(parallel to the trunk), either up or down depending on the training system. In the real world, however, shoots tend to grow sideways and attach to the cordon wire with their tendrils. This is why shoot positioning is conducted to disallow lateral and horizontal shoot growth. Shoot positioning also allows the spread of shoots to promote an open canopy, improve spray penetration, and adhere to the shape of the given trellis system.

Combing: This is the generic term of positioning shoots downward. Combing is conducted on high training systems such as High Cordon and Geneva Double Curtain. Shoots are combed in a vertical downward position.

Tucking: This is the generic term of positioning shoots upward and is used on low training systems such as Vertical Shoot Position (VSP). Shoots are held upright by using one or two pairs of moveable catch wires 10 to 12 inches apart. Sometimes extra tying with tape is needed in order to keep the shoots upright.

Combing/Tucking: Both practices are required in vertically divided canopies such as Scott Henry and Smart Dyson training systems. The upward growth of both systems is tucked between catch wires and the downward growth is combed.

When: This practice seems difficult and time consuming to growers. This is primarily due to missing the ideal time to shoot position. Unlike the other practices, timing is extremely crucial and the time window of this practice is narrow (about two weeks). Shoots should be long enough and strong at the base so that they don't break; and tendrils are not active enough to slow the positioning process. This time window ranges between bloom and fruit set. Note that shoot positioning needs to be repeated more than once as shoot growth continues.

Step 3 – Cluster Thinning

This is the least favorite practice for new growers. Recommending cluster thinning may sound to some growers like dropping cash on the ground. To cluster thin or not to cluster thin? That is the question! Some attempt to take the risk and avoid cluster-thinning altogether for a quick vineyard production. Others do cluster thin and have in mind the long-term benefit of this practice for the well-being and life span of the vineyard.

Cluster thinning is a MUST for some peculiar varieties that have very fruitful primary buds and tend to produce 3 + clusters per shoot. Examples include Seyval, Chancellor, Vidal, and Chambourcin. Among these varieties, some also have fruitful secondary and base buds, which in turn produce several clusters per shoot. Seyval and Chancellor are good examples. These 2 varieties still produce a normal crop after losing their primary buds to cold injury. Other varieties, however, do not require cluster thinning. Examples include Chardonel, Traminette, Norton, Vignoles, and Frontenac.

When: There are two periods: before bloom (Pre-bloom) and after fruit set (Post fruit set).

Pre-bloom thinning: This consists of removal of flower clusters. This practice can be done at the same time as shoot thinning. The advantage of this timing is that clusters are easy to see, thus thinning can be done quickly. By removing flower clusters this early, several things happen: berry set is improved (more berries per cluster as a result of less competition with fewer clusters); and berries are bigger at harvest. Other advantages include increased yield, increased sugars and flavors of the fruit, improved vine size and hardiness.

Setbacks of early thinning include tighter cluster (as a result of larger berries) thus, bunch rot can be a problem. Seyval produces large and tight clusters and is susceptible to bunch rot. Therefore, thinning before bloom is not recommended for Seyval. However, this practice is beneficial to varieties that have loose clusters and are not susceptible to bunch rot such as Chambourcin and Chancellor.

Post fruit set thinning: In this case, berry set is less than that of pre-bloom thinning. There are fewer berries per cluster; thus clusters are looser and bunch rot is lower. This practice is more common and recommended for varieties susceptible to bunch rot such as Seyval. With this method, yield, sugars, vine size, and hardiness are not negatively affected but rather improved. This method, however, is more time-consuming, hence more expensive (more difficult to see the fruit due to a more developed canopy).

At this stage of shoot development, vine canopy is about 75% formed. Use the following rule of thumb guidelines to cluster thin your vines: Remove all clusters from shoots less than 12" long; Leave one cluster per shoot for 12-24" long shoots; Leave 2 clusters if shoot is more than 24" long.

Special cases:
In almost all commercial vineyards, there are always some vines that seem to fall behind in growth and production. They look like one- or two-year old vines in a 5 year-old vineyard. In this case, those underside vines should be cluster thinned heavily sometimes completely. This will allow the vines to recover by diverting the carbohydrates to trunks and roots. Follow the same procedure with vines that have not filled the trellis yet.

Step 4 – Leaf Removal (Pulling)
Leaves are removed in the fruiting zone in order to accomplish two goals. First, is to improve air movement and spray penetration, thus reducing bunch rot infection. This is especially critical for varieties susceptible to botrytis bunch rot such as Vignoles and Seyval. Second, is to improve fruit and basal buds exposure. This results in better color for red wine varieties, lower potassium and pH in the juice (Norton benefits the most), and more fruitful buds and hardy canes the following year.

Leaf pulling is done on the "shade" side of the canopy, which is either the east side of a North-South row or the north side of an East-West row. One to three leaves are removed at the base of each shoot and around clusters. Leaf pulling is either minimally done or completely avoided (depending on the canopy thickness) on the "sun" side of a canopy in order to avoid sun burning of fruit. A set back of leaf pulling is possible bird damage as result of exposed berries.

When: Leaf pulling is first done after fruit set. One more cleanup pass may be necessary before veraison by removing old and yellow leaves. BUT, NEVER REMOVE LEAVES AFTER VERAISON...IT IS TOO LATE AND WILL CAUSE FRUIT SUNBURN!

Step 5 – Shoot Hedging
Shoot hedging consists of cutting shoots that grow beyond the allocated space in a given trellis in order to control shoot length. It is called "hedging" for upward shoot training such as on a VSP system; and "skirting" for downward shoot training such as on a high cordon system. Shoot hedging is required for VSP systems and upper canopies of Scott Henry systems. High cordon (HC) and GDC systems do not usually require "skirting" unless shoot tips interfere with traffic in row middles. In general, a minimum of 12 leaves per shoot should be left after hedging in order to mature the fruit and wood. DO NOT HEDGE SHOOTS BACK TO THE FRUIT ZONE...Yes sounds silly, but I have seen more than one vineyard where growers did just that last season.

When: Shoot hedging is done when shoots grow beyond the trellis space and desired length; about 3.5 feet for VSP and about 5 feet for HC and GDC. The amount of summer rain will determine the number of hedging passes (typically 1 to 3 passes). However, do not hedge shoots after veraison since this may result in delay of fruit maturity, and reduces wood maturity thus hardiness.

Upcoming Events

In Illinois

❖ *Vineyard Canopy Management*
When: 16 June 2001, 9am-12pm
Where: HRC, Carbondale
Comments: Current practices of canopy management including shoot positioning, leaf pulling, cluster thinning, etc.
Contact: Workshop organizer, Dr. Imed Dami, State Viticulturist at 618-453-1782 or imeddami@siu.edu.

❖ *Vineyard Canopy Management*
When: 23 June 2001
Where: Rolling Hills Vineyard; New Salem, Illinois
Comments: Current practices of canopy management including shoot positioning, leaf pulling, cluster thinning, etc.
Contact: Workshop organizer, Western Illinois Grape Producer Association Cooperative (WIGPAC). Presenter: Dr. Imed Dami, State Viticulturist at 618-453-1782 or imeddami@siu.edu.

❖ *Viticulture Summer Meeting 2001*
When: 28 July 2001
Where: Galena Convention Center and Local Vineyards; Galena, Illinois
Comments: Our annual summer meeting will be held in northern Illinois this year and include topics on canopy management, monitoring grape ripening, and discussions of the new wine grape selections presented by Peter Hemstad from the University of Minnesota. Other state specialists will be presenting on their respective areas of expertise.
Contact: Meeting organizer and presenter: Dr. Imed Dami, State Viticulturist. Program announcement brochure will be mailed. Program information contact Dr. Dami at 618-453-1782 or imeddami@siu.edu. Registration information contact Ken Robinson, SIUC Division of Continuing Education at 618-536-7751 or kenr@siu.edu.

❖ *How to Test Fruit Ripening and Estimate your Crop*
When: 11 August 2001
Where: Alto Vineyards; Alto Pass, Illinois
Comments: Hands-on-demonstration of crop estimation, and grape sampling to monitor ripening.
Contact: Demonstration organizers, SIUC and Shawnee Community College.

❖ *Fall Tour 2001*
When: 11 August 2001
Where: Western Illinois (TBA)
Comments: Tour local vineyards in Pike and Calhoun counties.
Contact: Tour organizers, WIGPAC. Information - Jim & Sharla Nickell at 217-734-9307.

❖ *Grape Harvest Testing and Crop Estimation*
When: 18 August 2001
Where: Western Illinois (TBA)
Comments: Hands-on-demonstration of crop estimation, and grape sampling to monitor ripening.
Contact: Demonstration organizers, WIGPAC. Information - Jim & Sharla Nickell at 217-734-9307.

National Meetings

❖ *Annual Meeting of the American Society for Enology and Viticulture*
When: 29 June - 1 July 2001
Where: San Diego, California
Contact: Registration and programs call 530-753-3142 or see www.asev.org.

❖ *Annual Meeting of the American Society for Enology and Viticulture / Eastern Section*
When: 10 - 13 July 2001
Where: Niagara on the Lake; Ontario, Canada
Comments: Tour of vineyards and wineries on the Niagara Peninsula, and space-aged grape growing symposium.
Contact Registration and program call Ellen Harkness at 765-494-6704 or harkness@foodsci.purdue.edu.

Vignoble Illinois

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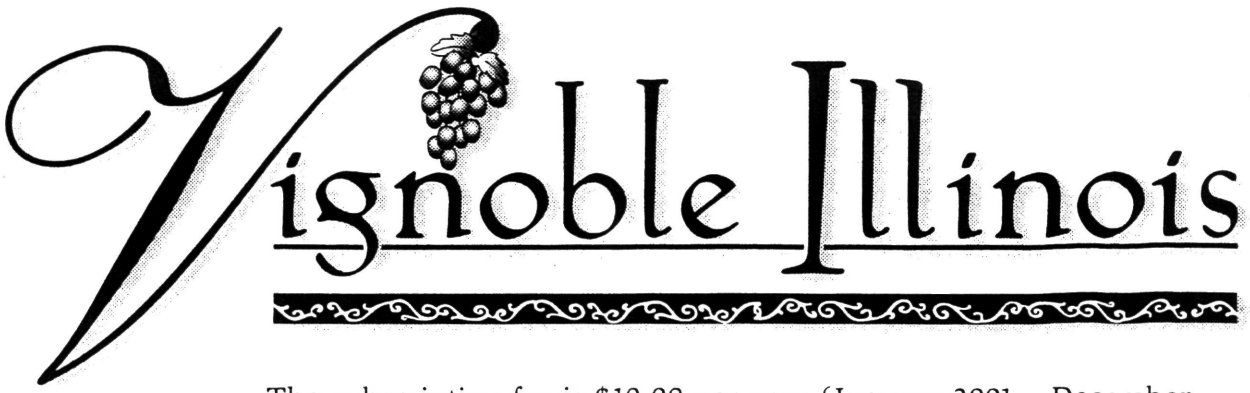

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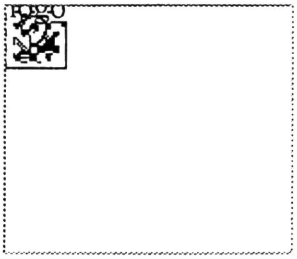

Organic Grape Production

Horticulture Production Guide

Appropriate Technology Transfer for Rural Areas (ATTRA)
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Abstract

Organic grape production provides a more predictable economic return in the irrigated parts of the arid West. Though not impossible, organic grape production in the East is complicated by a climate that fosters insect and disease problems and by consumer preferences for grape cultivars (both dessert and wine grapes) difficult to grow in the East. Organic management options for diseases and insects are presented. Cultivar choices are discussed in terms of disease resistance. Marketing ideas for eastern labrusca-type grapes and organic wines are briefly presented.

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Introduction

In some parts of the country, grapes are among the fruits easiest to grow organically. Diseases can be managed with a combination of cultural strategies (including specific pruning and training techniques, cultivar selection, and proper siting of the vineyard) and organically acceptable, mineral-based fungicides such as sulfur and Bordeaux mix. Biological, cultural, and pheromonal controls can be relied upon to control most mite and insect problems. Cover crops, mulching, and/or mechanical cultivation can control weeds, and fertility needs can be met with a variety of organically acceptable materials and strategies.

The many large-scale organic wine and table grape vineyards in California are testimony to the relative ease of organic grape culture in that part of the country. Even though other regions are not as amenable to organic production of grapes as is the arid West, with careful attention to pest control (especially disease control) and the proper cultivar for the climate, grapes can be grown organically almost anywhere in the United States. There are now two commercial-scale organic vineyards/wineries in the Northeast, and Cornell University has published a first-of-its-kind report, *Organic Grape and Wine Production Symposium* (see Publications section for full citation and ordering information).

There are certain considerations and practices in grape production that will be the same for organic growers and conventional growers. For instance, site selection, pruning and training, and planting techniques are similar for both conventional and organic grape culture. This cultural information is available through the Cooperative Extension Service and common gardening or viticultural texts, magazines, and bulletins (see the References and Publications sections for specific literature citations). Accordingly, this publication focuses primarily on organic controls for pests and diseases. For information on organic weed control and fertility management refer to ATTRA's Overview of Organic Fruit Production.

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Geographical Considerations

As with other fruit crops, the generally drier conditions in the western half of the United States are more conducive to organic grape production than in the East. In fact, there are several very large-scale organic vineyards in California and Arizona, including some managed by well-known vintners such as Gallo and Fetzer. Mites, leafhoppers, and leafrollers are likely to be the most troublesome arthropod pests in the West, and all of these are indirect pests; i.e., they do not directly attack the fruit. In general, indirect pests can be tolerated in higher numbers than direct pests, allowing more time for naturally-occurring or purchased biocontrol agents to exert an acceptable level of control. Botrytis bunch rot can be a serious disease problem in the West, but it can be controlled through cultural techniques and/or sprays of organically acceptable fungicides.

The major problems for eastern organic grape growers are the grape berry moth and several fungal diseases. The berry moth is a direct pest of the fruit and, if left unchecked, can render whole clusters unmarketable. A pheromone-based mating-disruption system for the berry moth provides organic growers with an effective non-pesticide option for berry moth control (see Insect and Mite Pests). Other indirect insect and mite pests can be troublesome in the

East as in the West, but it is the severe disease pressure that provides the major challenge for eastern growers. If the eastern grower is producing for the fresh market, he or she should have a disease control plan. Several diseases can be devastating, but black rot is probably the most important of these to control. It only takes a few black rotted grapes to render a cluster unsaleable on the fresh market. On the other hand, grapes produced primarily for juice, wine, or other processed products will have a slightly higher tolerance for damage to the clusters.

Northern growers should choose cultivars with proven cold hardiness for their particular climatic zone. The European wine grape (*Vitis vinifera*) is not well adapted outside of USDA climate zones 8 and warmer; zone 7 can be marginal. In zones 5-7,American types (mostly *V. labrusca*) or some of the American-European hybrids (usually called "French hybrids") are the best choices. There are some American types that are cold hardy in zones 3 and 4. As with other types of cultural information, cultivar recommendations for a particular region are best obtained through the county or state Cooperative Extension Service.

Extreme disease pressure makes organic culture of bunch grapes very difficult in the Deep South. However, many cultivars of the indigenous muscadine grape, *V. rotundifolia*, are readily grown without pesticides of any sort. And while they do not have the same wide market acceptance as bunch-type grapes, they may be sold on local markets or processed into jams, preserves, juice, wine, etc.

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Diseases

Ideally, the best solution for disease problems on grapes is to plant resistant varieties (see Appendix I: Disease Resistance Rating Chart for Grape Cultivars). Unfortunately, the market often prefers those varieties that are especially susceptible to indigenous diseases. This is the case with the *V. vinifera* cultivars (the high-quality European wine grapes). In general, they are highly susceptible to all the American grape diseases and pests including downy mildew, black rot, Phomopsis leaf spot, powdery mildew, and phylloxera. If the grower decides to plant *V. vinifera* cultivars, he/she will often be culturing a susceptible plant under environmental conditions that invite disease development. Therefore, profitable production of a marketable product without the use of fungicides will be very difficult. However, as already indicated, California's dry, Mediterranean climate is quite amenable to the culture of the European wine grape, and organically acceptable fungicides are adequate for controlling most disease problems there.

American grape varieties (*V. labrusca* and others) differ in their susceptibility to various diseases. Concord, for example is quite resistant to anthracnose but susceptible to black rot. Ives is relatively resistant to black rot but highly susceptible to downy mildew. Edelweiss (*V. labrusca*) and Cynthiana (*V. aestivalis*; also known as Norton) are two American cultivars which appear to have significant resistance to most of the major grape diseases. Muscadine grapes (*V. rotundifolia*), suited only to the South, are very resistant to most bunch grape diseases and pests. See the Disease Resistance Rating Chart for more information on varietal resistance.

Where varietal resistance, sanitation, and other cultural controls are not adequate, the organic grower will have to rely on the organically acceptable mineral fungicides, such as the various sulfur and copper formulations. Organic growers are allowed to use such products since they are mined materials; however, sulfur and sulfur-containing fungicides can be disruptive to beneficial insects and arthropods (spiders, mites, et al.) present in the vineyard.

Another problem associated with the use of sulfur is tissue injury (phytotoxicity). This damage can occur when sulfur is used while temperatures are over 85° F. (about 30° C.). Some cultivars, especially those of *V. labrusca* origin such as the Concord, are highly susceptible to sulfur injury even at lower temperatures (see Disease Resistance Rating Chart). In regions where rainfall is plentiful during the growing season, wettable powder or flowable formulations are preferred for their retentive qualities (1). Flowable suspensions are less damaging to predatory mite populations and should be used when possible.

For more information on organic production methods for specific crops, please contact ATTRA. ATTRA has prepared the following publications:

- Organic and Low-Spray Apple Production
- Organic and Low-Spray Peach Production
- Organic Blueberry Culture
- Organic Culture of Blackberries and Raspberries
- Overview of Organic Fruit Production
- Organic Strawberry Production

Bordeaux mix (copper sulfate mixed with hydrated lime) is less likely to be phytotoxic than sulfur due to the "safening" influence of the lime. Damage can still occur on sensitive cultivars, especially in high temperatures.

The following discussion of grape diseases focuses primarily on organic controls. For details of symptomology, life cycles, epidemiology, and more, refer to the publications listed in the References and Publications sections of this publication.

Powdery mildew

The fungus that causes powdery mildew, *Uncinula nector*, overwinters inside dormant buds of the grapevine, or on the surface of the vine. Its control in commercial vineyards is generally based on the use of fungicides. Sulfur is effective against powdery mildew, but, as mentioned above, care must be taken to avoid damage to sulfur-sensitive cultivars. Cultural practices may reduce the severity of powdery mildew. Planting in sites with good air circulation and sun exposure, and orienting rows to take advantage of these factors are helpful (1). The use of training systems that promote good air circulation should be incorporated.

Some formulations of sodium and potassium bicarbonate have also proven successful in controlling powdery mildew on grapes. See ATTRA's *Use of Baking Soda as a Fungicide* (request by phone or find it on our website: www.attra.org/attra-pub/bakingsoda.html).

Also, a new biofungicide, AQ10, which contains the fungal parasitic agent *Ampelomyces quisqualis*, is labeled for control of powdery mildew on grapes. Formulated as a

water-dispersible granule, it germinates and parasitizes powdery mildew mycelia under high humidity conditions, which may limit its value somewhat. Contact the manufacturer, Ecogen (2), for more details.

Vitis species differ greatly in susceptibility to powdery mildew. *V. vinifera* cultivars are highly susceptible, whereas American species are much less so. The French hybrids developed by crossing *V. vinifera* with American species have varying levels of resistance.

Black rot

The disease organism that causes black rot is the fungus *Guignardia bidwellii*. The fungus overwinters in mummified berries on the soil, or in old clusters still on the vines. Fungal spores (ascospores) are spread by air currents and blowing rain, both in the early spring and throughout the growing season. Although this disease may be the most important disease facing Eastern growers, it is virtually unknown in the West.

Proper sanitation is important in controlling black rot. Removing overwintering mummified berries from the vines, and disking mummies into the soil are beneficial practices that reduce the amount of primary inoculum present in the spring (1). Black rot control for bunch grapes is very difficult in the East due to high humidity and foliage density problems. For organic growers, liquid copper formulations, or copper-sulfur compounds such as Bordeaux mix, can be used for prevention of black rot, as well as suppression of powdery mildew, downy mildew, and Phomopsis leaf spot.

