway. The Hometown Creamery Revival promotes on-farm processing as a means of making dairying a sustainable way of life for small farms.

Currently the project produces a quarterly newsletter, *CreamLine*, and maintains a list of equipment suppliers, events, and links to relevant websites at <http://metalab.unc.edu/creamery/>. A free sample issue of *CreamLine* is available on request. The subscription cost is $22.00 per year or $40.00 for two years. For more information, visit the project’s website or contact:

Vicki Dunaway
Hometown Creamery Revival Project
P.O. Box 186
Willis, VA 24380
(540) 789-7877 (before 9 p.m. Eastern)
E-mail: ladybug@swva.net

The first major publication of the Hometown Creamery Revival, *The Small Dairy Resource Book*, is a 56-page annotated bibliography of books, periodicals, videos and other materials on farmstead dairy processing. These resources cover such topics as on-farm cheese, ice cream, butter, and other dairy processing; business and marketing; food safety and feeds; and grazing. This publication is available online at <http://www.sare.org/handbook/dairy>. To order a printed copy, visit <http://www.sare.org/san/htdocs/pubs/> or send $8.00 plus $3.95 for shipping and handling (check or money order) to:

Sustainable Agriculture Publications
Hills Building, Room 10
University of Vermont
Burlington, VT 05405-0082
(802) 656-0484 (to order with Visa or Master Card)

Artisan Cheesemakers Listserv is the original email list for discussing the production, marketing, and history of handcrafted and artisan cheeses, as well as other dairy products. For additional information visit <http://members.xoom.com/cheesemaker/Cheemakers-L.htm>, or to subscribe <Artisan_Cheesemakers-subscribe@yahoogroups.com>.

In March 2000, the Dairy Creamery Listserv was started. This mailing list was created for small, grass-based, traditional dairy farms and for small-scale processors who are pasteurizing and bottling milk, or making value-added products such as cheese, yogurt, cream, or ice cream, and who are selling either on-farm or within their regions. To subscribe to dairycreamery, send email to <dairycreamery-subscribe@yahoogroups.com>.
The April 2001 issue of Ag Innovative News, from the Agricultural Utilization Research Institute in Minnesota, did a special series focusing on producer-owned dairy processing. The series of articles included "Bottle at your own risk," "Pasturing for profit," "The milk-fed economy," and "Bittersweet end." These articles focus on feasibility studies showing that the prospects are dim for newcomers to enter the current well-established milk processing and distribution system. However, the studies do show niche marketing opportunities in the natural foods market. These articles are available on-line at <http://www.auri.org/news/ainapr01/contents.htm>.

Many electronic resources are available to those with Internet access (see Further Resources: Websites below). Several book suppliers are also listed in the Further Resources section.

References:


Enclosures:


Further Resources

Websites:

**Organic Dairy Information**

http://www.nysvga.org/webpages5/cdcramer/profiles/arnold.htm
Profile of an organic dairy farmer in New York.

http://www.iowafarmer.com/010324/niche_dairy.htm
Article on an organic dairy-processing farm in Iowa.

http://www.organicandnaturalnews.com/articles/0a1Feat2.html
Article about the marketing potential of organic milk.

Article about the marketing potential of organic milk.

Article about a Horizon Organic Dairy farm in Maryland

**Cheese Information**

http://www.cheesesociety.org
The American Cheese Society website listing conferences, articles, and their latest newsletter.

http://www.cheesereporter.com
The Cheese Reporter Magazine website has an excellent searchable supplier directory, a large book and video selection, and lots of links to other websites.

http://www.efr.hw.ac.uk/SDA/cheese2.html
Excellent site on the basics of making cheese.

http://www.erols.com/auraltech/index2.html
Website with useful links on cheesemaking and on different cheeses.

**Books and Supplies:**

New England Cheesemaking Supply Company
P.O. Box 85
Ashfield, MA 01330
(413) 628–3808; Fax: (413) 628–4061
http://www.cheesemaking.com

*Has information on cheesemaking, an on-line catalog for supplies and books, and many links.*
Kitchen Arts and Letters, Inc.
1425 Lexington Avenue
New York, NY 10128
(212) 876–5550
http://www.kitchenartsandletters.com

Has a large selection of books on cheeses and cheesemaking.

Organic Dairy Farming
Kickapoo Organic Resource Network
Community Conservation, Inc.
50542 ONE Client Lane
Gays Mills, WI 54631
(608) 735-4717

Cost is $8.00 postpaid.

The ATTRA Projects is operated by the National Center for Appropriate Technology under a grant from the Rural Business - Cooperative Service, U.S. Department of Agriculture. These organizations do not recommend or endorse products, companies, or individuals.