RECENT TRENDS IN ORGANIC PRODUCTION

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"I feel like I'm goofing off instead of working because what I do is so enjoyable."
—Tom Trantham, Twelve Aprils Dairy Farm, Pelzer, SC
(*The New American Farmer,* USDA, SARE, 2001)

A small, exceptionally diverse, organic farm sector has emerged in the U.S. to meet growing consumer demand for organic products in both local and national markets. More U.S. producers are considering organic farming systems in an effort to capture these high-value markets, boost farm income, lower input costs, and conserve natural resources. Many farmers who have adopted this ecological approach to farming also enjoy meeting the management challenges posed by these systems.

After gaining a foothold with consumers in the 1980s with organic fruits and vegetables, the U.S. organic farm sector has expanded into almost every crop and livestock sector. USDA's Economic Research Service collects data from all State and private organic certifiers in the U.S. to track the adoption of certified organic farming systems. Fifty-three organic certification organizations—14 State and 39 private—conducted third-party certification of organic production during 2000 and 2001. Most of these certifiers are now accredited under USDA's national organic program.

While government's role in the United States has focused primarily on market facilitation, several States—Minnesota and Iowa in particular—have begun subsidizing conversion to organic farming systems as a way to capture the environmental benefits of these systems. Potential benefits from organic farming systems include improved soil tilth and productivity, richer biodiversity, lower energy use, and reduced use of pesticides. Most European countries have been providing direct financial support for conversion to organic systems since the late 1980s, with conversion levels much higher than in the United States. And many of these countries have set targets for organic farming adoption of 10-20 percent of agricultural land area by 2010.

Organic Produce, Livestock, and Grains: Rapid Expansion since 1997

According to the most recent statistics from USDA's Economic Research Service, approximately 7,000 farmers certified 1.3 million acres of organic crops and 1 million acres of organic pasture in 2001. Every State but Mississippi and Delaware had some certified cropland, and nearly nine-tenths had certified pasture. Organic animal production systems were certified in 37 States, up from 23 States in 1997. Certified organic cropland more than doubled in 12 States between 1997 and 2001, and certified organic pasture more than doubled in nearly two dozen States.

California was the leading State in certified organic cropland acreage in 2001 with nearly 150,000 acres, mostly used for fruit and vegetable production. North Dakota followed closely with nearly 145,000 acres, mostly used for wheat, soybeans and other field crops. The other top States in certified organic cropland—Minnesota, Wisconsin, Iowa, Montana, Colorado, Idaho, South Dakota, and Michigan—also predominate in field crops.

The number of certified organic cows, swine, sheep, and lambs was about 72,000 in 2001, up nearly three-fold since 1997. Dairy has been one of the fastest growing segments of the organic foods industry, and milk cows accounted for over half of these certified animals. Poultry production under certified organic management showed even higher levels of growth during this period. Certified organic layer hens, broilers and other poultry

increased over six-fold between 1997 and 2001. USDA removed restrictions on organic labeling for broilers in 1999, and broilers showed the biggest jump during the study period, increasing from 38,000 birds in 1997 to almost 2 million birds in 2000 and over 3 million in 2001.

Overall, certified organic cropland and pasture accounted for 0.4 and 0.2 percent of U.S. cropland and pasture in 2001. Between 1 and 5 percent of top specialty crops—lettuce, carrots, apples, and grapes—were grown under certified organic farming systems, and tomatoes and citrus were nearly 1 percent. Although only 0.12 and 0.24 percent of the top U.S. field crops—corn and soybeans—were grown under certified organic farming systems, organic management was used for over 1 percent of rice, millet, dry beans, and flax.

Many of the top States in certified organic farm operations are States with a high proportion of small farms that grow fruits and vegetables for direct marketing to consumers. California, Oregon and Northeastern States and Upper Midwest had 240 or more certified organic operations. California has the most certified organic cropland in the U.S., and has the Nation's largest concentration of fruit and vegetable producers, both conventional and organic. Oregon and the Northeastern States have a relatively small amount of cropland, but have a large concentration of certified organic market gardeners. Most of the organic acreage in the Northcentral and upper Midwestern States is used for grain, bean, and oilseed production. Certified organic pasture and ranchland was concentrated in three States—Colorado, Texas, and Montana—although over 40 States had some certified organic pasture in 2001. Most Southeastern states had very little certified organic cropland, pasture, or operations.

In California, the average size of certified organic operations began increasing in the 1980's. Certified organic operations more than tripled in California between 1985 and 1991, a period when California accounted for the majority of U.S. organic production (Greene, 1992). Nonetheless, most of the organic farms in California, which has the nation's largest fruit and vegetable farms, may still be small. A recent University of California study indicates that the State's organic farms remained small (under 5 acres on average) throughout the late 1990s (Klonsky et al., 2002).

Local markets popular with organic farmers and consumers

Organic producers capture a much higher share of the consumer food dollar when they market their produce directly to consumers, and the last decade has seen a renaissance in the use of farmer's markets and other direct markets—including some organic-only markets—across the country. According to USDA's Agricultural Marketing Service, the number of farmer's markets in the U.S. rose from 1,755 markets in 1994 to 2,863 in 2000. And the number of farmers and consumers using these markets tripled during this period, to 66,700 farmers serving 2.7 million consumers in 2000. Results from USDA and other producer surveys indicate that organic farmers market directly much more frequently than do conventional farmers.

States and local municipalities have been fostering the development of farmers markets as a way to revitalize neighborhoods, enhance local food access, offer farmers lucrative direct-market outlets, and preserve regional farmland and open space. States are producing directories of farm stands and pick-your-own farms, including organic directories, and developing logos like "Jersey Fresh" and "Jersey Organic" to promote locally grown food. A number of regional and national nonprofits are also fostering direct connections between consumers and local farmers via interactive internet directories of local farm products and services, such as Local Harvest (www.localharvest.org), the Robyn van En Center (www.csacenter.org), and Community Harvest (www.communityharvestdc.org).