Because the copper and sulfur compounds cannot remedy an established infection, they must be used as protectants. That is, these compounds need to be present on the plant surfaces before an infection period is anticipated. In the case of black rot, growers with a history of the disease will want to begin spraying when the first vegetative shoots are 3-6 inches long. This is roughly when the pathogen begins releasing spores which may infect leaf or flower tissues. Protection should be maintained until the berries begin their final ripening stage (at about 5% sugar) (1). Depending on the cultivar, inoculum level, and weather conditions, it is possible that this could entail sprays every 7-14 days from bud break until early August. For example, in the wet growing season of 1991, organically grown Seyval wine grapes (rot-susceptible, French-hybrid) required 17 fungicide applications for disease control (3).

However, because spores require free water and a certain temperature range for germination and infection, this rigorous a schedule will probably not be warranted every year. Also, proper sanitation and good early season control will help to reduce the inoculum levels of the pathogen.

With relatively resistant cultivars and good early season coverage, some Eastern viticulturists have been able to control black rot with as few as 2-4 sprays of Bordeaux mix (the first when new shoots are 2-4 inches long, and the remainder at 2-week intervals). There are few bunch grape cultivars with high levels of resistance, but some relatively resistant cultivars include Chambourcin, Cynthiana (aka Norton), Edelweiss, Elvira, Esprit, Foch, Ives, Cascade, Missouri Reisling, and Alwood. The non-bunching muscadine grape is very resistant to most races of *G. bidwellii*, but there are races of this fungus which are pathogenic to muscadines in some areas of the South (1).

Phomopsis

Phomopsis cane and leaf spot is caused by the fungus *Phomopsis viticola*. It overwinters in the bark of the canes and can be especially severe in the early spring when rain occurs for several consecutive days. Inoculum levels build over time, with disease problems increasing in severity with each successive cool, wet spring. Few cultivars are resistant to Phomopsis, though there are varying degrees of susceptibility.

Control of Phomopsis for the organic grower consists of a combination of appropriate sanitation measures and the use of liquid copper fungicides. Growers should avoid introduction of the problem into the vineyard by using only pathogen-free propagation material when planting or re-planting. Once the disease has appeared, the grower should remove as much infected wood as possible from the vines during pruning. Debris should be shredded, disked, or plowed into the soil (1).

Downy mildew

Another disease to which *V. vinifera* varieties are highly susceptible is downy mildew, caused by the fungus *Plasmopara viticola*. Downy mildew usually overwinters as spores in fallen leaves, but may survive in buds as mycelium in regions with mild winters. Downy mildew is favored by all factors that increase the moisture content of soil, air, and host plants. Therefore, rain is the principal factor promoting epidemics. The most serious epidemics of downy mildew occur when a wet winter is followed by a wet spring and a warm summer with intermittent rainstorms every 8-15 days (1).

Preventative management practices for downy mildew consist of draining soils, reducing the sources of overwintering innoculum, and pruning out the ends of infected shoots. However, because none of these measures is sufficient for cultivars highly susceptible to downy mildew, fungicidal control may be necessary. As mentioned above, organic growers can use liquid copper, or Bordeaux mix for control of this disease. Several resistant cultivars are listed in Appendix I.

Botrytis

Botrytis bunch rot of grapes (causal organism: *Botrytis cinerea*) can be a problem throughout the U.S., but can be especially troublesome in wet or humid areas. Botrytis is more of a problem on varieties with tight clusters, which harbor more moisture than looser-clustered varieties. California research indicates that the incidence of botrytis bunch rot can be greatly reduced by removing leaves around a ripening cluster, thereby improving sunlight and air penetration into the cluster (4). Reducing fertilization, thereby reducing lush vine growth, can also be helpful in controlling botrytis.

Bordeaux mix or sulfur-containing fungicides are ineffective against botrytis. However, the beneficial fungus *Trichoderma harzianum* is effective against botrytis and registered in the U.S. for that use. It is available as Trichodex™ (call 212-661-9800 for closest distributor).

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Insect and Mite Pests

Grape berry moth

The grape berry moth, *Endopiza viteana*, does extensive damage directly to grape berries. This pest is generally distributed east of the Rocky Mountains, varying in severity from one region to another. The only biological control agent that has been found to be of appreciable value is the egg parasite *Trichogramma minutum*. When feasible, cultural practices aid greatly in reducing the overwintering population. Success of these practices depends on plowing or cultivating to bury the cocoons containing overwintering pupae.

A popular method is to throw the soil from the row centers into a low ridge under the grape trellis with a grape hoe, disk, or plow. This should be done 30 to 45 days before harvest. The row centers should be almost level and seeded to a winter cover crop. In the spring, at least 15 days before grape bloom, the ridge soil containing the cocoons in its surface is pulled from under the trellis into the row centers with a mechanical grape hoe. Any islands of soil left around the posts and grapevines may have to be raked by hand into the row centers. The row centers are then disked and cultipacked to bury the cocoons. Rain or irrigation after this operation will help to seal in the cocoons. This practice has reduced berry moth populations to a point where shortened spray schedules can be used in commercial vineyards (4).

Grape berry moth sex pheromone-impregnated twist-ties that not only hold up the vines but confuse male berry moths seeking mates are available commercially from Pacific Biocontrol (800-999-8805). This mating disruption system should qualify as organically acceptable under most, if not all, organic certification programs.

Leafhoppers

Grape leafhoppers, *Erythroneura spp.*, can also be a serious problem throughout the United States, but West Coast vineyards are probably more consistently troubled by these pests.

Research in California indicates that biological control of the leafhoppers can be achieved if the tiny parasitoid wasps (*Anagrus epos*) which attack the leafhoppers are allowed to build up their populations on another leafhopper species, which feeds on blackberry plants and French prune trees (5). Maintaining plantings of prune trees near vineyards significantly increases the chance of biocontrol by the wasp. There are other potential biocontrol agents for grape leafhoppers being researched (6).

Clean cultivation in and around the vineyard can help to reduce leafhopper populations because the adults overwinter in shelters afforded by weeds in these areas. Two pesticides that can be used by organic growers for leafhopper control are insecticidal soaps and the botanical insecticide sabadilla. Soap sprays are only effective if they cover the leafhopper; i.e., there is no residual effect from soap left on a plant surface.

Mites

Various mite species cause problems on grapes throughout the United States. Proper irrigation, dust reduction along roadways and other cultural practices can help somewhat in

reducing spider mite problems.

Sulfur can be used against these pests, but sulfur can be disruptive to beneficial mites and other natural enemies of the pest mites. Soap sprays can also be effective against mites, but thorough spray coverage is essential, since the mites reside and feed primarily on the underside of the leaf surface.

The beneficial predatory mite *Metaseiulus occidentalis* has been shown to be effective in controlling spider mites in California. These beneficial mites can be purchased from several insectaries in California and elsewhere. Maintaining a ground cover on the vineyard floor is considered to be advantageous to predatory mites and various beneficial insects. For appropriate cover crops for a specific region, contact the local or state Cooperative Extension Service.

Grape phylloxera

The grape phylloxera (*Daktulosphaira vitifoliae*) has two forms-an aerial, leaf-galling form and a subterranean root-feeding form. Historically, the root form has been the more economically important of the two.

Phylloxera is most injurious to *V. vinifera* roots, but foliar feeding on all grape species can be severe enough to cause defoliation, although this is rare. Roots of *V. rupestris* and other American species are tolerant or relatively resistant, compared to *V. vinifera*, which has led to the grafting of *V. vinifera* onto *V. rupestris* roots for phylloxera control. There are no known controls for already infested roots; however, grafting onto American species practically eliminates phylloxera injury.

Caterpillars

Several lepidopterous species attack grapes, including the orange tortrix, the omnivorous leafroller, and the grape leaf skeletonizer. The naturally occurring bacterium *Bacillus thuringiensis* is effective against these lepidopterans. Trade names include Dipel™, Thuricide™, and Javelin™.

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Marketing and Economics

A vineyard using a simple single-wire trellis costs around $4,000 per acre to establish, and that does not include land or machinery (7). Maintenance of the planting may cost up to $2,000/acre/year (mostly labor for pruning and picking), and it takes around four years for a new vineyard to begin significant production (7). Because of these high establishment and maintenance costs and the long-term nature of a vineyard, it is strongly advised that the potential organic grape grower have a realistic marketing plan before planting on a commercial scale. Local or state Cooperative Extension Service offices may be able to supply publications or other help in this regard.

As mentioned in the introduction, organic grape production in California is an accomplished and profitable reality. For instance, Stephen Pavich grows grapes organically on over 1400 acres for nationwide conventional and organic markets and is able to do so at costs roughly equivalent to conventional production costs (8). Furthermore, because of his climate, Pavich is able to grow the seedless *V. vinifera* types currently most popular in the marketplace. Vinifera types also keep longer (1-4 months at 32° F.) than labrusca types (2-4 weeks).

Because of these advantages and a competitive market, it may be difficult for growers other than established California or Arizona growers to successfully compete in a wholesale organic market dominated by such large producers. Wholesale buyers of organic grapes, East and West, can be found through the annual *National Directory of Organic Wholesalers* available from the California Action Network (CAN) (9).

A five-year study by Cornell University in New York indicated that growing costs were 69-91% higher for organic vs. conventional growers (3). In fact, two of the three cultivars (Seyval, Elvira, and Concord) lost money in the organic system. Only Elvira provided a modest positive return of $35/acre (compared to about $375/acre for conventionally grown Elvira). The authors of this study point to high weed control costs as a major factor in the economics of the organic plots.

Marketing labrusca type grapes

Another problem for the organic grower outside of California is the choice of cultivars adapted to the grower's region and relatively resistant to diseases. The problem is that many cultivars which are both disease resistant and adapted to a particular region are likely to be seeded labrusca types. Most of the seedless types developed for the East are not particularly disease resistant. Mars (seedless) appears to be one of the most resistant, yet it can suffer greatly from black rot in a wet year.

Moreover, most of the seedless varieties (Canadice, Interlaken, Himrod, Lakemont, et al.) are subject to major crop losses in many parts of the East due to winter or early spring freeze damage to fruit buds. The cultivar Reliance is an exception to this last rule, but, again, it is susceptible to most of the major grape diseases.

Many consumers prefer the full, fruity flavor of these American grapes. Many older consumers grew up thinking that grapes were "supposed" to taste the way American grapes taste. Even children know how grapes are "supposed" to taste due to their exposure to grape jelly (usually made from Concords) and grape-flavored candy and bubblegum. It might behoove the marketer to offer a berry or two as free samples to potential customers at farmers' markets or roadside stands.

Offering recipes and suggestions for a particular cultivar's best use (wine, preserves, fresh eating, etc.) could also be helpful. Because many of the labrusca types have tough, sour but "slipping" skins, it might even be helpful to show customers how to eat these slip-skin types (the pulp can be squeezed into the mouth and the skin discarded).

Broker Mel Nass of Venture Vineyards, Inc. (10) has made a successful business of marketing seeded and seedless labrusca types in Eastern markets. Mr. Nass emphasizes the "real" grape flavor of labrusca types in seasonal radio and television ad campaigns in selected

Eastern markets. Although Venture Vineyards purchases grapes throughout the Eastern U.S., part of the campaign has in the past also included appeals to state or regional loyalties (e.g., "Buy the taste of New England. Buy Concord grapes.").

Organic wine

The organic wine market appears to be growing. However, while wine giants such as Gallo produce organic wine, many of these companies choose to market little of their product as "organic" (11). Nevertheless, there are some American and several European wine companies which do market their wines as organic or as made from organically grown grapes. Entrepreneurs hoping to find an unexplored niche market in organic wines will probably be disappointed. On the other hand, California winemakers are finding that they can grow organic grapes economically and produce high-quality wines.

Given the weaker economics of organic grape and wine production in the East, it would seem even more important that eastern growers receive a premium for their products. However, a survey conducted as part of the Cornell study cited previously (3) prompted the researchers to conclude that there was no price premium in the marketplace in 1990 for wine labeled organic. At least one experienced organic vintner, Walter Pedersen of Four Chimneys Winery and Vineyard in Himrod, New York, believed that in 1995 this was already changing and predicted increasing demand and prices for organic wines (12).

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Summary

In arid Western climates, commercial-scale organic production of table and wine grapes is an accomplished fact. In the East, the commercial success of organic grape production is complicated by disease and insect pressure and the types of cultivars adapted to Eastern climates. Organically acceptable fungicides and insect controls as well as disease-resistant cultivars make small-scale organic production of grapes possible in the East, but commercial success may depend on novel marketing techniques (try ATTRA publications Resources for Organic Marketing and Direct Marketing).

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   2005 Cabot Blvd., West
   Langhorne, PA 19074
   Tel: (215) 757-1590

Fax: (215) 752-2461

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10. CAN
PO Box 464
Davis, CA 95617
916-756-8518

11. Mel Nass
Venture Vineyards, Inc.
8830 Upper Lake Rd.
Lodi, NY 14860
607-582-6774

12. Fisher, L.M. 1992. Organic wines enter the mainstream. In Business. Vol. 14, No. 1. p. 22-24.

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Appendix

Disease Resistant Rating Chart for Grape Cultivars

Publications

American Journal of Enology and Viticulture.
American Society of Enologists
P.O. Box 411, Davis, CA 95616.
530-753-3142
http://www.ajev.com

Refereed, scientific journal for wine research. Call or email for cost.

Cornell University Media Services Resource Ctr.
7-8 Cornell Business & Technology Park
Ithaca, NY 14850
607-255-2080

The Cornell Cooperative Extension Service produces an excellent series of fact sheets and other bulletins relevant to Eastern grape production. Ask for their publications catalog. Many other state Extension services also offer publications on grape production. Check your county or state office.

Flaherty, D.L. et al. 1992. Grape Pest Management. Univ. Calif. Pub. 3343, Second Edition. ANR Publications, University of California, Oakland, CA. 400 p.

A handbook for California only. Excellent color plates.
$70 plus $7.00 shipping and handling from:

UC Regents
ANR Publications
6701 San Pablo Ave.
Oakland, CA 94608
800-994-8849

Hegwood, C.P. et al. 1983. Establishment and Maintenance of Muscadine Vineyards. MAFES Bulletin 913. Mississippi State University, Mississippi State, MS. 20 p.

A short but comprehensive treatise on commercial production of muscadines. Valuable discussion of the horticultural traits of cultivars. Cooperative Extension in other Southern states also produce materials on muscadines.

Free from:
Office of Agriculture Communications
Box 9625
Mississippi State, MS 39762
662-325-7774

Jackish, P. 1985. Modern Winemaking. Cornell Univ. Press, Ithaca, NY. 289 p.

$35 plus $3.50 shipping and handling from:

Cornell Univ. Press Services
POB 6525
Ithaca, NY 14851
800-666-2211

Minnesota Grape Growers Assoc. 1990. Growing Grapes in Minnesota. MGGA, White Bear Lake, MN.

Excellent guide for viticulturists in coldclimates. $7.50 ppd. From:

MGGA
35680 Hwy. 61 Blvd.
Lake City, MN 55041
651-345-3531
http://www.mngrapes.com

Pearson, R.C., and A.C. Goheen (ed.) 1988. Compendium of Grape Diseases. American Phytopathological Society Press, St. Paul, MN. 93 p.

Incredibly comprehensive treatise on this subject. Color plates of symptoms. Highly recommended for the serious grower. $37 plus $5.00 shipping and handling from:

APS Press
St. Paul, MN 55121-2097
800-328-7560

Pool, Robert (ed.). 1995. Organic Grape and Wine Production Symposium. NYSAES Special Report, Number 69. NYAES Communications Services, Cornell University, Geneva NY.

The best (practically the only) guide to-date on growing organic grapes in the East. On the web in Acrobat in its entirety:
http://www.nysaes.cornell.edu/hort/faculty/pool/organicvitwkshp/tabofcontents.html
Order as "SpR 69, Shaulis III," $13 ppd., from:

Bulletins, Communications Services
New York State Agricultural Experiment Station
Geneva, New York 14456

Vineyard and Winery Management
Box 329
Watkins Glen, NY 14891
607-535-7133

Trade journal for the Northeast wine industry.
$29/6 issues/year.

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Researchers, Practitioners, and Organizations

American Wine Society
3006 Latta Rd.
Rochester, NY 14612
http://vitis-ir.com/AWS/

Amateur and professional viticulturists and wine makers. Promotes home production. Sponsors wine competitions.

Kate Burroughs
Harmony Farm Supply
PO Box 460
Graton, CA 95444
707-823-9125
http://www.harmonyfarm.com/

Consultant for organic production. Also supplier for natural pest control products.

California Table Grape Commission
PO Box 5498
Fresno, CA 93755
http://www.tablegrape.com/

Grape growers united to promote California table grapes. Conducts research on production. Quarterly grower report.

Cooperative Extension Service and Land-Grant University System

Every state has a land-grant university and an associated Extension Service. Research and extension services relevant to viticulture are offered in many states. To contact the county CES, see Yellow Pages under "Government, County."

Minnesota Grape Growers Association
Box 10605
White Bear Lake, MN 55110
http://www.MNgrapes.com/

Source of information for growing grapes in very cold climates. Newsletter and annual "Yearbook."

New York Wine/Grape Foundation

350 Elm St.
Penn Yan, NY 14527
http://www.uncorkny.com/

Grower/processor/retailer group which promotes sales and use of New York grapes and grape products. Also provides marketing information assistance.

North American Fruit Explorers
1716 Apples Road
Chapin, IL 62628
http://www.nafex.org/

Amateur and professional fruit afficionados share information in a quarterly journal, Pomona, and in national and regional meetings.

Lon Rombough
P.O. Box 365
Aurora, OR 97002
http://www.hevanet.com/lonrom/

Private grape breeder. NAFEX [see above] consultant for grapes. Huge collection of grape cultivars; sells cuttings. Enclose SASE with inquiries.

State Fruit Experiment Station
Southwest Missouri State University
Mountain Grove, MO 65711-9252
http://mtngrv.smsu.edu/dept.htm

A state-supported institution independent of the Cooperative Extension Service and the land-grant system. A leader in the midwest for wine and viticulture research.

Munson Memorial Vineyard
Grayson County Community College
6101 Grayson Dr.
Denison, TX 75020
903-465-6030
http://www.grayson.edu/grayson/division/artsci/viticult/muncen.htm

The Munson Memorial Vineyard is a repository for the cultivars developed at the turn of the century by the prolific grape breeder and botanist, T. V. Munson. Munson crossed native and European species for disease resistance and for adaptability to various soils and climates. The Vineyard provides only information and cuttings--no plants.

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Plants

Boordy Vineyard
Box 38
Riverwood, MD 21139

Wide range of labrusca, vinifera, and French hybrid grapes.

Fairacre Nursery
Rt. 1, Box 1068
Prosser, WA 99350

Wholesale only. Specializes in viniferas.

Concord Nursery Co., Inc.
Mileblock Rd.
North Collins, NY 14111-9770

Wide range of labrusca, vinifera, and French hybrid grapes.

Harmony Farm Supply
PO Box 460
Graton, CA 95444
707-823-9125
http://www.harmonyfarm.com/

Irrigation equipment, organic fertilizers, ecological pest controls.

Ison's Nursery and Vineyards
Rt. 1, Box 191
Brooks, GA 30205

Specializes in muscadines.

Owens Vineyard & Nursery
Georgia Hwy. 85
Gay, GA 30218

Specializes in muscadines.

Lon Rombough
P.O. Box 365
Aurora, OR 97002
http://www.hevanet.com/lonrom/

Wide variety of cultivars; cuttings only, no plants; enclose SASE with inquiries.

Sonoma Grapevines, Inc.

1919 Dennis Lane
Santa Rosa, CA 95401

Specializes in viniferas.

Southmeadow Fruit Gardens
Box SM
Lakeside, MI 49116

Specializes in "antique" cultivars, including some Munson selections.

Dave Wilson Nursery
19701 Lake Rd.
Hickman, CA 95323

Wholesale only. Specializes in viniferas.

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Vineyard Supplies

A. M. Leonard Inc.
PO Box 816
Piqua, OH 45356
800-543-8955

Wide range of horticultural tools.

Amberg's Nursery, Inc.
3164 Whitney Rd.
Stanley, NY 14561
716-526-5405

Wirevise connectors, tying materials, more.

Green Hoe Co.
West Main Rd.
Portland, NY 14769
716-792-9433

Hydraulic grape hoes, end-post anchors, more.

Pacific Biocontrol
14615 NE 13th Court
Suite A
Vancouver, WA 98685-1451
800-999-8805

Pheromone disruption system for grape berry moth.

Peaceful Valley Farm Supply
PO Box 2209
Grass Valley, CA 95945
916-272-4769

Organic pest controls and fertilizers.

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Appendix I

Disease Resistance Rating Chart for Grape Cultivars

Compiled by: Guy Ames, Ric Lancaster, October 1999

Cultivar:	Black Rot	Downy Mildew	Powdery Mildew	Botrytis Rot	Anthracnose	Sulfer Sensitive
Abouriou			MR			
Alicante Bouschet			MR			
Alicante Ganzin			HR			
Alwood	R	S			S	
America		MR				
Angur Kalan			HR			
Aramon			MR			
Aurora	MS	MR	MS	HS		
Athens		HS				
Aspiran			HS			
Aubun			HR			
Aurore	HS	SS	MS	HS	SS	No
Babeasca Neagra			HR			
Bacchus			HS			
Baco Noir	HS	MS	MS	MR	SS	No
Barbera			MR			
Baroque			HR			
Bath		MR				
Belcan			MR			
Black Corinth			HS			
Bouteillan			HS			
Brighton	HS	MS				
Buffalo	MS	MR	MR	MR		

Cabernet Sauvignon			MS			No
Campbell		HS				
Campbells Early	MS	HS				
Canadice	HS	HS	MS	MS		No
Cardinal			HS			
Carignane			HS			
Cascade	MR	MR	MS	MR		
Castor			HR			
Catawba	HS	HS	MS	SS	MS	No
Cayuga White	HS	MS	MS	SS	HS	No
Caywood		MR				
Challenger	HS	HS	MS		HS	No
Chambourcin	SS	SS	HS		SS	
Champanel		MR	MR			
Chancellor	MS	HS	HS	SS	MS	Yes
Chardonnay	HS	HS	HS	HS		No
Chardonnay (NY)	MS	HS	HS	HS		No
Chelois	SS	SS	MS	SS	SS	No
Chenin Blanc			MS			
Clairette			HS			
Claverie			HS			
Clinton		MR	HR			
Concord	HS	MS	MS	SS	SS	Yes
Cottage		R				
Cynthia/Norton*	SS	MS	SS	SS	SS	Yes
Cynthiana		R				
DeChaunac	MS	MS	MS	MS	MS	No
Delaware	HS	HS*	MS	MS	MS	No
Diamond	HS	MS	HS			
Durif (Petite Sarah)			MR			
Dutches	MS	MS	MS	MS	MR	
Elviria	MR	MR	MS	MS		
Emperor			HS			
Erie		S				
Flame Tokay			HS			
Foch	MS	SS	MS	MS	MS	Yes
Fredonia	MS	HS	MS	MR		
French Colombard			MS			
Gewurztraminer			MS			
Glenora	HS	HS	HS		HS	
Goeth						
Golden Muscat	HS	MS	HS			

Greek Perfume		S				
Grenache		MR	MR			
Grignolino			MR			
Himrod	HS	HS	HS	SS	HS	
Island Belle		S				
Isabella		MR				
Italia		S				
Ives	MR	HS	MR	MR		
Janjal Khara			HR			
Kendaia						
Kerner			MS			
Lady Patricia		R				
Lakemont		S				
Leon Millot	HS	MS	HS		SS	
Lomanto		MR				
Long John		MR				
Loretto		R				
Lutie		R				
McCampbell		MR				
Maccabeu			HR			
Malbec			MR			
Manito		S				
Marechal Foch	MS	SS	MS	SS	MS	Yes
Mars		S	HR			
Marsanne			MR			
Mataro			MR			
Mauzac			HR			
Merlot			HS			
Meunier			HR			
Mid-South		R				
Missouri Riesling	SS	HS	HS	MS		
Moored		S				
Muscadel			HS			
Muscat Alexandra			HS			
Niabell			HR			
Niagara	HS	MS	MS	SS		No
Oberlin 595		R				
Ontario		MR				
Optima			HS			
Orion			MR			
Patricia		R				
Pearl		S				
Perlette			HS			

Petite Bouschet			MS			
Phoenix			HR			
Pinot Blanc			HR			
Pinot Noir			HS			
Pollux			MR			
Portland						
Rekasetali			HR			
Reliance	HS	S	SS		HS	
Riesling (grey)			HR			
Riesling (white)			MR			
Riesling			MS			
Riesling (NY)	HS	HS	HS	HS		No
Rish Baba			HS			
Rosette	MR	MR	HS	MR		
Rougeon	MR	HS	HS	MR		
Royalty			MR			
Rubired			HR			
Saturn		S				
Schuyler		S				
Semillion			MR			
Seneca		S				
Seyval Blanc	HS	SS	HS	MS	SS	No
Silva			HR			
Sirius			MR			
Sovereign Coronation		S				
Steuben	HS	HS	S	MR		
Suelter		R				
Sylvaner			MS			
Tampa			HR			
Terret Noir			HR			
Thompson Seedless			HS			
Tinto Cao			HR			
Ugni Blanc			MS			
Urbana	MS	HS				
Valdiguier			HR			
Vanessa Seedless		MR				
Venus	HS	HS	HS		MS	
Verdelet	MS	MR	MS			
Vernaccia			MR			
Vidal			HR			
Vidal Blanc	MS	SS	HS	SS	HS	No

Vignoles	HS	MS	MS	HS	HS†	No
Villard Blanc	HS	SS	HS	SS	HS	
Vinered	HS	HS	MS	SS	HS	
Westfield		S				
White Riesling	HS	HS	HS	HS		
Worden	MS	HS				
Yates		S				
Zinfandel			MR			

HR=Highly Resistant **MR**=Moderately Resistant **SR**=Slightly Resistant **R**=Resistant
SS=Sightly Susceptible **S**=Susceptible **MS**=Moderately Susceptible **HS**=Highly susceptible
†=Fruit of Vignoles is highly susceptible to anthracnose while foliage and shoots are only slightly susceptible
***=Fruits not susceptible

References: (The information for this chart was taken from the following sources. Please consider that the disease reaction of a particular cultivar depends on several factors, especially the climate in which it is grown.)

1. Anon. 1987. Relative disease susceptibility under Missouri conditions and sulfur sensitivity of grape cultivars. Missouri Grape Pest Control Guide. State Fruit Experiment Station, Mtn. Grove, MO.

2. Brown, Maurus V., James N. Moore and Patrick Fenn. 1999. Evaluation of grape germplasm for downy mildew resistance. Fruit Varieties Journal. January. p. 22-29.

3. Ries, Stephen M. and Roscoe Randell. 1990. Pest Management for Small Fruit. p. 99-102 in Proceedings of the 1990 Illinois Small Fruit, Strawberry, and Amateur Winemaker Schools. University of Illinois, Dison Springs Agricultural Center, Simpson, IL.

4. Roy, Robert R. and David W. Ramming. 1990.. Varietal resistance of grape to the powdery mildew fungus, *Uncinul necator*. Fruit Varieties Journal. July. p. 149-155.

Prepared by Guy Ames
ATTRA Technical Specialist
October 1999

The ATTRA Project 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. ATTRA is located in the Ozark Mountains on the University of Arkansas campus in Fayetteville, at PO Box 3657, Fayetteville, Arkansas, 72702. ATTRA staff prefer to receive requests for information about sustainable agriculture via the toll-free number 800-346-9140.

General Resources

ATTRAnews

Quarterly Newsletter of Appropriate Technology Transfer for Rural Areas

A project of the National Center for Appropriate Technology

Volume 8, Number 3

Winter-Spring, 2001

ATTRA techs study 'Label Rouge'

American team hopes to import French poultry system to U.S.

Two ATTRA technical specialists are visiting France this month to study how free-range poultry is grown and marketed there under a national certification system known as "Label Rouge." They hope to import French innovations in production and marketing to the growing pastured-poultry movement in the U.S.

Anne Fanatico and Holly Born are among a group of five Americans who have received a small grant from the USDA Scientific Cooperation Research Program to make two trips to farms and research organizations around Le Mans, France. Their host and guide for the initial trip from May 16-25 is Dr. Bertil Sylvander of the French National Agricultural Research Institute. Sylvander is an agricultural economist and expert in Label Rouge production.

'Red Label'

"Label Rouge, which means 'Red Label', began as a grassroots movement in France forty years ago," Fanatico explains. "Under this national certification program, French farmers make use of specialty poultry genetics, processing and marketing techniques to command thirty percent of the poultry market at a one-hundred-percent premium price."

The U.S. group hopes to use the information on Label Rouge to draft standards for a national certification program here. Such a system could greatly expand markets for U.S. pastured-poultry producers who are limited by the number of birds they can realistically grow and market on the farm.

Fanatico has over the past two years has participated in two SARE-funded projects in partnership with Heifer Project International on pastured-poultry research in the U.S. She is the author of the popular handbook, *Pastured Poultry: A Heifer Project International Case Study Booklet*, and is working on a doctorate in poultry science at the University of Arkansas.

✦ **(See Label Rouge page 4)**

President suggests level sus ag funding in FY2002

The Bush Administration is recommending level funding for most sustainable agriculture programs in FY2002. However, the presidential budget provides no funds for the Wetlands Reserve Program or Conservation Security Payments. FY2002 federal budget recommendations by the U.S. Senate and House have not been issued. Markup in the house is expected in early June.

The 2002 budget provides that $30 million for the Fund for Rural America be allocated after the enactment of the FY2002 Appropriations Act, within the discretion granted by Congress to the Secretary of Agriculture.

President Bush has recommended the same funding levels as FY2001 for:

Appropriate Technology Transfer for Rural Areas (ATTRA), $2 million
Community Food Security Act, $2.5 million
Environmental Quality Incentives Program, $174 million
Implementation of the Organic Foods Production Act, $1.6 million
Initiative for Future Agriculture and Food Systems, $120 million
SARE (Chapter 3) Professional Development Program, $3.8 million
Sustainable Agriculture Research and Education (SARE) Program, $9.3 million

News briefs

Eco-labels article available

Eco-labeled Foods: Profit or Problems?, an article by ATTRA technical specialists Al Kurki and Nancy Matheson, explores a new palette of options for farmers and ranchers who want to move away from raising conventional, undifferentiated crops or livestock to something more highly valued by consumers.

According to studies conducted by market researchers in the last five years, about half of U.S. food consumers are motivated to varying degrees to buy "green" or "earth-sustainable" foods.

In addition, European and Asian consumers are buying increasing amounts of food labeled organically grown or raised using Integrated Pest Management (IPM) approaches that minimize pesticide use. But how does anybody begin to make sense of these "green" markets, and what is their potential for profit or problems? The article focuses on some possible answers.

For a free copy of Eco-labeled Foods: Profit or Problems?, contact ATTRA at 1-800-346-9140.

New Ikerd papers

Well-known sustainable agriculture proponent and speaker John Ikerd has made available abstracts of 19 new papers which include two series — "The New American Farm" and "Sustaining People through Agriculture." They are available at: www.ssu.missouri.edu/faculty/jikerd.

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New & revised ATTRA pubs // page 4

Multispecies grazing: Better use of pastures, increased productivity

By Linda Coffey
ATTRA Program Specialist

Multispecies grazing—grazing more than one livestock species on the same land—is the type of grazing evident in nature. It deserves to be more widely used in agriculture, as well. This article will offer a brief look at why multispecies grazing is beneficial for animals, land, and producers.

Cattle prefer to eat grass rather than other types of plants, and are less selective than sheep or goats when grazing. Sheep prefer forbs (broad-leaved plants) to grass, and goats have a preference for browsing on brush and shrubs, and then eating broad-leaved weeds. Therefore, grazing cattle, sheep, and goats together on a diverse pasture should result in all types of plants being eaten, thus controlling weeds and brush, while yielding more pounds of gain per acre compared to single-species grazing.

Greater use of pastures

Multispecies grazing may also benefit pastures that are less diverse, by encouraging more even grazing. Cattle will tend to graze taller grasses that sheep may reject. It has been shown that sheep graze near manure deposits, which cattle avoid; this too results in more even use of the pasture. Carrying capacity and pasture productivity are improved, and animal gains are also increased.

The addition of goats to cattle pastures has been shown to benefit the cattle by reducing browse plants and broad-leaved weeds, thus permitting more grass growth. Goats will control blackberry brambles, multiflora rose, honeysuckle, and many other troublesome plants. With time the weedy species will be controlled so that total carrying capacity is improved. While sheep are less likely to clean up woody plants, they are quite effective in controlling leafy spurge and other weeds, with proper stocking pressure and grazing control. Other benefits of multispecies grazing include reduced problems with poisonous plants, parasites, and predators. Sheep may graze leafy spurge and larkspur, for example, and eliminate them from a pasture. By controlling these plants, which cattle cannot safely consume, sheep encourage growth of better forage plants for the cattle.

Cattle graze with goats in a South Carolina pasture.

Parasites are less of a problem under this system because concentration of sheep or goats on a pasture is lower when they are grazed with cattle, and cattle do not share parasites with sheep or goats. The cattle function as "vacuum cleaners", consuming parasite eggs and preventing them from infecting the sheep or goats. (Note that sheep and goats do share parasites, and so do not help each other.) Cattle may help discourage predation, if the sheep or goats are bonded to the cattle.

Increased productivity

Because multispecies grazing helps reduce weeds, brush, poisonous plants, parasite problems, and possibly predation, producers will notice increased productivity of animals and land. Diversification of animals results in diversification of income sources, and is a way to hedge against price cycles.

In conclusion, multispecies grazing offers many advantages to the livestock producer, as a method of improving pastures and increasing weight gains, managing problems with poisonous plants and parasites, and diversifying income sources. For more information, request the ATTRA publication *Multispecies Grazing* and our other publications on grazing management and livestock production by calling 1-800-346-9140.

Trends In Agriculture poll takes a look at "big picture" areas of U.S. farming

Eighty-nine percent of large-scale farmers think that employing sustainable agriculture practices on their farms will lead to lower productivity and income. Thirty-six percent say they know about sustainable agriculture but don't know how to use it. And 15% say they wouldn't use it even if they knew how because of what the neighbors might think about them.

Those are some of the findings of "Trends in Agriculture," a new Gallup Poll which was co-sponsored by the W.K. Kellogg Foundation and the Alpha Zeta Foundation. The poll surveyed 1,218 large-scale farmers and ranchers about current "big picture" areas of U.S. agriculture — such topics as the general mood of agriculture, technology they use on the farm, sources they use for obtaining information and their opinions of sustainable agriculture.

Survey results are available at www.agmedia.org

Sixty percent of producers in the poll said they are aware of sustainable ag practices, but only 23% use them. Thirty-six percent don't know how to use them. Sixty-six percent said they exclusively use conventional practices, and 11% use a combination of conventional and sustainable practices. Most producers (89%) said perceptions of lower productivity is the main reason they don't use sustainable agriculture practices. Sixty-one percent cited "economic reasons" for not employing sustainable agriculture on their farms. Seventeen percent said their landlords won't allow the use of sustainable farming practices, while 15% said they are concerned what the neighbors will think if they employ the practices.

Better response to regional differences in sustainable ag

NCAT/ATTRA opening office this spring at Davis, California

The National Center for Appropriate Technology (NCAT), which operates the ATTRA project, will open an office this spring at Davis, CA. NCAT has been invited to share offices with the Community Alliance with Family Farmers (CAFF) in a historic house on the T.S. Glide Ranch. The new office will be coordinated by Rex Dufour, who has held a variety of positions with NCAT since 1994.

Dufour (above) will share offices with the Community Alliance with Family Farmers (CAFF) in this beautiful house on the T.S. Glide Ranch.

Expanding NCAT work

"California is a leading player in U.S. sustainable agriculture and organic farming," Dufour says. "Our new office will allow NCAT to become more responsive to regional differences in sustainable agriculture and gather cutting-edge information on a more firsthand basis on behalf of the farmers we serve nationwide. Through this office we also hope to expand NCAT's work in our sustainable communities and sustainable energy programs."

Dufour has been involved with many NCAT sustainable agriculture projects. In the ATTRA project, he has served as Associate Project Manager as well as technical specialist and written several publications in the field of integrated pest management. From 1995—97, he helped to lead an NCAT project for the U.S. Fish and Wildlife Service to develop IPM options for use on Service lands leased to farmers on the Tule Lake/Lower Klamath Basin National Wildlife Refuge on the California/Oregon border. Dufour is a native of Colorado and attended The Colorado College, San Jose State University, and U.C. Riverside.

Meeting the neighbors

This spring, Dufour has been visiting some of NCAT's new neighbors in the Davis area. He presented a poster show on NCAT programs in March at the Partnerships for Sustaining California Agriculture Conference at the University of California — Davis. The conference drew hundreds of farmers, scientists, farm advisors, industry personnel and officials from government agencies involved in sustainable agriculture and methods of implementing biologically-integrated farming systems.

Other visits were made to the Organic Farming Research Foundation (OFRF) and California Certified Organic Farmers (CCOF), both located in Santa Cruz. At the Rural Development Center in Salinas, Dufour observed projects aimed at teaching Hispanic growers about organic production. He was able to observe the Food Systems Project of Berkeley in action while visiting Malcolm X Elementary School there. Under the "Farm to School" project, fresh local produce is being served to students in the school cafeteria as a way to boost local farm income and teach students about healthful eating.

Opening In June

"My travels have left me with an even greater appreciation for the rich diversity of California agriculture, its farmers and the organizations that serve them," Dufour says.

NCAT Executive Director Kathy Hadley says NCAT hopes to open the office by June, initially with one staffer and quickly expanding to two people.

"We will be one of the new kids on the block, but NCAT and its ATTRA project are not really new faces in California," Hadley notes. "From 1999 to 2000 alone, more than 300 California farmers called the ATTRA toll-free number with about 1,500 requests for information about sustainable and organic farming topics. Our agriculture specialists also attend and make presentations at many farm conferences in the state each year."

Founded in 1976, NCAT is a non-profit organization that currently operates about 25 regional and national projects in the areas of sustainable agriculture, sustainable community development and sustainable energy. Its mission is to help people help themselves by providing sustainable technology information, applications and services. NCAT has a staff of about 70 employees with main offices in Fayetteville, AR, and Butte, MT.

Comments welcome

People with suggestions on how ATTRA work done from NCAT's California base can be most helpful to regional farmers and grassroots farmer organizations are invited to contact Hadley at: NCAT, 3040 Continental Drive, Butte, MT 59702, phone (406)494-4572, fax (406)494-2905, email kathyh@ncat.org, or Dufour at: NCAT, P.O. Box 3657, Fayetteville, Arkansas 72702, phone (501)442-9824, fax (501)442-9842, email rexd@ncat.org. For more information about NCAT and its projects, please visit the website: www.ncat.org.

New ATTRA pub describes kaolin sprays to control Pierce's disease

Organic California grape producers facing the new threat of Pierce's disease being carried to their vineyards via the glassy-winged sharpshooter are encouraged to order ATTRA's new publication: *Kaolin Clay for Management of Glassy-winged Sharpshooter in Grapes.*

Written by specialists Rex Dufour and Richard Earles, the publication describes the use of kaolin sprays to combat the winged sharpshooters. Pierce's disease is a xylem-clogging bacteria which will kill a vine within two years of infection.

To order the new publication and a sister publication called *Insect IPM in Apples: Kaolin Clay,* call 1-800-346-9140.

ATTRA
Appropriate Technology Transfer for Rural Areas
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A project of the National Center for Appropriate Technology

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Label Rouge: 'Vividly distinguishable' from standard poultry

(Continued from page 1)

Born works on projects and client cases at ATTRA involving applied agricultural economics and marketing in sustainable agriculture. She earned a masters in agricultural economics in 1996 from Washington State University and a masters in business administration in 2000 from the University of Arkansas.

Other members of the U.S. delegation include Diane Kaufmann of the American Pastured Poultry Producers Association, Steve Stevenson, a rural sociologist at the Center for Integrated Agricultural Systems at the University of Wisconsin – Madison, and Keith Richards, coordinator of the Southern Sustainable Agriculture Working Group.

Gathering the data

During this first trip to France, the group will gather technical data by visiting agencies, farms, a slaughter facility, a certification body called "Quali Ouest," Syvol, a poultry cooperative, and other sites. Their focus will run the gamut of the Label Rouge system, from breeds, feeds, and raising birds, to processing, distribution and food safety. This information will be used to draft U.S. Label Rouge-type standards, develop strategies for outreach and coordination, and disseminate information to U.S. small farmers and other agri professionals. The group plans a follow-up trip to France sometime in 2002.

"Pastured and free-range poultry production has been growing in the U.S. as consumers look for alternatives to conventional poultry products," Born says. "Small-scale poultry producers who process and market birds on-farm report more demand than supply, but market penetration is not deep – many consumers do not have direct contact with farmers. There are very few independent government-inspected processing plants where these producers can take their birds. Many states limit the number of birds a producer can process on the farm to 1,000 per year."

U.S. producers need access to better processing and marketing channels, the two specialists say. These producers also typically use poultry breeds designed for large-scale confinement systems. Using broiler genetics designed for pasture rearing would benefit not only production but also help to differentiate the product in the marketplace.

Public recoil of the 1960s

The Label Rouge poultry system was born in France during the 1960s as poultry production became more industrialized. Supported by the government, Label Rouge operates under a nationwide structure that ties together regional groups of producers with feedmills, hatcheries, breeding firms, processors and distributors. This complex network delivers poultry products that are said to be "vividly distinguishable" from standard poultry products in the areas of quality, product image and environmentally-sound production practices.

> U.S. producers need access to better processing & marketing channels

Label Rouge is labeled by the French National Commission for Labels and Certification (CNLC). SYNALAF, a national syndicate of poultry labels. collects a check-off fee from the sale of each ' ' national consumer education and pu' for Label Rouge products.

Product and p rds are set by the CNLC. Standards include access by birds to the outdoors and natural feed rations with no animal byproducts. Flock size and the number of flocks per farm are strictly limited. The grow-out period for Label Rouge broilers is 81 days, compared to 45 days for standard chicken.

Air chilled birds

Label Rouge birds are processed by air chilling, instead of immersion or water chilling as in the U.S. In Europe, air chilling is said to reduce microbial cross-contamination, as well as water uptake from the chill tank. Processed poultry in the U.S. is allowed to contain from 8-12% water weight. Salmonella occurrence in Label Rouge poultry averages 3%, compared to 69% for standard chicken.

"Quality labels such as Label Rouge are a growing trend in other countries," Fanatico says. "We believe the commercial potential in the U.S. is high with the rapid growth of the natural and organic food sectors. Our central goal in this project is to find yet another way to increase financial stability for small farms and rural communities."

ATTRA*news*

Teresa Maurer, ATTRA Project Manager
David Zodrow, ATTRA*news* Editor
May, 2001

ATTRA*news*, a quarterly publication of Appropriate Technology Transfer for Rural Areas, is mailed free of charge to ATTRA friends and users. ATTRA disseminates information about sustainable agriculture to U.S. farmers, agribusiness, Extension agents and other interested people. ATTRA is funded through the Rural Business-Cooperative Service, U.S. Department of Agriculture and is administered by the National Center for Appropriate Technology (NCAT), a nonprofit organization. Since 1976, NCAT has worked to champion sustainable technologies and community based approaches that protect natural resources and assist people, especially the economically disadvantaged, in becoming self-reliant.

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Horticulture Series

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- Herbs
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Agroforestry

• **Overview of Agroforestry**
Alleycropping, silvopasture, shelterbelts, buffer strips, forest farming, costs, marketing, products, resources.

• **Sustainable Pecan Production** Updated
Basics of pecan culture, native versus plantation systems, economics, non-chemical weed control, orchard floor vegetation management using legumes, organic fertilizer options, organic and least-toxic insect and disease control, sources of further information.

Herbs

• **Herb Overview (available in PDF)** Updated
Marketing strategies, trade organizations, literature, conferences, consultants, resource list.

• **Echinacea as an Alternative Crop (also in PDF)**
Production of Echinacea root as raw material for the herbal supplement industry.

• **Ginseng, Goldenseal & Other Native Roots (also in PDF)**
Status of ginseng and related species (opplopanax, Siberian ginseng, sarsaparilla), goldenseal and black cohosh (related), and blue cohosh as alternative root crops for the herbal supplement industry. Includes USDA bulletin.

• **St. Johnswort as an Alternative Crop**
Evaluation of St. Johnswort as an alternative farm crop (raw materials for the herbal supplement industry).

Fruit Crops

• **Overview of Organic Fruit Production (also in PDF)**
Fertilization, pests, weed control, obstacles.

• **Organic & Low Spray Apple Production (also in PDF)**
Geographic factors, organic pest and disease control, disease resistant varieties, marketing ideas, case studies, economics, and kaolin clay for pest control.

• **Organic Blueberry Production (also in PDF)**
Highbush, fertility, insect pests, diseases.

• **Organic Culture of Bramble Fruits (also in PDF)**
Diseases, pests, and resistant varieties.

• **Organic Grape Production (also in PDF)**
Geographic factors, organic pest and disease control, disease resistant varieties, and marketing ideas.

• **Pawpaw Production**
Culture, research, markets, pesticidal properties.

• **Organic Peach Production**
Geographical considerations, pests, diseases, organic grower profile, "soft" pesticides, resources.

• **Organic Pear Production**
Geographical and climate considerations, diseases, disease-resistant cultivars, insect and mite pests, Asian pears, economics and marketing, further resources.

• **Strawberries: Organic & IPM Options**
Fertility, weed control (cultural, biological and mulches), insect and mite control, disease control, symptoms and identification, alternatives to methyl bromide, references.

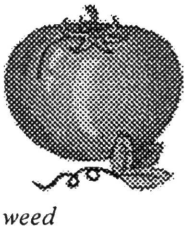
Vegetable Crops

• **Organic Allium Production**
Discusses all alliums (onions) except for garlic. Information on varieties, culture, soils and fertility, irrigation, integrated pest management (including weeds, insects, and diseases), harvest, postharvest, and economics.

• **Companion Planting**
The scientific and traditional bases for plant associations are discussed. A companion planting chart for common herbs, vegetables and flowers is provided, and a resource list.

• **Organic Sweet Corn Production**
Features traditional ideas and current concepts for fertility, pest management, and marketing.

• **Sprouts and Wheatgrass Production**
Hydroponic and shallow bed methods to sprout vegetable and cereal grain seeds. Food saftey issues are addressed. Books, seed suppliers, and equipment sources are listed.



• **Organic Tomato Production**
Organic certification, economics, variety selection, crop rotation, fertility, weed management, training systems, insect and disease control, resources and web links.

Other Horticultural Topics

• **Sustainable Cut Flower Production (also in PDF)**
Marketing, climate, trade organizations, conferences, literature, species list.

• **Mushroom Cultivation & Marketing**
General review of cultivation technologies (including shiitakes), enterprise evaluation, further research resources.

• **Suppliers of Organic, Non-GE or Heirloom Vegetable Seed (also in PDF)**
Some sources for hard-to-find untreated, heirloom, organic, and non-genetically engineered vegetable seed. Includes electronic contacts.

• **Organic Potting Mixes**
Describes potting mix ingredients and appropriate mixes for organic and sustainable operations; extensive listing of prepared mixes and suppliers.

• **Postharvest Handling of Fruits & Vegetables**
A guide to maintaining produce quality and safety for the market gardener.

• **Sustainable Turf Care**
Least-toxic practices, compost, irrigation, variety selection, mowing, insect & disease management, weed management, resources.

• **Sustainable Small-Scale Nursery Production (available in PDF)**
Container and field production, irrigation and runoff, weed control, integrated pest management, fertilization, potting media, marketing, costs, sources for additional information.

• **Season Extension Techniques for Market Gardeners**
Cultural practices, mulches, floating row cover, slitted and punched row cover, cold frames, high tunnels, shade cloth, economics, sources for additional information.

Of Interest In Other Series:

Greenhouse Series:

- Organic Greenhouse Vegetable Production
- Aquaponics - Integration of Hydroponics with Aquaculture (also in PDF)
- Organic Plug and Transplant Production
- Organic Greenhouse Herb Production (also in PDF)
- Suppliers of Plugs for Medicinal Herb Crops
- Solar Greenhouses
- Greenhouse & Hydroponic Vegetable Production Resources on the Internet (also in PDF)

Livestock Series:

- Alternative Pollinators: Native Bees

Fundamentals of Sustainable Agriculture Series:

- Manures for Organic Crop Production

Organic Matters Series

- Organic Matters: Pursuing Conservation Tillage Systems for Organic Crop Production

Current Topics:

- Lavender as an Alternative Farm Enterprise

Other Resources:

- Phenology Web Links: Sequence of Bloom, Floral Calendars, What's in Bloom
- Tomato Web Links

Note: For those publications not available on-line, please call **1-800-346-9140** *to receive a free printed copy.*

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The University of Georgia College of Agricultural & Environmental Sciences/Cooperative Extension Service

Is Your Agribusiness Project Feasible?

Richard W. Schermerhorn; Leader, Extension Agricultural Economics

Considerable change is occurring in Georgia's agriculture. Some farmers face difficult financial times as a result of such factors as limited market opportunities for traditional commodities, relatively low commodity prices, price increases for input items, changes in farm policy and programs and unfavorable weather conditions. In addition, considerable acreage has been removed from production, resulting in decreased demand for farm inputs. Impacts related to declining levels of both on farm and off-farm business activity have been felt by farmers, input supply firms, marketing firms and other firms supplying services to the agricultural sector.

Rural communities have been affected, severely in some cases, by changes in agriculture-related business activity. Some rural communities have experienced economic growth rates comparable to urban and suburban areas. Other rural communities have experienced a decline in growth rates in recent years. A decline in business activity because of a decline in demand for consumer goods and services and agricultural inputs supplied by local businesses has resulted in a general decline in the local tax base. Local governments depend on their tax base to fund public services such as schools, hospitals, waste disposal, fire and police protection and roads.

In short, multifaceted changes are occurring that are affecting Georgia's agriculture and rural communities. To cope with these changes, Georgia's farmers and agribusiness firms that depend on agriculture must constantly search for alternative types of enterprises and/or alternative methods of producing and marketing goods and services. While conducting this search it is critical to recognize that before any new enterprise or method of producing and marketing a product is initiated, it should be determined whether the proposed venture is financially viable; that is, will it be profitable? A feasibility study is designed to determine whether a specific proposal has a profit potential and is financially sound. This publication reviews the types of situations requiring feasibility analyses and discusses what is involved in conducting a feasibility analysis. It is also designed to serve as a guide for conducting adequate and meaningful feasibility studies.

Types of Situations Requiring a Feasibility Analysis

It is important to conduct a feasibility analysis any time a firm considers significant change in its present operating situation, because one purpose of conducting the analysis is to avoid costs associated with making a wrong decision. If the analysis identifies a "good" business opportunity, a completed feasibility study is an ideal document for planning purposes and can be used for securing necessary financing.

The following situations may require a feasibility analysis before a final operational decision is made:

- When a farmer or group of farmers is considering the production or marketing of a new commodity.
- When a group of farmers is considering a new venture, such as the formation of a cooperative to purchase farm inputs or to collectively market the production of the group's members.
- When a farmer or agribusiness firm is considering diversifying operations. Many farmers and agribusiness firms have diversified into alternative enterprises in an attempt to reduce reliance on one product or one group of products, to lower over-head costs, and to more fully utilize existing production resources, facilities or distribution channels.
- When a firm is considering a geographical expansion of its market area. Many agribusiness firms have expanded their market area to gain a larger market share and achieve a greater ability to negotiate price with buyers and/or sellers.
- When a firm is considering the international market. Many agribusiness firms are interested in the export market as a means of expanding output. There are many differences between export markets and the domestic markets, many incurring additional costs.
- When a firm is considering a new service or product line. For example, many of Georgia's input supply firms have added services and products because their customers suggested a need. Many of these products or services have been added without the benefit of a feasibility analysis to determine if the addition would be profitable.
- When a farm or agribusiness firm is considering adoption of new technology, a new production system, or new tillage or conservation practices. Adoption of new technology is often required for agricultural operations because of changing sanitation requirements, changing pollution standards and environmental concerns.

- When a firm is considering a new location. This may be the result of changing conditions at the firm's present location. Conditions that motivate change include wage rates, adverse public opinion regarding pollution control, or a decline (or increase) in production of the raw product because of altered competitive conditions compared to other areas.
- When a firm is considering expansion or modernization of present facilities. This desire may stem from expanded demands for goods or services, from an attempt to gain economies of size in the production process, or from a desire to update obsolete facilities to compete better with other firms.
- When the firm is considering a combination or alliance of firms to improve the operating position and further the common interest of these firms. This situation includes mergers, acquisitions or consolidations. The need for this type of reorganization may result from a decline in volume handled by the agribusiness firms, a change in the market structure that requires larger volume, or the need to ensure a supply of inputs or a market for the firm. Duplication of effort can often be eliminated and costs reduced if two or more firms are consolidated.

This list indicates that the term "feasibility" is broad and covers many situations that develop for farmers and individual agribusiness firms. Consequently, the content of and the methodology followed in conducting any given feasibility study vary considerably. This publication reviews the content of a complete feasibility study and outlines an analysis for a new enterprise. However, this study and analysis can also be related to analyzing partial projects, such as an agribusiness firm building a new facility to complement its ongoing business or adding a new service to better serve its clientele. Appendix A summarizes the elements of a complete feasibility analysis in outline form. Appendix B provides a listing of various types of feasibility studies that have been conducted by members of the Division of Agricultural Economics at the University of Georgia. This listing demonstrates the breadth of types, methodologies and technical designs of feasibility studies as well as the variety of subjects investigated using feasibility studies.

Conducting a Complete Feasibility Analysis

A feasibility study can be divided into two major phases: An analysis of directly influencing factors and an analysis of environmental conditions.

Analysis of Directly Influencing Factors

This phase of a feasibility study is designed to pro-vide basic information required to determine the economic viability of the proposed enterprise. The information will likely be required for loan applications and helps determine whether the enterprise can earn profits and generate sufficient cash flow to repay the loan. In other words, this phase of a feasibility study is designed to answer three questions:

- What factors must be considered to determine whether the proposed venture should be pursued?
- How much will it cost to enter the business and what facilities will be needed?
- How much profit can be made and when can this profit be expected?

The analysis of directly influencing factors can be divided into market determination, raw product supply, and the production process.

Market Determination

Determination of the market for a product or service is the most difficult part of the analysis to conduct in most feasibility studies. The degree of difficulty is related to the accessibility of potential customers. For example, a farm supply or marketing cooperative considering adding a service for its members may survey its existing membership to secure an indication of demand for the service. However, if the same firm is considering the initiation of a market development program for a product produced by its members, potential customers will need to be identified.

Availability of a market is critical to the success of any business venture. If a market does not exist for a product or service, then there is no economic rationale for producing the product or offering the service and the feasibility analysis can be terminated.

For the remainder of this publication, the term "product" is defined broadly to include a physical product or a service. This eliminates the need to constantly use the phrase product or service.

Analyzing market potential for a product involves determining current and potential consumption of the product, types and location of available markets, types of distribution systems available, ways the market can be entered, types of buyers within the market, types of selling arrangements used, and the level of prices charged for the product. The following items should be analyzed to determine market potential.

Consumption: Current consumption and trends in consumption of the product must be determined. Current consumption and trends in consumption of competing products are also important. In what form, qualities and volumes is the product consumed? Which segments of the population consume the product? Are these segments getting larger or smaller?

Markets: Knowledge about the market a firm expects to serve must be obtained. If a firm is considering supplying a new product to its current customers, they may be its market, but the firm may want to expand its market by attracting new customers. Are these markets domestic or international? What will it cost to serve these markets? Who is currently serving these markets? How will competitors react if another firm enters the market? At what capacity are current competitors operating? Can a new firm compete with existing firms or potential entrants?

Distribution System: Determine the type of distribution system appropriate for the proposed business. Will it be necessary to perform any delivery activities? Will transportation of the product to the market be required? If so, what methods are available? What delivery schedules will be required? Should the firm provide transportation services? If so, should be purchased or leased? What will be the cost of providing distribution services?

Market Entry: Determine how the product will be introduced into the market. Will the product be marketed under the firm's brand or a buyer's (wholesaler or retailer) brand? What will get the buyer's attention: lower prices, advertising and promotion, or some other method? How long will it take to build the market to desired sales volume? What costs are associated with entering the market?

Buyers: Identifying buyers is also important. What types of buyers (retail stores, wholesalers, farmers, manufacturing institutions or others) are expected to purchase the product? What volume is each buyer expected to purchase? Where are the buyers located? What product specifications will buyers require? Have potential buyers indicated an interest in the product? What kind of commitment will potential buyers make to buy the product? How reliable are buyers of this product? What kind of payment schedules will be encountered?

Selling Arrangements: The type of selling arrangements that may be encountered also needs to be addressed. What kind of selling services must be provided with the product, and what costs will be involved? Should a sales force be maintained or should a broker be used? Should the firm have sales offices? If so, where should they be located? How many salespeople should the firm have? What type of compensation plans should be implemented for salespeople? What will be the cost of providing these selling activities?

Prices: A critical element of the analysis is the price the firm can expect to charge for the product. This can be determined in part by analyzing past prices and price trends; price projections can then be developed in light of expected future consumption. Expectations of buyers and other suppliers of the product should be included in the price predictions .

Price prediction is often a difficult task. The process becomes increasingly difficult the further into the future prices are predicted. If prices are characterized by a large amount of variation, future price projections should reflect this historic variability. Often, the process of projecting prices involves determining a relevant range of prices. Then you can determine how sensitive financial success is to the level of prices.

Raw Product Supply

This part of the analysis determines availability of raw product inputs for the proposed enterprise. Examples of inputs include fat cattle for a meat packing plant, feeder cattle and feed grain for a feedlot, vegetables for a packing shed or a processing plant, oilseeds for a crushing facility and grain for a feed mill.

Four factors need to be included when analyzing raw product supply.

Minimum Size Facility: A minimum facility size is necessary to produce output at an acceptable per unit cost for many products. Most agribusiness firms operate multi-facilities and one of these limits the rest. For example, the processing plant an integrated broiler operation is usually the limiting facility and all other facilities (such as the hatchery, growout and feed mill) must be geared to the processing plant. Thus, if the minimum facility size for a broiler processing plant is 12,000 birds

per hour, then all other facilities and operations in the integrated organization must be designed to provide 12,000 birds per hour to the processing plant.

In general, the minimum economic size of a facility can be determined by a cost analysis of existing plants or by synthesizing a model facility from specifications provided by equipment companies.

Plant Requirements: The minimum economic size of the facility can be used to determine the required amount of raw product. If, for example, consideration is being given to establishing a 20 head per hour meat packing plant that will operate eight hours a day, five days a week, 52 weeks a year, about 41,600 head will be required to operate at capacity. Procurement for the previously integrated broiler processing facility would require about 25 million broilers annually. The plant must be provided with adequate raw product to facilitate operation at or near capacity if the plant is to be financially viable.

Availability of Required Inputs: After the required amount of raw product is established, determine if this quantity is available in the needed quality and at an affordable price. There is usually a maximum distance from the facility within which the firm must obtain its raw product. In some cases, this distance is determined by the effect on quality of time from harvest to processing. In other cases, transportation costs define the area within which the facility can draw its raw product. For example, most poultry processing facilities limit their production area to 25 miles from the plant.

With these factors in mind, you can determine the availability of raw product. A survey of the defined production area (the drawing area for the facility) is usually necessary. This survey will initially be an analysis of statistical production data for area to determine if there is enough production of raw material to support profitable operation of the facility. The survey may also include direct contact with area growers to determine future production plans and future price expectations.

Where present volume of production is below facility needs, the survey should focus on potential producers, to determine their willingness to begin production of the raw product. For example, the poultry processing plant would require production from about 200 broiler houses. The survey attempts to determine if potential producers in the area have or would be willing to build 200 broiler houses.

Assurance of Future Input Supply: It is not sufficient to know that adequate production for plant needs currently exists in the area. There must be some assurance of future availability of required inputs. Is the source of raw material dependable? What explicit arrangements can be made for procurement? Would growers sign long-term contracts to ensure an adequate source of supply? It is also important to identify the current market use of the raw product and to determine what degree of market entry appears possible. Can the proposed business compete with this alternative use?

The amount of raw material needed to operate the proposed facility at an efficient level can be established from the Raw Product Supply stage of a feasibility study. This stage of the study will also show whether this raw product is currently available at an acceptable price and if this source of supply is dependable.

Production Process

This phase of a feasibility study analyzes the production component of the proposed activity. It assesses specific facility needs, capital requirements, cost and quantity of labor needed, necessary financing, and the potential costs and returns associated with the business venture.

Facility Determination: Determining the minimum size of the controlling facility was discussed under the Raw Product Supply section. The facility determination phase of the analysis expands this to include specific facility needs for the entire operation. In this stage, special emphasis must be placed on current technology which the enterprise must consider to compete within the desired business environment.

Special attention must also be placed on prevention of potential problems that could arise from such social concerns as waste management and air and water pollution. The type and cost of technology required to meet these concerns has become increasingly important as a basic element of feasibility studies.

Investment Capital Needs: Once specific facility needs have been determined, the cost of developing the facility can be estimated. How much capital will be required to meet initial investment needs? Costs of the necessary facilities are based on estimates from equipment companies, construction companies and utility companies.

Labor Needs: Labor requirements can be estimated after facility needs are determined. (Information on how many

employees are required to operate the proposed facility is usually available from the companies providing the facilities.) By comparing facility needs to the available local labor force, the issue of adequate labor can be addressed. Two important cautionary points need to be raised. First, identify any special skills necessary to meet labor requirements. Second, it is important to recognize that a given level of local unemployment is not necessarily an indication of the available labor force or of willingness to work at a particular type of work.

Labor needs also involve availability of management and technically trained people. This factor can have a major influence on success or failure of the undertaking. Such talent may be difficult to find in some locations. These key people should be identified during the feasibility study. If they are not available locally, identify them elsewhere and make arrangements for re-locating them.

Cost of Operation: This phase analyzes information about wage rates, management costs, raw material input costs, utility rate structures, and fixed costs including depreciation, interest, taxes and insurance. This analysis is used to develop cost budgets for the various phases of the operation. These budgets should provide an estimate of per unit cost of operation.

Profitability: The profitability of the operation can be projected using the estimates of costs and expected prices. A projected income statement must be prepared to determine the profitability of the operation. Preparation of a break-even chart is recommended. This chart will show the level of production where the proposed enterprise will be able to exactly cover all costs of operation. The chart can be used to determine break-even points for alternative output price levels, wage rates and raw product costs. The break-even chart provides information on the minimum level of production and minimum output price that must be attained to achieve the break-even point.

Working Capital Needs: Completion of the projected income statement does not represent the end of the feasibility study. Another important item to include in the study is the cash flow summary. Provision for adequate working capital is one of the most critical items for the successful operation of a business. A cash flow summary determines the firm's cash needs and the sources available to meet these needs.

It is important to know how much capital will be needed for day-to-day expenses such as wages, inventories, utilities and raw product, when this capital will be required, and the source of this capital. Will operating capital be generated from customer receipts, borrowing, membership equity or other sources? A cash flow summary is also required to determine the appropriate size of loans, duration of loans, probable pay-back periods, and amount of interest and principal that can be paid back in each period. Many new businesses find themselves in poor operating condition because they failed to provide for working capital.

The production process stage of a feasibility study provides information on what facilities are needed, how much these facilities will cost, what operational items such as labor, utilities and raw product will cost, how much profit can be expected and how much working capital will be required to operate the business.

In summary, the analysis of directly influencing factors will help the firm avoid costs associated with making a wrong decision and provides a valuable planning tool to implement the new business venture. It analyzes factors that directly affect the success of the operation, such as:

- Assurance that an adequate, profitable market can be secured for the output of the operation;
- Assurance that a sufficient supply of quality raw products can be procured at an acceptable price;
- Determination of facility needs, capital requirements, financing requirements and potential costs and returns from the operation. Analysis of these factors will determine whether the venture will be financially sound and profitable. Knowing that the proposed venture may be unprofitable is as important (if not more so) than confirming the potential for success.

Analysis of Environmental Conditions

A complete feasibility study analyzes the availability of facilities and services which the firm feels are essential to create an acceptable environment in which the plant can operate and its management and labor force can live. This phase of the feasibility study deals with factors affecting the location of the facility. These factors are considered after the general location, as affected by supply of raw product and availability of markets, is determined.

For example, a vegetable packing plant has decided to locate in a specific area of a state and now wants to choose the specific city or town in which to locate the plant. The following is a brief outline of factors to consider in this phase of the analysis:

Availability of a site with required physical characteristics, access to the major production area of the raw product, access to necessary transportation services and availability of the site on acceptable financial terms.

Local services in the community including availability of and rates for electrical power, gas service, telephone service, water and sewer service, fire protection, police protection, medical services, cultural and recreational facilities, postal service, financial services, educational facilities and vocational training facilities. The consideration given to these factors depends on the degree of use the proposed facility expects to make of each service. For example, if the facility will require the import of personnel, such factors as recreation facilities, schools, medical facilities and available housing are important for satisfying the new personnel. It is important to evaluate the availability and rate structure for the use of all required utilities.

Type of governmental structure, including an analysis of property tax assessment policies, types of taxes, tax rates, zoning ordinances, building codes and pollution and sanitation regulations.

Transportation facilities, including transportation modes available, adequacy of facilities, record of performance, cost and rates, and regulations or tariffs. This indicates the general type of factors that a new business firm should analyze before making a specific location decision. The individual factors that should be emphasized depend upon the particular needs of the firm.

Summary

Georgia's agriculture is changing rapidly. To adjust to these changes, farmers and agribusiness firms must constantly search for alternative enterprises and alternative methods of producing and marketing their products. This search must be done in a systematic manner to ensure that alternatives are financially feasible before they are selected. A feasibility study is designed to determine whether a specific alternative is financially viable.

A complete feasibility study analyzes such factors as market potential, raw product supply and the production process as well as such environmental conditions as the availability of facilities and services required by the proposed venture. The venture has the potential to be profitable if all of these factors are analyzed adequately and are determined to be favorable. It is important to recognize that all business ventures involve an element of risk. Although in any business venture some possibility of failure always exists, a well-prepared feasibility study can substantially reduce the probability of a bad decision.

Management is the final profit-determining factor. The firm must have competent management to follow through on the functions of planning, organizing, directing, staffing and controlling in order to ensure a profitable undertaking.

Finally, recognize that individuals directly involved with the proposed project may have difficulty maintaining an objective perspective. Consider obtaining an objective evaluation from an outsider knowledgeable about the proposed business activity. Your Cooperative Extension Service is a knowledgeable source for most types of agricultural and agribusiness enterprises and may be able to provide assistance in the evaluation process. Your county Extension agent may have sample feasibility studies and may know of others with professional expertise available to provide technical input to the study.

APPENDIX A

Conducting a Complete Feasibility Analysis

A. ANALYSIS OF DIRECTLY INFLUENCING FACTORS

1. Market Determination - determines potential market for the proposed product.

- Consumption - analyzes consumption trends of the proposed product and competing products and determines form, quality and volume requirements.
- Markets - determines type, location and cost of serving potential markets.
- Distribution system - determines type, method and cost of distribution system for the product.
- Market entry - determines method and cost of introducing the product to consumers.

- Buyers - determines type of buyers and requirements and costs of selling to these buyers.
- Selling arrangement - determines type of selling arrangements, including delivery schedules, pricing arrangements and payment schedules.
- Prices - projects expected prices for the product.

2. Raw Product Supply - determines economic availability of sufficient raw product.

- Minimum economic size of controlling unit - cost analysis of existing plants or synthesized models.
- Plant requirements - determines quantity of raw product required to support controlling unit.
- Availability of requirements - determines if required quantity of raw product is available, and is of suitable quality at an acceptable price.
- Assured supply of requirements - determines if required raw product supply can be expected in the future.

3. Production Process - determines facility needs, capital and financing requirements, and potential costs and returns.

- Facility needs - determines specific facilities (buildings, equipment and rolling stock) required.
- Investment capital needs - determines initial investment requirements for facilities.
- Labor needs - determines specific quantity and types of labor required.
- Cost of operation - develops cost budget to include costs of labor and management, raw material and operational and fixed components.
- Profitability - determines potential profit by estimating returns and comparing with cost budgets. Also includes break even analysis and preparation of projected income statement, balance sheet and cash flow statement.

B.ANALYSIS OF ENVIRONMENTAL CONDITIONS

1. Availability of site - determines adequacy of site in physical and economic terms.

2. Availability of services - determines adequacy and cost of required services such as utilities, financial services and educational services.

3. Governmental structure - determines type of governmental policies in area as they affect operations, such as assessment policies, taxes and zoning ordinances.

4. Availability of transport facilities - determines adequacy and cost of transportation facilities to be used by the firms.

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[ ] Check here if you wish to receive information about the *AFSIC series of videotaped oral history interviews* with leaders in the sustainable agriculture movement.

The Center also has a limited number of copies of the following hardcopy publications to distribute:
[ ] *Alternative Agriculture*, National Research Council, 1989, 448 p.
[ ] *Aquaculture Overview*, G. Lewis & J. Shelton (Univ. of GA Extension Service), 1994, 8 p.
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Many of AFSIC's bibliographies and reference guides are derived from searches of the National Agricultural Library's database, AGRICOLA. AGRICOLA (AGRICultural OnLine Access) is a bibliographic database of citations to the agricultural literature created by the National Agricultural Library and its cooperators. Production of AGRICOLA records in electronic form began in 1970, but the database covers materials in all formats, including printed works from the 15th century. The records describe publications and resources encompassing all aspects of agriculture and allied disciplines, including animal and veterinary sciences, entomology, plant sciences, forestry, aquaculture and fisheries, farming and farming systems, agricultural economics, extension and education, food and human nutrition, and earth and environmental sciences. When fully loaded, AGRICOLA will contain more than 3.5 million records. AGRICOLA does not contain the materials, but it does identify and help locate them.

AGRICOLA is now searchable on the Web at http://www.nal.usda.gov/ag98. We encourage our customers to use AGRICOLA for searching, not only to find resources on their own topics, but to update the information in our bibliographies. Note the "Search Strategy" listed at the beginning of our individual Quick Bibliographies for suggested keywords. Please read the "Search Hints" on the AGRICOLA search page carefully for best search results.

Availability of databases and documents available for searching on-line is increasing rapidly. For a detailed list of electronic databases related to agriculture, available to our staff, please contact us. We will be happy to share our publication, "Finding Information and Information Resources Through Tools Available at the Alternative Farming Systems Information Center."

You may also wish to review the resources at the Agricultural Network Information Center (AgNIC). A searchable compilation of electronic databases with information on how to access each one is available at the AgNIC Web Site, http://www.agnic.org/agdb/

Great Places to Find Information about Farming Alternatives

Compiled by Mary Gold
Alternative Farming Systems Information Center
National Agricultural Library, ARS, USDA
October 2000

Alternative Farming Systems Information Center

AFSIC specializes in locating and accessing information related to alternative enterprises and crops as well as alternative cropping systems. Librarians/information specialists provide free library services on request: referrals to books, journal articles, internet sites, experts, and organizations and agencies. Their publications, "Quick Bibliographies" and reference guides (available on-line and in hardcopy) include *Growing for the Medicinal Herb Market Selected Sources and Resources*; *Community Supported Agriculture Resources for Farmers*; and *Raising Emus and Ostriches*. A links page is arranged by alternative enterprise/topic.

Alternative Farming Systems Information Center, National Agricultural Library, Rm 304, 10301 Baltimore Ave., Beltsville MD 20705-2351. Phone: 301-504-6559 or 301-504-5724; fax 301-504-6409; TDD/TTY: 301-504-6856. Internet: afsic@nal.usda.gov; http://www.nal.usda.gov/afsic/

Appropriate Technology Transfer for Rural Areas (ATTRA)

"ATTRA provides technical assistance to farmers, Extension agents, market gardeners, agricultural researchers, and other ag professionals... Topics addressed by ATTRA can be categorized into three broad areas: sustainable farming production practices, alternative crop and livestock enterprises, and innovative marketing." In addition to direct assistance, ATTRA provides a treasure-trove of farmer-ready resources including publications on specific practices, crops (e.g. *Organic Plug and Transplant Production*; *Organic Greenhouse Herb Production*; *Sustainable Cut Flower Production*; *Organic and Low-Spray Apple Production*), and enterprises (e.g. *Adding Value to Farm Products: An Overview*). There are also newsletters, related links and resource guides, for instance, the on-line version of *A Guide to USDA and Other Federal Resources for Sustainable Agriculture and Forestry Enterprises*, a directory of funding agencies.

Appropriate Technology Transfer for Rural Areas (ATTRA), P.O. Box 3657 Fayetteville AR 72702. Phone: 1-800-346-9140 (M-Th 8:30am-4:30pm CST; F 8:30am-12:30pm CST). Internet: http://www.attra.org

Missouri Alternatives Center

The Center serves "Missouri farmers, Extension staff, government personnel and people who want to begin farming, diversify their current operation, or find ways to profit from small amounts of acreage." Anyone may access their website resources, which include an on-line newsletter, and a comprehensive database of full-text, on-line Extension and related how-to publications from all states and on many alternatives, "from Asparagus to Watermelons, and Aquaculture to Worms."

Missouri Alternatives Center, University Extension, 531 Clark Hall , Columbia MO 65211. Phone: 573-882-1905; fax 573-884-4336; 800-433-3704 (MO only). Internet: moac@ext.missouri.edu; http://agebb.missouri.edu/mac/ and http://agebb.missouri.edu/mac/links/index.htm

Small Farm Center

While aimed at California producers, the Center offers a great deal of information useful to all. Publications include *Small Farm News* (quarterly; hardcopy and on-line), *Small Farm Handbook* ($15 plus tax and shipping), *The Specialty and Minor Crops Handbook* (63 crop profiles+; $35 plus tax and shipping), and *Production Practices and Sample Costs* booklets focusing on specific crops/geographic areas ($4 each plus tax and shipping). Many related resources, including selected crop profiles from the Handbook, the Small-Scale Agriculture Alternative information sheets on individual crops and enterprises originally published by the USDA Office of Small Scale Agriculture, and much more, may be found on their website.

Small Farm Center, University of California, One Shields Ave., Davis CA 95616-8699. Phone: 530-752-8136; fax 530-752-7716. Internet: sfcenter@ucdavis.edu; http://www.sfc.ucdavis.edu

Small Farm Program

This USDA program offers several directories on-line (and some in hardcopy, free on request) including *Directory of State Small Farm Program Coordinators* and *Directory of State Contacts in Value-Added Agriculture.* Also of interest, the classic USDA publication, *Getting Started in Farming on A Small Scale* (hardcopy, free on request), an on-line *Small Farm Resource Guide*, and the newsletter, *Small Farm Digest* (available on-line or in hardcopy).

Small Farm Program, U.S. Department of Agriculture, Cooperative State Research, Education, and Extension Service, Stop 2220, Washington DC 20250-2220. Phone: toll-free 1-800-583-3071. Internet: smallfarm@reeusda.gov; http://www.reeusda.gov/smallfarm/

NewCROP, The New Crop Resource Online Program

The rich information at this site is available by searching on crop names; searching on state and county names for currently harvested crops and related USDA Census of Agriculture statistics; by accessing and downloading full-text publications; finding related experts and conferences; and through an e-mail discussion group. Full-text publications include proceedings of three National New Crops Symposia: *Advances in New Crops* (1990), *New Crops* (1993), and *Progress in New Crops* (1996); *Fruits of Warm Climates* (1987), by Julia F. Morton; the *Handbook of Energy Crops* (1983), by James A. Duke; *The Alternative Field Crops Manual* (1992), University of Minnesota; *The Herb Hunters Guide to American Medicinal Plants of Commercial Importance* (USDA Misc. Pub. # 77. 1930), by A.F. Sievers; and selected chapters from *Neglected Crops: 1492 from a Different Perspective* (1994), by J.E. Hernándo Bermejo and J. León (eds.).

NewCROP, The New Crop Resource Online Program, Center for New Crops and Plant Products, Purdue University, 1165 Horticulture Building, West Lafayette IN 47907-1165. Fax:: 765-494-0391. Internet: http://www.hort.purdue.edu/newcrop/default.html

Crops Information Page

This site presents many helpful on-line publications, many of interest to growers beyond Ontario, arranged by topic. Of special interest is a database called *Online Newsletters for Growers*, a directory of electronic publications from all over the U.S. and Canada, with descriptions and links to the newsletters themselves. Titles include *Ohio State University Extension Vegetable Crops-The VegNet* and *South Carolina Pumpkin News*.

Crops Information Page, Ontario Ministry of Agriculture, Food and Rural Affairs. Internet: http://www.gov.on.ca/OMAFRA/english/crops/index.html

Plants for a Future: Resource and Information Centre for Edible and Otherwise Useful Plants

"Plants For A Future is a resource centre for rare and unusual plants, particularly those which have edible, medicinal or other uses." Located in the UK, its services include an advisory service, plant sales, book publishing, and, of special interest, an on-line database, which currently consists of nearly 7,000 species of plants. The database is searchable by scientific name, common name or family; edible, medicinal or other use; or search for plants native to a particular area or a particular habitat.

Plants for a Future, Resource and Information Centre for Edible and Otherwise Useful Plants. Internet: http://www.scs.leeds.ac.uk/pfaf/

Sustainable Farming Connection

Founded by former staff of the Rodale magazine, *New Farm*, this site offers a wide range of information about publications, links, discussion groups, organizations, and more, arranged by topic, and searchable.

Sustainable Farming Connection, Committee for Sustainable Farm Publishing. Internet: http://www.ibiblio.org/farming-connection/

Growing for Market

A monthly magazine, *Growing for Market* focuses on "news and ideas for market gardeners." Subjects include specialty produce, dried and cut flowers, and herbs; organic methods are emphasized. Feature articles are supplemented with resource information, commercial advertising, and an annual buyers guide to sources and suppliers.

Growing for Market, Fairplain Publications, P.O. Box 3747, Lawrence KS 66046. Phone: toll free 800-307-8949 or 785-748-0605; fax 785-748-0609. Internet: growing4market@earthlink.net; http://www.growingformarket.com/index.ace

Small Farm Today

"The original how-to magazine of alternative and traditional crops, livestock, and direct marketing;" published bi-monthly. Publisher/editor/farmer Ronald E. Macher also has written a book, *Making Your Small Farm Profitable*, aimed specifically at "beginning farmers or those seeking profitable alternatives." ($21.95 plus tax and shipping). Ordering information for the book, and for back issues of the magazine is available on the website.

Small Farm Today, Missouri Farm Publishing Inc., 3903 W. Ridge Trail Rd., Clark MO 65243. Phone: 800-633-2535 or 573-687-3525; fax 573-687-3148. Internet: smallfarm@socket.net; http://www.smallfarmtoday.com/

Aquaculture Network Information Center (AquaNIC)

AquaNIC strives to be "the gateway to the world's electronic resources for aquaculture information and education." It currently provides access to newsletters, discussion groups, publications, internet sites, and job listings, among other things. There is also a searchable database of information on specific fish species and aquaculture systems.

Aquaculture Network Information Center (AquaNIC), Mississippi-Alabama Sea Grant Consortium, Dauphin Island Sea Laboratory. Internet: http://www.aquanic.org/

American Livestock Breeds Conservancy

ALBC works to conserve rare breeds and genetic diversity in livestock, and operates as a clearinghouse for information on livestock and genetic diversity. They offer publications for sale; their *Other Sites of Interest* (http://www.albc-usa.org/links.htm) links page is especially comprehensive.

American Livestock Breeds Conservancy, P.O. Box 477, Pittsboro NC 27312. Phones: 919-542-5704; fax 919-545-0022. Internet: albc@albc-usa.org; http://www.albc-usa.org/index.htm

The Alternative Farming Systems Information Center, National Agricultural Library

The Alternative Farming Systems Information Center (AFSIC) is one of several centers at the National Agricultural Library (NAL) that provide in-depth coverage of specific subject areas relating to agriculture. AFSIC focuses on information related to sustainable and alternative agricultural systems, including new, industrial, and alternative crops. Established at NAL in 1985, the center is also supported by USDA's Sustainable Agriculture Research and Education (SARE) program and by the Cooperative Extension Service, University of Maryland.

A current list of AFSIC information products and copies of this and other publications are available electronically on the AFSIC Website or on computer diskette. They are also available in hard copy.

For further information:

Alternative Farming Systems Information Center
National Agricultural Library, ARS, USDA
10301 Baltimore Ave., Room 304
Beltsville MD 20705-2351
phone: 301-504-6559, fax: 301-504-6409
e-mail: afsic@nal.usda.gov

AFSIC's Website: http://www.nal.usda.gov/afsic

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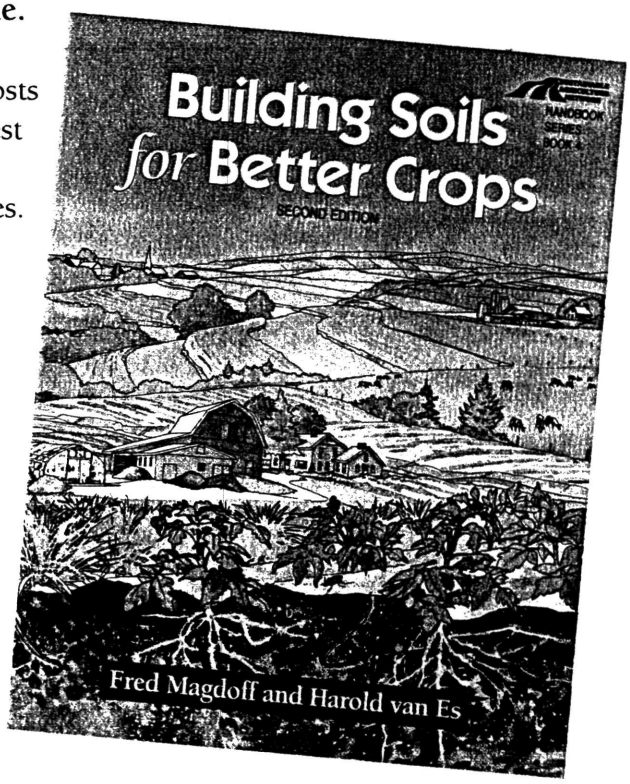

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Small Farm Center

News of Interest to Small Farmers

Glickman Announces New Funding and Technical Assistance For Small Farmers

Washington, Jan. 19, 2000--Agriculture Secretary Dan Glickman announced two new steps to help small farmers and ranchers find better ways to market and export their products. □□

Glickman announced that USDA will provide $500,000 to help small farmers develop new ways to market their products, including direct selling to restaurants and institutions, agri-tourism and pick-your-own farms. Under USDA's Sustainable Agriculture Research and Education Program, the University of Vermont, University of Nebraska, University of Georgia, and Utah State University will select and assist specific new marketing projects that will benefit smaller farms.

In addition, USDA will offer technical assistance to help small farmers and ranchers form cooperatives to export crops and livestock to international markets. Loans are available to help finance the development of value-added processing at existing cooperatives.

Glickman made the announcements at a meeting of USDA's Advisory Committee on Small Farms. The 19-member committee is composed of small-scale farmers, ranchers, and woodlot owners who advise Glickman on policies and programs to assist America's smaller farms.

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Farmer Direct Marketing Newsletter - April/May 1999

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Community Food Security Coalition Workshops

New in Print/Audio - Publications/Tapes about Direct Marketing:

Getting Food on the Table: An Action Guide to Local Food Policy (Community Food Security Coalition)

From the Field to the Table: Suggested Food Handling Guidelines for Open-Air Farmers' Markets and Fairs (ECOnomics Institute)

Audio Tapes from "Cultivating the Harvest: Inland Northwest Small Acreage Farming Conference

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USDA Activities:

The USDA Sponsored Santa Fe Farmers Market Conference

The U.S. Department of Agriculture (USDA) joined the Friends of the Santa Fe Farmers Market in hosting a workshop Feb.

4-6 in Santa Fe, NM, to address the issue of attracting minority farmers and customers to farmers and public markets.

The 3-day roundtable discussion brought together farmers market managers and others involved in direct marketing from the South and Southwest. These regions have large Hispanic populations, which should be encouraged to participate more fully as consumers and vendors in farmers markets. The panel discussed ways to maintain, enhance, and further develop satellite and permanent farmers markets and to strengthen and sustain small farm agriculture throughout these regions. It also dealt with topics that contribute to greater participation by all minority farmers and consumers.

"The challenge is to continue to make farmers markets equally accessible to everyone," said Enrique E. Figueroa, Administrator of USDA's Agricultural Marketing Service (AMS). "Access to healthful fresh fruit and vegetables for the underserved consumer is a critical objective of AMS' work in farmer direct marketing."

The proceedings of this roundtable will be made available on the web in the coming months.

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Agricultural Marketing Outreach Workshop for Limited Resource Farmers - Information and Remarks by Under Secretary Michael V. Dunn

The U.S. Department of Agriculture sponsored a marketing outreach workshop for limited resource farmers March 2426 at the Agricenter International in Memphis, TN. The workshop was a joint effort with Southern University and A&M College, Baton Rouge, LA.

"These are challenging times, particularly for small farmers," said Secretary of Agriculture Dan Glickman. "The goal of this event is to help limited resource farmers maximize their economic potential by helping them develop effective marketing plans."

One hundred fifty-four limited resource farmers from Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee attended the event. About 500 additional participants attended the various workshops in which several USDA agencies participated. Product quality demonstrations on beef cattle, fruits and vegetables, goats, hogs, and poultry were conducted. Additionally, there were field tests for soil analysis, tillage, irrigation, and trees/agroforestry.

"AMS sees this workshop as a multifaceted outreach effort that will help small farmers learn how to improve the marketability of their products and enhance their knowledge of the techniques and resources available to themthrough State and USDA agencies," said AMS Administrator Enrique E. Figueroa.

Remarks by Under Secretary Michael V. Dunn (As prepared for delivery)
Marketing Outreach Workshop
Memphis, Tennessee
March 24, 1999

"Introduction

> Dr. Figueroa spoke to you earlier about the Small Farms Commission, and I'd like to take a few minutes to talk about a few of the actions USDA has taken to carry out the recommendations made by the Commission.
>
> The first speaker to address the Small Farms Commission, Dr. Rick Welsh, talked about the emergence of two "food streams" shaping the structure of today's agriculture.
>
> One of these streams is contract production, and the other is direct marketing. Now USDA has always been interested in, and done work on, farmer direct marketing, but as a result of the Small Farms Commission Report, we have stepped up our efforts considerably.
>
> The framework for these efforts is the USDA Farmer Direct Marketing Action Plan, and that's one of the things I'm going to talk to you about this afternoon. I'll also tell you about some other USDA programs that focus on the small farmer and direct marketing.

USDA Farmer Direct Marketing Action Plan

The USDA Farmer Direct Marketing Action Plan was developed last July by the Agricultural Marketing Service. The Plan is aimed at helping small farms, that is farms with less than $250,000 in annual gross receipts, or about 94 percent of all farmers in the United States.

The goal of this Plan is to identify and promote the development of marketing opportunities for small farmers by conducting and supporting research and providing information on farmer direct marketing activities in the public and private sectors.

In the next 2 and a half years, USDA will create new direct marketing networks and a onestop information clearinghouse. We will develop training and information programs for farmers market managers and small farmers. And we will conduct feasibility studies to expand the development of farmers market facilities. That's what we **will** do. Now let me tell you about some of the things we've already done.

What We've Already Accomplished

For those of you who have access to the Internet, AMS recently launched its *Direct Marketing Web Page*. It's aimed at small and medium-sized producers and others interested in learning more about farmer direct marketing.

The site features a monthly newsletter, publications, a direct marketing bibliography, and a schedule of national and regional conferences and workshops. It covers a variety of topics and also links to Federal, State, university and other websites relating to direct marketing.

The updated *National Directory of Farmers Markets* was published in December 1998. The Directory lists 2,746 farmers markets that operate throughout the United States, up from 2,410 in 1996. It gives a comprehensive summary of market locations, contacts, telephone and fax numbers, and days and hours of operation. It also makes note of which markets participate in the Special Supplemental Nutrition Program for Women, Infants, and Children, or WIC, and food gleaning or food recovery programs.

The *Farmer Direct Marketing Bibliography* was developed to facilitate access to resources by producers, vendors, market managers, consumers, and others interested in the farmer direct marketing of agricultural products. It includes works from private industry, academia, and State and Federal Governments, dating back to 1980. The Bibliography is divided into 24 functional categories and can also be accessed on the Internet.

We've also set up a *Farmers Market Hotline,* an 800 number that allows the caller to find out all about USDA-sponsored farmers markets. Farmers, vendors, customers, and market cooperators can dial **1-800-384-8704** to get recorded information on dates, times, directions, and other information associated with participating in the USDA-sponsored markets on Federal property.

Last July, USDA held a *Farmers Market Symposium* in Washington to identify farmer direct marketing issues and opportunities for small farmers. Operators of farmers and public markets, State officials, academics, and others came together to share their thoughts on the direction that USDA should take in supporting marketing facilities.

This symposium was part of a larger USDA initiative which includes five Farmer Direct Marketing Focus Group sessions. The first session was held in Sturbridge, MA, in December and included direct marketing representatives from 10 Northeast and Mid-Atlantic States. The second and third sessions were conducted in conjunction with the annual convention of the North American Farmers Direct Marketing Association in January, in Grand Rapids, MI. The last two focus groups are meeting here this week.

Pilot Project--Opportunities for Limited Resource Producers to Supply a School Lunch Program

USDA is also involved in a direct marketing project in Florida--and this one has a twist. We were able to use our knowledge of commodity procurement and combine it with what we know about direct marketing. It's been so successful, that we hope it will serve as a model to help other small farmers.

AMS, USDA's Natural Resources Conservation Service, Florida A&M University, and the West Florida Resource Conservation and Development Council joined forces to help limited resource produce growers in the Florida Panhandle directly supply a school lunch program. The pilot project is a little better than midway through its second year of operation.

The New North Florida Cooperative, a group of small farm operators, concentrated on the Gadsden and Jackson County school districts as their market. Their goal was to provide leafy green vegetables on a schedule that would meet the menu plans of the school foodservice directors. By the end of the last school year, the Coop produced, processed, packaged, and delivered an average of 1,500 pounds of turnip greens, collard greens, and kale every 2 weeks, and are keeping up that pace this year. They also produced strawberries and blackberries that were sold to the schools for desserts and as additions to the School Breakfast Program.

They are dependable, reliable, and they are building a solid reputation for quality. This project is an exciting example of teamwork and commitment of which the New North Florida Cooperative and the Gadsden and Jackson County School Districts can be very proud, and USDA is very proud to have played a role in this project's success.

Federal-State Marketing Improvement Program

Another USDA program that helps small farmers has been around for a long, long time. Through the *Federal-State Marketing Improvement Program (FSMIP)*, AMS provides matching funds to State departments of agriculture or other State agencies for a wide range of research and service projects aimed at improving the marketing and distribution of agricultural products.

Identifying new or higher valued market outlets for farm products, finding ways to get products to consumers more efficiently, and developing new or more effective marketing service programs at the State and local level are common themes among FSMIP projects.

With Federal funds of 1.2 million dollars available for allocation to the States for each of the past 4 years, FSMIP typically has provided support to 25-30 projects per year.

National Organic Program

And the last program I'm going to talk about this afternoon is our National Organic Program. Organic farming has traditionally been the domain of the small farmer, with many organic farmers selling their products directly to the public.

In recent years, the organic industry has grown at a steady annual rate of between 22 and 25 percent. A recent study shows growth in nearly every product category. Although one of the major market barriers is limited supply, it is predicted that the market will reach 6.6 billion dollars by the year 2000.

We are working hard to make USDA's National Organic Program a reality. When we published proposed organic standards in December 1997, we received more than 275,000 comments. This is the largest public response USDA has ever received for a proposed rule.

When we issue the final rule, and the program is implemented, we anticipate that an even wider variety of organically produced products will be available for domestic and international consumption through a greater number of markets.

One of the 8 policy goals described in the Small Farms Commission Report says USDA will

"Emphasize Sustainable Agriculture as a Profitable, Ecological, and Socially Sound Strategy for Small Farms." To reach that goal, several USDA agencies will work together to target consumers to explain what organic food is and how it's produced. We will also target farmers--those who currently grow organic crops and those who are potentially interested. In addition to explaining the new standards, we will give farmers access to information on how to make the transition to organic farming.

Conclusion

I hope I've made it clear today that USDA is committed to developing and implementing programs that recognize the importance of small farms, and that will help small farmers build on their strengths and equip them to compete successfully.

The projects and programs I've talked about today--the Farmer Direct Marketing Action Plan, the pilot project on partnering with local school districts, FSMIP, and the National Organic Program--are only the beginning. USDA will continue to strive to help small farmers identify and take advantage of marketing opportunities and strategies that will ensure their survival and help them grow."

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Update on the Burlington, VT Public Market Feasibility Study

In the fall of 1996, a Public Market Steering Committee was formed by the Women's Agricultural Network (University of Vermont), Vermont Department of Agriculture, the City of Burlington, and the Burlington Community Land Trust. In August 1997, the committee contracted with the Project for Public Spaces (PPS) to collect data and perform some elements of a feasibility study. PPS developed a report which suggested a 20,000-square-foot facility could succeed in Burlington. In the fall of 1998, a joint effort by Wholesale and Alternative Markets (W&AM) and the Public Market Steering Committee resulted in a cooperative agreement between AMS and the Burlington Community Land Trust.

As part of an ongoing project, W&AM staff met with the Burlington Public Market Steering Committee on March 11 to review the progress made on the feasibility study concerning the construction of an indoor, yearround public market in Burlington. A W&AM-sponsored survey of Vermont producers and a series of follow-up focus groups were completed last month. The survey was designed to measure the willingness and ability of Vermont producers to participate in the market. As a result of the producer survey and focus groups, the Steering Committee voted to go forward with the Public Market project and decided to seek capital funding during the current State legislative session.

The possibility of a Burlington Public Market, which is envisioned as an outlet for Vermont-produced food and craft items, has excited local farmers, State and local officials, and State legislators. The downtown Burlington Area is relatively underserved by grocery and produce outlets, while having a relatively large number of affluent residents, workers, and visitors.

There are a number of unique and high-quality producers of farm and craft items in the Burlington area that could sell through a public market. The survey showed that a significant number of them have expressed interest in being involved with the market, depending on its location and cost. Site feasibility studies (Phase II) are needed in order to develop costs, location, and preliminary design drawings. Prospective tenants in particular need this information before they can commit to the project. Questions were received from producers about the size, location, and cost of the market that could not be answered with the present level of information.

After examining the survey results, W&AM is cautiously optimistic about the success of the market and agrees with the steering committee that the next logical step will be to examine the feasibility of all potential sites in the Burlington area.

For more information about the Burlington, VT, Public Market Feasibility Study, Contact Arthur Burns (USDA, Wholesale and Alternative Markets) at (202) 720-8317 or arthur.burns@usda.gov

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Report on USDA Farmer Direct Marketing Focus Groups Held in Memphis, TN

Two farmer direct marketing focus groups were held with producers and facilitators in Memphis, TN, on March 2425. These sessions were scheduled to coincide with the Agricultural Marketing Outreach Workshop, cosponsored by USDA and Southern University, which convened at the Memphis Agricenter International on March 2426. Working in conjunction with Cornell University, the focus groups were a continuation of the process of identifying direct marketing issues and opportunities for small farmers as outlined in AMS' Farmer Direct Marketing Action Plan. Input from regional direct marketing facilitators, service providers, and growers is important in understanding relevant geographical concerns associated with direct marketing. Their input will also assist AMS in framing a more comprehensive direct marketing program in USDA.

The March 24 session was composed of producers, many of whom were actively engaged in direct farm sales to customers. Thirteen producer/marketers from six southeastern States participated in this initial session. Facilitators, or service providers, for direct marketing programs were the principal participants in the second session on March 25. Ten facilitators from regional community-based organizations, cooperative extension, and State Departments of Agriculture were represented at this session.

Soliciting public input through focus groups is one of several objectives in the Farmer Direct Marketing Action Plan, which outlines a comprehensive strategy for greater agency and mission area involvement in farmer direct marketing. Conducting focus meetings with industry leaders and organizations dedicated to the support of small farmers will provide recommendations for future program activities and begin to build a network of support and resources that will promote a broader direct marketing program within USDA. The focus groups include producers and representatives from organizations that facilitate State and regional direct marketing programs around the country.

The Memphis direct marketing focus groups complete the five sessions scheduled for this program initiative. The initial session was held in Sturbridge, MA, and included direct marketing facilitators from State departments of agriculture, cooperative extension, farmers markets, and community-based nongovernmental organizations from the Northeast and Mid-Atlantic regions. Two sessions were held in Grand Rapids, MI, to coincide with the North American Farmers Direct Marketing Association's annual convention on January 20-23. One session was held with Midwest growers; a second included facilitators of direct marketing organizations from throughout the U.S. The Memphis sessions were designed to capture input from the Southeast region, an area where many small-scale producers are initiating new crops and alternative marketing practices to maintain farm profitability.

An important criterion for USDA in organizing these focus groups was strategically convening sessions at different locations around the country to gain maximum input from participants based on their regional problems and perceptions of farmer direct marketing. Convening focus groups in the Southeast offered many opportunities, particularly within the producer/marketers group, since this would be the first time for the team to identify and invite a significant number of minority farmers to participate. By scheduling a producer/marketer session to coincide with Agricultural Marketing Outreach Workshop, cosponsored by USDA and Southern University, the team was successful in attracting a diverse group of producers from six States in the southern region. The marketing workshops targeted small and limited-resource producers who offered a variety of educational and technical information beneficial in sustaining small family farms.

A major problem expressed by the producers group was accessibility and availability of technical assistance and grants to support their farming operations. They also expressed their need for additional support from cooperative extension, State Departments of Agriculture, and others in developing business plans and marketing strategies. Vague and time-consuming regulations were also cited as problems for these producers; however their level of frustration with this issue was substantially less than expressed by a similar group in Grand Rapids, MI. These differences may be explained based on their current levels of involvement in direct marketing enterprises (The Grand Rapids group generally operated larger direct marketing enterprises.) when compared to the marketers in Memphis. When discussing solutions and areas for improvement, the prevailing response among producers in the region was that more marketing information and training, addressing topics such as value-added marketing, market identification, cooperative development, best practices, and locations of experienced personnel to assist with technical problems, are essential.

A major concern among direct marketing facilitators in their work with producers is the constant struggle to convince farmers to develop a comprehensive marketing strategy for the farm operation. To effectively promote marketing to farmers, individuals who have responsibility for on-farm technical and educational programs will need additional training materials on how to market, merchandise, and promote fresh products, as well as data on facility requirements and specifications and opportunities for marketing niche products. Limited resources and staffing were cited as obstacles keeping many in cooperative extension from aggressively promoting direct marketing initiatives with small producers. As well, many of these professionals may benefit from retraining as they move beyond traditional production farming programs. There is a critical need for direct marketing concepts to be incorporated in all aspects of agriculture--teaching, research, extension, and policy. Such a strategy would require additional consumer education initiatives that emphasize the attributes of Americas small

farmers and the quality of products they produce.

Each focus group session generated a substantial volume of data with many suggestions and innovative ideas for USDA to consider in expanding its direct marketing programs. A final report is being drafted that will provide extensive background and details on this project and will suggest strategies USDA can pursue in promoting direct marketing for the small farmers. When the final report is published, it will be made available on the Farmer Direct Marketing Website.

For more information, please contact: Errol Bragg, Agricultural Marketing Specialist, Wholesale and Alternative Markets; phone: (202) 720-8317, fax: (202) 690-0031.

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Features:

1997 Census of Agriculture and Direct Marketing

The 1997 USDA Agricultural Census included direct marketing for the second time. Direct marketing in this case is defined as "Agricultural products sold directly to individuals for human consumption." Using these data, it is possible to discuss changes in farmer direct marketing from 1992 to 1997. The data collected track the number of farms involved in direct marketing, the value of the products, and the average sold per farm. The table below illustrates the data broken down by States. Negative growth rates are highlighted in red.

Direct Sales	Farms			$1,000			Average per fa	
	1997	1992	Change	1997	1992	Change	1997	19
United States	93140	86432	7.8%	550947	404056	36.4%	5915	46

Alabama	1373	1355	1.3%	5401	5227	3.3%	3934	38
Alaska	102	76	34.2%	500	216	131.5%	4900	28
Arizona	431	513	-16.0%	3288	2956	11.2%	7628	57
Arkansas	1084	1017	6.6%	5107	2794	82.8%	4711	27
California	5901	5229	12.9%	73179	35967	103.5%	12401	68
Colorado	1752	1523	15.0%	6611	7461	-11.4%	3773	48
Connecticut	774	666	16.2%	10980	6348	73.0%	14186	95
Delaware	154	144	6.9%	1864	1906	-2.2%	12102	132
Florida	1954	1863	4.9%	12547	20725	-39.5%	6421	111
Georgia	1471	1516	-3.0%	7294	7274	0.3%	4959	47
Hawaii	525	435	20.7%	4586	2469	85.7%	8735	56
Idaho	1205	1120	7.6%	3047	2107	44.6%	2529	18
Illinois	2204	2338	-5.7%	12307	10586	16.3%	5584	45
Indiana	2767	2820	-1.9%	12953	10893	18.9%	4681	38
Iowa	2174	2235	-2.7%	7475	5382	38.9%	3438	24
Kansas	1492	1432	4.2%	3663	3324	10.2%	2455	23
Kentucky	1748	1785	-2.1%	4761	4176	14.0%	2723	23
Louisiana	888	903	-1.7%	3033	2392	26.8%	3415	26
Maine	1177	1006	17.0%	8314	5521	50.6%	7064	54
Maryland	1133	1268	-10.6%	8667	7424	16.7%	7650	58
Massachusetts	1226	1080	13.5%	19825	14982	32.3%	16170	138
Michigan	4339	4019	8.0%	28720	21093	36.2%	6619	52
Minnesota	3145	2771	13.5%	14198	9434	50.5%	4515	34
Mississippi	787	907	-13.2%	2441	2530	-3.5%	3101	27
Missouri	2943	2655	10.8%	8774	7346	19.4%	2981	27
Montana	910	774	17.6%	1942	2179	-10.9%	2134	28
Nebraska	966	1000	-3.4%	2519	2169	16.1%	2607	21
Nevada	149	184	-19.0%	668	450	48.4%	4485	24
New Hampshire	690	511	35.0%	8653	4174	107.3%	12541	81
New Jersey	1636	1508	8.5%	17993	11159	61.2%	10998	74
New Mexico	873	919	-5.0%	3819	3963	-3.6%	4374	43
New York	4038	3453	16.9%	40088	32321	24.0%	9928	93
North Carolina	2176	2134	2.0%	11628	7113	63.5%	5344	33
North Dakota	470	500	-6.0%	1453	890	63.3%	3091	17
Ohio	4877	4698	3.8%	28221	21580	30.8%	5787	45
Oklahoma	1898	1504	26.2%	4009	3643	10.0%	2112	24
Oregon	4594	4263	7.8%	14287	10323	38.4%	3110	24
Pennsylvania	5508	4862	13.3%	48745	35806	36.1%	8850	73
Rhode Island	135	127	6.3%	2323	1578	47.2%	17210	124
South Carolina	966	997	-3.1%	6080	4556	33.5%	6294	45

South Dakota	579	531	9.0%	1720	1092	57.5%	2971	20
Tennessee	2294	2035	12.7%	7643	6118	24.9%	3332	30
Texas	5526	4972	11.1%	17379	12188	42.6%	3145	24
Utah	1036	1010	2.6%	6269	3666	71.0%	6051	36
Vermont	983	673	46.1%	6302	3934	60.2%	6411	58
Virginia	1713	1789	-4.2%	10594	7036	50.6%	6184	39
Washington	3055	2933	4.2%	13700	10863	26.1%	4485	37
West Virginia	1100	869	26.6%	2663	2082	27.9%	2421	23
Wisconsin	3843	3159	21.7%	21866	13889	57.4%	5690	43
Wyoming	376	351	7.1%	849	750	13.2%	2257	21

States with the **greatest increases** in the **number of farms** direct marketing products (percent increase from 1992-1997 in brackets):

1. Vermont (46.1%)
2. New Hampshire (35.0%)
3. Alaska (34.2%)
4. West Virginia (26.6%)
5. Oklahoma (26.2%)
6. Wisconsin (21.7%)
7. Hawaii (20.7%)
8. Montana (17.6%)
9. Maine (17.0%)
10. New York (16.9%)

States with the **greatest losses** in the **number of farms** direct marketing products (percent decrease from 1992-1997 in brackets):

1. Nevada (-19.0%)
2. Arizona (-16.0%)
3. Mississippi (-13.2%)
4. Maryland (-10.6%)
5. North Dakota (-6.0%)
6. Illinois (-5.7%)
7. New Mexico (-5.0%)
8. Virginia (-4.2%)
9. Nebraska (-3.4%)
10. South Carolina (-3.1%)

Other States with loses are: Georgia (-3.0%), Iowa (-2.7%), Kentucky (-2.1%), Indiana (-1.9%), and Louisiana (-1.7%).

States with the **greatest increases** in the **value of direct marketing products** (percent increase from 1992-1997 in brackets):

1. Alaska (131.5%)
2. New Hampshire (107.3%)
3. California (103.5%)
4. Hawaii (85.7%)
5. Arkansas (82.8%)

6. Connecticut (73.0%)
7. Utah (71.0%)
8. North Carolina (63.5%)
9. North Dakota (63.3%)
10. New Jersey (61.2%)

States with the **greatest increases** in the **average value of direct marketing products per farm** (percent increase from 1992-1997 in brackets):

1. Nevada (83.4%)
2. California (80.3%)
3. North Dakota (73.5%)
4. Alaska (72.7%)
5. Arkansas (71.4%)
6. Utah (66.7%)
7. North Carolina (60.3%)
8. Virginia (57.2%)
9. Hawaii (53.9%)
10. New Hampshire (53.5%)

States with the **greatest number** of **farms engaged in direct marketing** (number in brackets):

1. California (5,901)
2. Texas (5,526)
3. Pennsylvania (5,508)
4. Ohio (4,038)
5. Oregon (4,594)
6. Michigan (4,339)
7. New York (4,038)
8. Wisconsin (3,843)
9. Minnesota (3,145)
10. Washington (3,055)

States with the **greatest value** of **direct market sales** (number in brackets - in $1,000s):

1. California (73,179)
2. Pennsylvania (48,745)
3. New York (40,088)
4. Michigan (28,720)
5. Ohio (28,221)
6. Wisconsin (21,866)
7. Massachusetts (19,825)
8. New Jersey (17,993)
9. Texas (17,379)
10. Oregon (14,287)

States with the **greatest value** of **average direct market sales per farm in dollars** (number in brackets):

1. Rhode Island (17,210)
2. Massachusetts (16,170)
3. Connecticut (14,186)
4. New Hampshire (12,541)
5. California (12,401)
6. Delaware (12,102)
7. New Jersey (10,998)
8. New York (9,928)
9. Pennsylvania (8,850)

10. Hawaii (8,735)

In coming months, more direct marketing data from the National Agricultural Statistics Service 1997 Census of Agriculture will be added to the Farmer Direct Marketing Website under "Direct Marketing Resources by State."

A recent article published in "Rural Development Perspectives" analyzes data from the 1992 Census of Agriculture. The article, "Direct Farm Marketing as a Rural Development Tool" by Fred Gale of the Economic Research Service, addresses the impact of location on income earned from direct marketing. (Abstract: "Many farmers, government officials, and rural advocates are enthusiastic about the prospects of direct farm marketing for bolstering farm income and promoting rural development. Direct marketing plays a role in rural development by encouraging a climate of entrepreneurship and innovation, attracting agricultural tourists, and promoting alternative forms of agriculture. However, an analysis of 1992 Census of Agriculture data indicates that the income from direct selling is relatively small and limited to communities near urban areas. Communities in remote locations need to make a concerted effort to benefit from direct marketing.")

Analysis of the direct marketing data from the 1992 Census of Agriculture can be viewed at:
http://www.econ.ag.gov/epubs/pdf/rdp/rdp0297/rdp0297d.pdf (In PDF format)

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Announcements:

"Law and the New Agriculture: Direct Marketing and Local Food Systems" Neil Hamilton's 4-day course to be offered this summer at Drake University

The course will consider legal issues associated with new developments in the U.S. food and agricultural system relating to local production and marketing of quality food. It will focus on the legal dimensions of a variety of production, marketing, and processing developments including: a) organic food production, including the Federal law and new organic standards; b) the operation of community supported farms, including a discussion of forms of organization and financing; c) farmers markets, public market operations and roadside stands; d) local processing and marketing of fresh dairy, meat, and poultry, including State rules on meat processing and marketing; e) urban gardening programs, including topics such as land availability of Federal funding for food systems movement, including availability of Federal funding for food system projects, and g) programs to increase opportunities for new farm operations, including beginning farmer loans, landlink matching programs, and linked deposit loans to generate alternative funding.

Neil Hamilton is the director of the Agricultural Law Institute at Drake and an Ellis and Nelle Levitt Distinguished Professor of Law. He is the author of numerous books and articles including A Farmer's Legal Guide to Production Contracts (Farm Journal 1995) and is currently working on books: A Legal Guide for Direct Marketers and Feeding America's Future. He is the past-president of the American Agricultural Law Association (AALA) and the author of nationally award winning book What Farmers Need to Know about Environmental Law (1990). He is also the author of A Livestock Producer's Guide to Nuisance, Land Use Control and Environmental Law (1992) and the Iowa Crop Producers Environmental Law Guide (1992 and 1994). He has a B.S. from Iowa State University, 1976 with honor and distinction, and a J.D. from the University of Iowa, 1979 Order of the Coif. He has conducted seminars throughout the U.S. and in sixteen foreign countries and has chaired numerous agricultural law committees. He presently serves on the board of directors and as a vicepresident of the World Union of Agricultural Law Professors, on the Advisors Board of the Leopold Center for Sustainable Agriculture and on the boards of directors for the Iowa Natural Heritage Foundation, the National Gardening Association, the Seed Savers Exchange, the Food Bank of Iowa, and the Wallace House Foundation.

The course will be offered at the Agricultural Law Center, Drake University in Des Moines, IA. Tuition for the course is $565. The course is available for either 1 hour of academic credit or 13 hours of C.L.E. credit. The course will be offered July 12-15. For more information, write to the Summer Agricultural Law Institute, Drake University Law School, Des Moines, IA 50311 or call (515) 271-2947 or 271-2065.

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Community Food Security Coalition Workshops:

The Community Food Security Coalition will be holding 1 1/2-day advanced community food security workshops in four locations this year.

May 10-11 Oakland, CA
June 17-18 New Orleans, LA
June 24-25 Cincinnati, OH
September 13-14, Hartford, CT

Registration fees will be $65 for CFSC members and $90 for nonmembers(includes a 1-year membership). Brochures with registration information will be mailed out in mid-April.

These workshops will utilize case studies from real community food projects to delve into in-depth discussions of key issues facing practitioners. The focus of the workshops will be on:

Community Economic Development: Building the Food System from the Ground Up. It seems like everywhere you go community food projects want to grow, make, or sell food products to generate jobs or businesses or to project income. But creating a successful business enterprise is a long row to hoe, with most attempts ending up in the compost heap. This section will take a careful look at both the successes and failures of food-related community economic development and why you should do it or not do it.

Empowerment and Citizen Participation: Where are the People? Community food security is very much about developing the capacity of your community and its people to meet their own needs and improve their own lives. And food is certainly a very powerful tool for citizen empowerment. This section will explore some of the strategies that food projects around the country have used to develop local self-reliance while building a competent and effective citizenry.

Community Food Planning: From Assessment to Evaluation. Knowing the problem you want to address, understanding what causes the problem, deciding on the best problem-solving strategy, and knowing how to evaluate your results are key elements to good community food work. This section will help you evaluate projects rationally with the hope that we will all be all little more effective.

For more information, please contact the Community Food Security Coalition office by email at asfisher@aol.com or call Andy Fisher at (310) 822-5410.

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New in Print - Publications about Direct Marketing

Getting Food on the Table: An Action Guide to Local Food Policy (Community Food Security Coalition)

"Getting Food on the Table: An Action Guide to Local Food Policy" is a new publication that provides community organizations, food advocates, and government staff with tools for developing innovative policy solutions. The Guide is intended to support local efforts to promote community food security by helping readers to understand the breadth of policies affecting their local food system, evaluate policy barriers and opportunities, develop innovative policy solutions, and identify useful resources. The publication is a joint project of the California Sustainable Agriculture Working Group(SAWG) and the Community Food Security Coalition (CFSC).

While cities regulate many basic needs, such as water, transportation, and housing, there have been very few comprehensive food system planning efforts at the city or county level; no municipality has a department of food. Nevertheless, all cities and counties have numerous policies and programs that affect food production, distribution, and consumption embedded in their various agencies. Examples include zoning restrictions that affect supermarket development, food purchasing regulations for local schools and other government institutions, and use of city-owned lands for community gardening. Understanding this patchwork of local policies can help community food security advocates be more effective, regardless of whether they seek to directly influence local policy or work on projects affected by those policies. "Getting Food on the Table" brings together a range of valuable information not available from any other single source: an inventory of relevant local government programs, case studies of local food policy work, organizing tips, and an extensive resource guide.

Chapter 1 provides a department-by-department inventory of city and county programs, policies, and functions that affect community food security. Each section includes specification suggestions, as well as examples of success stories. The chapter also includes information on Federal funding sources.

Chapter 2 features case studies of established food policy councils and other organizations that have successfully influenced local food policy. Each case study includes background information, accomplishments, challenges, and good practices.

Chapter 3 provides advice on the basics of food policy organizing, evaluates the pros and cons of various types of organizational structures, and gives tips on starting and maintaining a food policy council.

Finally, an annotated resource guide directs readers to a wide range of information on food policy research, organizing techniques, and specific food system issues. Appendixes include sample ordinances and Federal funding leads.

To order a copy of "Getting Food on the Table", send $12 to the Community Food Security Coalition at P.O. Box 209, Venice CA 90294. For more information, call CFSC at (310) 822-5410 or SAWG at (831) 457-2815.

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From the Field to the Table: Suggested Food Handling Guidelines for Open-Air Farmers' Markets and Fairs (Catherine Drake and Beverly Swango, ECOnomics Institute)

The food handling practices in "From the Field to the Table" have been incorporated into the Crescent City Farmers Market in New Orleans, LA. They "know that everyone (both vendors and customers) benefits from its clarity and thoroughness. It is a practical response to a recognizable shift in consumer concern about food quality and safety. In the past ten years, consumers have demonstrated an insatiable appetite for farmers' markets and the opportunity to reconnect to food sources-safe food sources. In an article about food safety in the September 1, 1997 issue of Newsweek, author Adam Rogers reflects many people's feelings when he wrote, 'when farmers sell their own food, the product doesn't pass through numerous hands and giant distribution centers that increase the risk of picking up pathogens.' Indeed, farmers' markets do generally provide fresher, superior produce. This document provides markets with the means to demonstrate how."

Sections in the document include "Product Categories and the Risk Assessment of Food-Borne Illness," "Minimum Production, Storage, and Transportation Standards by Product Category," "Crescent City Farmers Market On-Site Display and Facilities," "Minimum Facility Requirements for the Production of Baked, Pickled, or Canned Food To Be Sold Only at a Farmers' Market," and "Food Sanitation Guidelines."

Copies are $20 plus $2 for shipping and handling. To order copies or for more information contact the ECOnomics Institute, Loyola University New Orleans, 7214 St. Charles Ave., Campus Box 907, New Orleans, LA 701186195. Phone: (504) 861-5898, Fax: (504) 861-5833, E-mail: ecoinst@loyno.edu or visit http://www.loyno.edu/economics.institute

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Audio Tapes from "Cultivating the Harvest: Inland Northwest Small Acreage Farming Conference"

Audio tapes from "Cultivating the Harvest: Inland Northwest Small Acreage Farming Conference" are now available.

Of particular interest to direct marketers:

- Selling to Restaurants (Diane Green, Gene Fritz)
- What to Produce: Land Assessment and Enterprise Selection (Ken Hart, Vickie Parker-Clark)
- Growing and Marketing Medicinal Herbs (Tim Blakley)
- Value Added Processing and Marketing (Kim Murphy, Shawn Ellison, Harry Menser)
- Fresh Market Vegetables (Ellen Scriven)
- Community Supported Agriculture (Janie Burns, Jim Bauermeister)
- Apple Growing for Local Markets (Brian Finnigan)

- Marketing on the Web (Karl Ottenstein, Kate Painter)
- Alternative Crops (Carol Miles)

Tapes are $7.00 each plus shipping and tax (if applicable).

For a complete list of audio tapes from the conference or to place an order, contact: Audio Productions, Inc., 12127 7th Place SE, Lake Stevens, WA 98258, phone: 1-800-356-2834 or (425) 335-5223, fax: (425) 334-7866. **This company also has audio tapes from the National Farmer Direct Marketing Association Conference in Grand Rapids, MI.**

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Fred Gale

Direct Farm Marketing as a Rural Development Tool

Many farmers, government officials, and rural advocates are enthusiastic about the prospects of direct farm marketing for bolstering farm income and promoting rural development. Direct marketing plays a role in rural development by encouraging a climate of entrepreneurship and innovation, attracting agricultural tourists, and promoting alternative forms of agriculture. However, an analysis of 1992 Census of Agriculture data indicates that the income from direct selling is relatively small and limited to communities near urban areas. Communities in remote locations need to make a concerted effort to benefit from direct marketing.

In a highly urbanized society, direct farm marketing provides a link between urban consumers and rural food producers that can be valuable in developing sustainable communities. Farmers, extension workers, and government officials look to direct marketing as a means of identifying alternative income sources, preserving small farms, strengthening economic and social ties between farms and urban residents, and as an outlet for organic and specialty farm products. Direct sales to consumers can benefit small farms and rural communities in general by channeling a larger share of urban residents' spending on food and recreation back to the communities where food is grown. Direct purchases from farmers provide city residents with a source of inexpensive fresh produce and an opportunity to get in touch with their rural roots.

Growing Interest by Consumers and Producers

Direct selling was once a common marketing method in the United States, but declined in importance as the Nation urbanized and increased its consumption of processed foods. Today, most food moves from the farm gate to the consumer through a highly efficient food marketing system that takes advantage of scale economies and specialization to keep processing and distribution costs low. Most farmers are content to devote their limited time to what they know best—planting, growing, and harvesting food—and leave the processing and marketing to agribusinesses, but selling directly to consumers seems to be gaining popularity among farm producers.

Several reasons may account for this renewed interest in direct farm marketing. One is dissatisfaction with low farm-gate prices. The farm price is often only a fraction of retail food prices. Prices received for produce sold directly to consumers can be substantially higher than typical wholesale prices, yet still be below supermarket prices. Small farms also often turn to direct sales because they may be snubbed by wholesalers who deal only with large-volume producers. For larger farms, direct selling can be an important sideline operation or a means of selling products that do not meet the quality or size standards required by wholesalers.

The outward spread of suburbs and residential development of formerly rural farming communities has spurred direct marketing by reducing the physical distance between farms and consumers. As suburbs grow, residential and commercial development often results in the break-up of larger farms into smaller pieces, and more exurban commuters start up part-time hobby farms.

Increased interest in food safety, the environment, and alternative agriculture has also supported growth of direct

Fred Gale is an economist in the Rural Business & Development Policy Branch of the Food & Rural Economics Division, ERS.

sales. Organic produce and other specialty food products are frequently grown by small producers who favor direct marketing at premium prices. Consumers of these specialty products like to deal face-to-face with growers to ensure that products were grown chemical-free or with other desired techniques. Complementing that preference, ecological awareness spurs consumers' interest in agricultural tourism, farm-based recreational activities, and direct-selling arrangements that involve contact with farms and farmers.

Innovative Farm Entrepreneurs Use Diverse Direct Selling Methods

Farmers' markets are, of course, the oldest and most common type of direct selling. A 1993 directory of farmers' markets published by the USDA listed 1,755 operating markets. The total number of farmers' markets may actually be much larger, since this was not an exhaustive list and probably excluded many smaller markets. Marketing specialists at USDA and land-grant colleges believe that the number of farmers' markets is growing, although there are no historical statistics for comparison. Markets vary widely. Some are year-round, others are seasonal; some are held in permanent indoor facilities, others are held in parking lots.

Pick-your-own fruit and berry operations, cut-your-own Christmas trees, and roadside stands are also common forms of direct marketing. Many farms have expanded their roadside stands by offering crafts, baked goods, flowers, and related items. Other innovative farm entrepreneurs offer urban residents a recreational experience in a rural farm setting. An apple grower in Virginia introduced a "rent-a-tree" operation, where individuals can pay a set amount to rent a particular tree in the orchard. This entitles the renter to all the apples harvested from his or her tree during that season and to visit and picnic on the grounds. Some farms take advantage of the Halloween/harvest festival theme to offer haunted pumpkin patches and hayrides. A recent conference on farm direct marketing featured a day-long seminar on how to set up an onfarm haunted house. Ornamental gardens, restaurants, hunting, shooting and golf driving ranges, and other recreational services have also been offered by farmers exploring ways to bring consumer dollars directly to the farm.

A movement known as Community Supported Agriculture (CSA) has appeared as a new form of direct selling, spurred by interest in organic produce and ecological awareness. CSA usually involves a cooperative arrangement in which consumers pay nearby growers a fixed amount of money at the beginning of the growing season and over the course of the season receive a bag each week containing whatever produce is being harvested at that time. In some CSA arrangements, customers pick up their produce at the farm, while in others a central distribution point is established in town. CSA producers usually use organic growing methods, and participants generally value the freshness and organic nature of the produce and the direct contact with the people who grow their food. CSA helps growers with cash flow, since they are paid at the beginning of the season. Consumers shoulder more of the risk in CSA because they pay a fixed amount, regardless of the quantity and quality of the harvest. Although an advantage of CSA for producers, such an arrangement can cause consumers to shy away from CSA groups.

Rural Development Impacts

Direct selling can have positive economic and social impacts on rural and urban communities. The clearest impact is the direct flow of income from consumers to farms. By selling directly to consumers, farmers retain the value added to their products through various transportation and marketing activities that are usually performed by urban-based wholesale and retail establishments. A larger share of the consumer's retail food dollar returns to the rural communities where food is grown, but direct marketing activities are costly in time and labor.

Premium prices can be an additional economic benefit for some directly marketed products. Retail prices for organic or specialty food products sold directly to consumers are often higher than store prices for similar items. For example, in November 1994, Maryland farmers were selling fresh turkeys to customers for $1.25 per pound or more, while supermarket prices were 79 cents per pound for fresh turkeys and 59 cents for frozen.

By providing alternative marketing channels and higher returns per acre, direct marketing may also contribute to the rural economy by preserving small farms. A local economy characterized by numerous small farms is regarded by many as more desirable than one with a few large industrialized farms.

By adding a recreational component to food consumption, many direct-marketing enterprises draw urban people to farm communities, where they may spend additional dollars on restaurant meals, shopping, or other services. Such "agricultural tourism" may have a "multiplier" effect on local economies. A 1994 study (Leones and others) of spending at farm outlets and pick-your-own operations in an Arizona county found that groups visiting from outside the county spent an average of $18 in the local community in addition to the $40 they spent at farm outlets. Most visits are day-visits, but some involve overnight stays. The Arizona study found that day visitors spent an average of $54, including spending at farm outlets, while overnight visitors spent $130. Agricultural tourists spent $1 million per year, which led to additional

economic activity of $900,000 throughout the local economy. The study further found that direct farm marketing supported 41 jobs at farm outlets and an additional 27 jobs elsewhere in the county's economy.

Agricultural tourism is associated mainly with types of direct marketing that include an onfarm recreational component. Other direct marketing efforts require that farmers do most of the traveling. For example, farmers' markets and distribution points for CSA groups are often at urban and suburban locations. A survey of vendors at nine New York markets found that full-time growers traveled an average of 22 miles to the farmers' market, and part-time growers traveled an average of 12 miles. Obviously, the economic impact of direct marketing on the farm community is much lower when farmers, instead of consumers, do the traveling.

While most of the traveling to farmers' markets is done by vendors, consumers are also willing to travel a little farther to patronize farmers' markets than they will for traditional retail food shopping. The USDA's Agricultural Marketing Service estimates that a farmers' market draws consumers from within a 10-mile radius, compared with a 2- to 3-mile radius for a supermarket. Farmers' markets in many communities just outside the urban fringe are close enough to draw urban and suburban customers to their communities. More remote communities need to work harder to draw urban visitors to farmers' markets by establishing an identity associated with a locally grown product, lifestyle, or heritage (such as Amish and Mennonite) or a concentration of farms of fering products and services for sale.

Social issues are an important reason for the popularity of direct marketing. Supporters of direct marketing activities stress the importance of educating consumers about the source of their food supply. The social dimension, albeit of a different type, is also important to sellers. A survey of vendors at nine rural New York farmers' markets found that the most important reasons identified by the vendors for selling at a farmers' market were social: "We enjoy visiting with customers and other vendors," and "We enjoy doing it." These reasons were rated higher than "We want extra income," and "Our other income sources are limited." It is also likely that many of the small urban-fringe farms that participate in direct selling are part-time farms that depend on off-farm income sources. For the operators of these farms, the motivation to farm is often noneconomic.

How Big Are Direct Sales and Who's Selling?

While direct marketing seems to be enjoying wide popularity among farmers, extension workers, and government officials, no one knows just how big the industry has grown or what types of farms participate in these activities. Since direct marketing is hard to define and includes diverse activities, it is hard to measure, so we have little statistical information. USDA completed some studies in selected States during the 1970's, but the only recent nationwide data available are from the 1992 Census of Agriculture, which asked farms to report the dollar amount of food products sold directly to consumers. These data probably understate dollar amounts obtained through direct marketing because they include only sales of food products grown on the farm and exclude products bought from others and resold, processed foods, services, and nonedible products. Despite the limitations of these data, however, they can still give us an idea of the magnitude of direct sales income.

Nearly 1 in 20 U.S. farms (4.5 per cent) reported direct sales of food products to consumers totaling $404 million in 1992. Direct sales per farm for those reporting direct sales averaged $4,675. Direct sales are concentrated in regions where vegetable and fruit production is common and where farms are near large populations, primarily in the Northeastern States from Maryland to Maine, Florida, the Great Lakes region, the West Coast, and Hawaii (fig. 1). Direct sales are low in the Great Plains, most of the Mountain region, the western part of the Corn Belt, and most of the South.

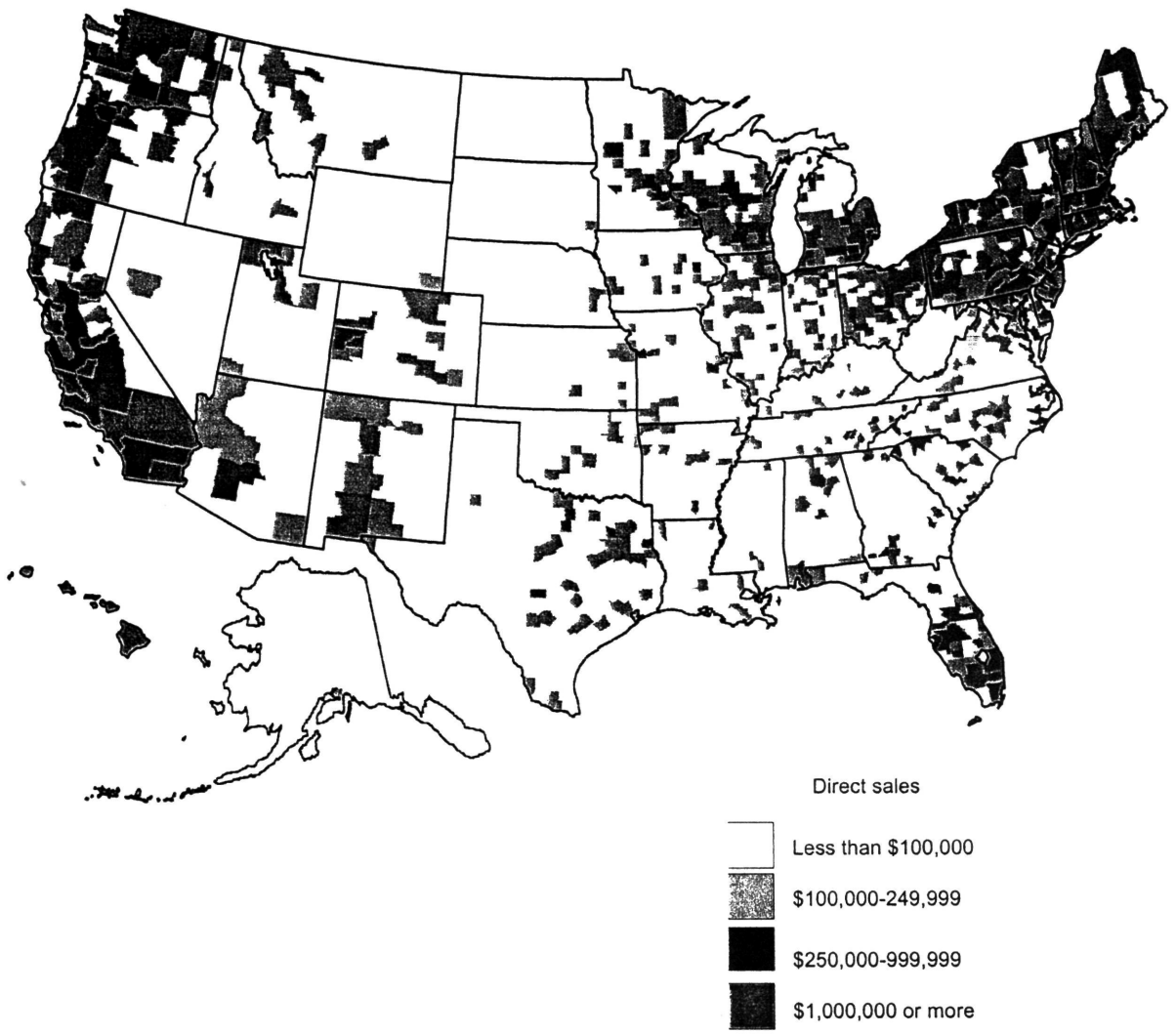
Direct sales are most common among farms whose primary products are vegetables and fruits, because these products often do not require further processing, are not highly perishable, and are best suited to pick-your-own operations. Forty percent of vegetable farms and 14 percent of fruit farms reported direct sales. These two farm types combined reported 58 percent of all direct sales. Fruit and vegetable farms reported direct sales averaging about $9,500 and also had the highest share of sales through direct channels, 1.5 percent for vegetable farms and 1.3 percent for fruit farms (table 1).

Direct selling is often portrayed as a marketing strategy for small farms. Small farms are more likely to use direct selling—direct sales amounted to 2.1 per cent of total sales for the under-$10,000 sales class, compared with less than 1 percent for larger sales classes. But midsized and larger farms that sell directly do so in larger quantities, and consequently farms in those sales classes account for nearly half of direct sales. In 1992, 48 per cent of direct sales were reported by farms with total sales of $100,000 or more. Less than 3 percent of midsized and larger farms reported direct sales, but the average direct sales per reporting farm was over $14,900 for farms with total sales of $100,000 to $499,999, and over $54,600 for farms with total sales of $500,000 or more. Among the smallest farms (those with less than $10,000 in total sales), 5.6 per cent reported direct sales of $65 million, an average of only $1,300 per reporting farm.

Figure 1

Direct sales from farms to consumers, 1992

Direct sales are concentrated in the Northeast, Great Lakes region, West Cost, and Florida



Source: 1992 Census of Agriculture.

For most farms, direct sales are very modest, but a small number sell substantial amounts through direct channels. Of the 86,400 farms reporting direct sales in 1992, 73 percent reported less than $5,000. Of that number, over 43,000 reported less than $1,000 in direct sales and another 30,000 reported $1,000-$4,999. On the other hand, nearly 13,000 reported direct sales of $5,000 or more, including 1,260 with direct sales exceeding $50,000. The over-$50,000 group reported over $172 million in direct sales, for an average of about $136,500 per farm.

Most Sales Are In or Near Metro Areas

Reviewing total direct sales by county can indicate the economic impact of direct sales. For most counties, the economic impact is modest. About three-fourths of counties had less than $100,000 in direct sales in 1992, while just under one-fourth had sales of $100,000 to $1 million. Only 63 counties had direct sales over $1 million. For a handful of counties, though, direct sales are sizable. Lancaster County, PA, posted over $4.6 million among over 550 farms reporting direct sales. Lancaster and

Table 1

Direct farm sales to consumers, by farm type, value of sales, and metro-nonmetro status, 1992

Fruit and vegetable farms, large farms, and those in metro areas account for a large share of direct sales

	Direct sales	Share of all sales[1]	Farms reporting sales	Share of all farms[2]	Direct sales per farm[3]
	Million dollars	Percent	Thousand	Percent	Dollars
Farm type:					
Cash grains	15	<0.1	6.1	1.5	2,600
Field crops	14	<.1	5.3	2.1	2,600
Vegetables and melons	112	1.5	11.9	40.2	9,400
Fruits and tree nuts	123	1.3	12.9	14.5	9,500
Horticultural specialties	13	.6	2.0	5.2	6,500
General farms, primarily crops	20	.1	2.9	5.9	6,900
Livestock, except dairy, poultry, animal specialties	64	<.1	35.8	4.4	1,800
Dairy	25	.1	3.4	3.0	7,400
Poultry and eggs	9	.2	2.3	6.6	3,900
Animal specialties	6	.1	2.6	3.2	2,300
General farms, primarily livestock	3	<.1	1.1	4.3	2,700
Total farm sales:					
Less than $10,000	65	2.1	50.7	5.6	1,300
$10,000 - $39,999	81	.9	18.4	4.5	4,400
$40,000 - $99,999	65	.4	8.0	3.2	8,100
$100,000 - $499,999	121	.2	8.1	2.8	14,900
$500,000 or more	71	.1	1.3	2.7	54,600
Urbanization:					
Counties in metro areas—					
Metro areas of pop. 1 million or more	109	.7	16.9	8.2	6,450
Metro areas of pop. 250,000-999,999	101	.4	15.3	6.1	6,600
Metro areas of pop. under 250,000	37	.2	8.8	5.3	4,200
Nonmetro counties—					
Adjacent to metro area	97	.2	26.0	4.0	3,700
Not adjacent to metro area	59	.1	19.4	3.0	3,000
All farms	404	.2	86.4	4.5	4,700

[1]Direct sales as a percentage of total farm sales.
[2]Percent of farms reporting any direct sales.
[3]Direct sales divided by the number of farms reporting direct sales.
Source: 1992 Census of Agriculture.

neighboring York County (ninth on the list with $2.4 million) are part of "Pennsylvania Dutch Country," reflecting the unique character of the Amish community and the most notable success of agricultural tourism. California and Pennsylvania, with over $35 million each, were the leading States in direct sales in 1992, followed by New York, Ohio, and Florida. Nearly all the leading counties are located in these States, with the addition of Massachusetts (table 2). These States grow more commodities suitable for direct sale than other States and offer easy access to urban consumers in large cities.

Census data indicate that direct selling is employed predominantly by farms in or near metro areas (see table 2 and fig. 2). Farms in metro areas accounted for over 61 percent of direct sales in 1992. (In contrast, these counties accounted for only 33 percent of all farm sales.) The largest metro areas, those with a population of 1 million or more, accounted for $109 million of direct sales, over one-fourth of the total, and metro areas with a population of 250,000-999,999 accounted for $101 million. Small metro areas with a population under 250,000 accounted for $37 million. Of the $156 million of direct sales in nonmetro counties, $97 million were in counties adjacent to metro areas. Of the top 20 counties ranked by value of direct sales, only 1 was a nonmetro county, while 5 were in metro areas with a population of 1 million or more and 14 were in metro areas with a population of 250,000-999,999 (table 2). Only 7 nonmetro counties had direct sales over $1 million.

The percentage of farms with direct sales and the direct sales per reporting farm were also higher in more urbanized counties. In the largest metro areas, 8.2 percent of

Table 2

Top 20 counties in direct sales from farms to consumers

All but 1 of the top 20 counties are in metro areas

County	State	Direct sales	Direct sales farms	Share of farm sales[1]	Share of farms[2]	1990 county population	Type of county[3]
		1,000 dollars	Number	Percent	Percent	1,000	
Lancaster	PA	4,656	554	0.7	12.3	423	Mmetro
Worcester	MA	4,072	208	8.2	20.9	710	Mmetro
Washtenaw	MI	3,148	91	6.0	.6	283	Lmetro
Palm Beach	FL	3,004	39	.3	4.2	864	Mmetro
Suffolk	NY	2,763	93	2.1	15.8	1,322	Lmetro
Dutchess	NY	2,753	82	8.3	14.8	259	Mmetro
Sonoma	CA	2,593	268	.9	9.8	388	Lmetro
Ulster	NY	2,462	70	4.8	16.2	165	Nonmetro
York	PA	2,424	241	2.0	14.2	340	Mmetro
Riverside	CA	2,345	294	.3	8.4	1,170	Lmetro
Ventura	CA	2,299	118	.3	5.4	669	Lmetro
Bristol	MA	2,262	107	7.6	20.5	506	Mmetro
Berks	PA	2,216	168	.9	10.8	337	Mmetro
Orange	NY	2,161	74	2.9	11.5	308	Mmetro
Stanislaus	CA	2,131	205	.2	47	371	Mmetro
Middlesex	MA	2,122	130	1.7	24.3	1,398	Lmetro
Maricopa	AZ	2,058	148	.4	8.0	2,122	Lmetro
San Diego	CA	2,021	462	.4	7.0	2,498	Lmetro
Hillsborough	FL	2,011	163	.8	5.9	834	Lmetro
Erie	PA	2,001	141	3.1	12.1	276	Mmetro

[1]Direct sales as a percentage of all farm sales in the county.
[2]Farms reporting direct sales as a percentage of all farms in the county.
[3]Counties classified as follows: Lmetro-metro area of population 1 million or more; MMetro-metro area of population 250,000-999,999.
Source: 1992 Census of Agriculture.

farms reported direct sales averaging $6,450 per farm. In nonmetro counties not adjacent to a metro area, 3 percent of farms reported direct sales averaging $3,000 per farm.

The counties with the largest direct sales are in metro areas. Although those counties also include small communities that have a rural character, the data indicate that direct selling tends to benefit farms and communities within a short drive of major population centers. Ulster, NY, is the only nonmetro county among the top 20 in direct sales, and it is on the fringe of the New York City metro area. Also in the top 20 are Dutchess, Orange, and Suffolk Counties on the fringe of the New York metro area. Riverside, Ventura, and San Diego Counties are close to population centers in southern California. Lancaster and York Counties have cities of only modest size and have a largely rural character, but they are within a short drive of Philadelphia and other population centers along the east coast.

Conclusion

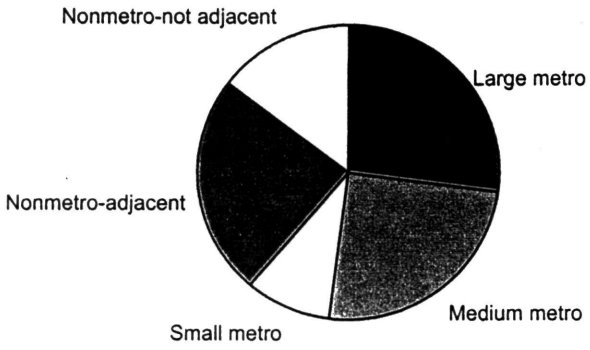
Although complete data are not available to make an adequate quantitative assessment of direct marketing, 1992 Census of Agriculture data indicate that only a small minority of farms generate significant income from direct selling. For most, direct sales are a small sideline business. The social aspects of direct selling appear to be as important as the economic benefits, if not more so.

It appears that direct marketing also mostly benefits farms in or near urban areas, where the bulk of direct sales occur. This outcome is largely dictated by the type of commodities that can be sold directly and the cost of either transporting products to consumers or of transporting consumers to the farm. To benefit from direct marketing, communities in more remote locations will need to make a concentrated effort to draw urban consumers to take advantage of the growing interest in travel, tourism, and ecological/environmental issues. Local producers might be organized to offer multiple farm outlets or a local farmers' market based on a common theme related to a distinct local product or lifestyle. Some producers have taken advantage of the growth of mail-order marketing and the growing demand for upscale, distinctive products to market fruits, nuts, jams, jellies, and similar items directly to consumers. Mail order can overcome the distance problem for farms far from the consumer.

Figure 2

Direct farm sales by degree of urbanization

Most direct sales are in metro areas or counties adjacent to a metro area



Note on county types:
Large metro: in a metro area of population 1 million or more
Medium metro: in a metro area of population 250,000-999,999
Small metro: in a metro area of population under 250,000
Nonmetro-adjacent: adjacent to a metro area
Nonmetro-not adjacent: not adjacent to a metro area

Source: 1992 Census of Agriculture.

The diverse mix of direct marketing methods used by U.S. farms, however, reveals the degree of innovation and creativity that characterizes farm entrepreneurs in the United States. By encouraging a climate of entrepreneurship and risk-taking and by bringing income and outside visitors to rural communities, direct marketing makes a significant contribution to rural development, especially in rural areas near urban centers. Direct marketing may also contribute to rural development by supporting diversity in the farm sector, offering an alternative source of income for small farms, organic farms, and other alternative farms that in turn support rural businesses.

For Further Reading . . .

Denny N. Johnson and Errol R. Bragg, *1994 National Farmers' Market Directory*, USDA-AMS, March 1994.

Julie Leones, Douglas Dunn, Marshall Worden, and Robert E. Call, *Agricultural Tourism in Cochise County, Arizona: Characteristics and Economic Impacts*, Tuscon: Arizona Cooperative Extension, 1994.

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Drew Weaver, "More Turkey Buyers Going to State Farms," *Washington Times*, Nov. 24, 1994, p. C7.

An additional source of information on direct marketing is 'direct-mkt,' an on-line discussion forum concerned with direct farm marketing. To subscribe to direct-mkt, send an e-mail to majordomo@reeusda.gov with the following message: subscribe direct-mkt <your e-mail address>