Organic farmers are producing a large array of "value-added" products—foods processed on their farm or in farm-owned plants or farm-based cooperatives—in addition to fresh fruits and vegetables to sell directly to the consumer. According to a recent organic producer survey from the Organic Farming Research Foundation, a California-based nonprofit, 31 percent of the survey respondents produced value-added products in 1997. These products included salsa, syrup, cider, pickles, preserves, dried and canned fruits and vegetables, butter, yogurt, cheese, milled flours, meat products, and wine.

USDA's national standards do not restrict additional ecolabelling of organic products, and some organic certifiers are also developing standards on social aspects of agricultural production and food distribution—fair trade, local sourcing, and family farm characteristics—that complement the organic standards and label. For example, Quality Certification Services, a non-profit based in Florida, has developed the "North Florida Local Food Partnership" that conducts advertising and certifies supermarkets, wholesalers, and restaurants that meet local food purchasing standards (www.buylocalflorida.org).

Measuring the Profitablility of Organic Farming

Organic farming systems rely on ecologically based practices, such as biological pest management and composting; virtually exclude the use of synthetic chemicals, antibiotics, and hormones in crop production; and prohibit the use of antibiotics and hormones in livestock production. Under organic farming systems, the fundamental components and natural processes of ecosystems—such as soil organism activities, nutrient cycling, and species distribution and competition—are used as farm management tools. For example, crops are rotated, food and shelter are provided for the predators and parasites of crop pests, animal manure and crop residues are cycled, and planting/harvesting dates are carefully timed. Organic livestock production systems attempt to accommodate an animal's natural nutritional and behavioral requirements, ensuring that dairy cows and other ruminants, for example, have access to pasture.

A limited, but growing, number of studies in the United States have examined the yields, input costs, profitability, managerial requirements and other economic characteristics of organic farming. A 1990 review of the U.S. literature by researchers at Cornell concluded that the "variation within organic and conventional farming systems is likely as large as the differences between the two systems," and found mixed results in the comparisons for most. More recent U.S. studies at several universities and USDA Agricultural Experiment Stations have indicated that organic price premiums may be key in giving organic farming systems comparable or higher whole-farm profits than conventional chemical-intensive systems, particularly for crops like processed tomatoes and cotton.

Under certain circumstances, organic systems may be more profitable than conventional systems, even without price premiums. For example, university studies of Midwestern organic grain and soybean production have found some organic systems to be more profitable than conventional systems, even without price premiums, due to higher yields in drier areas or periods, lower input costs, or higher revenue from the mix of crops used in the system. Recent studies by Washington State University and University of California, comparing organic and conventional systems for apple production, have also shown higher returns under the organic systems.

Net returns to various production systems may vary with biophysical and economic factors—such as soil type, climate, proximity to markets, and other farm specific factors—and a system that is optimal in one location may not be optimal in another. Also, factors not captured in standard profit calculations, such as convenience, longer-term planning horizons, and environmental ethics can motivate rational adoption of a particular practice or farming system.

Recent USDA Pilot Projects and Programs

USDA hosted a major international workshop in September 2002 to examine characteristics of organic production more closely. The workshop was sponsored by the Organization for Economic Cooperation and Development (OECD). It brought more than 140 participants from 21 OECD countries, including representatives from universities, governments, and NGOs representing farmers, consumers, organic associations, agribusiness and environmental interests.

One of the main objectives of the workshop was to examine empirical evidence on the environmental impacts of organic agriculture in relation to "integrated" or "conventional" farming systems. OECD concluded in the workshop proceedings that, "the strong balance of evidence from research, field trials and farm experience is that organic agricultural practices are generally more environmentally friendly than conventional agriculture, particularly with regard to lower pesticide residues, a richer biodiversity and greater resilience to drought," although instances of intensive management within organic farming systems that can impoverish biodiversity and

use excess nutrients were also noted (Organization for Economic Cooperation and Development, 2003). The workshop also highlighted new policy approaches—such as putting organic food on the menu in hospitals and other public institutions—that are being used to stimulate organic consumption in some countries.

Since the late 1990s, at least nine USDA agencies have started or expanded programs and pilot projects to help organic producers with production and marketing problems and risks and to expand research on organic farming systems (see Appendix, www.ers.usda.gov/publications/aib777). New data collection efforts include an ERS project, in partnership with USDA's Risk Management Agency and several universities, which will survey certified organic processors and handlers to study the marketing channels and relationships used in the organic food sector. Another new data collection effort is an Agricultural Marketing Service price report, the *Organic Poultry and Egg Report,* which began on January 5, 2004 and is released weekly on Mondays at 2:30 p.m. Eastern (www.ams.usda.gov/mnreports/aj_PY050.txt) . Also, the 2002 Farm Act for the first time included several small initiatives to assist organic farmers (www.ers.usda.gov/features/farmbill/analysis/organicagriculture.htm). These initiatives include expanded producer coverage for certification cost-share assistance and include new congressional funding for organic farming and marketing systems research.

References

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Klonsky, Karen, Laura Tourte, Robin Kozloff, and Ben Shouse. 2002. *A Statistical Picture of California's Organic Agriculture: 1995-1998*, University of California Agricultural Issues Center, August.

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Recent Trends in Organic Food Production

Catherine Greene

USDA Agricultural Forum Outlook 2004

February 19. 2004

Crystal Gateway Marriott Hotel

Arlington, VA

ERS

ECONOMIC RESEARCH SERVICE

U.S. Organic Production Systems

A production system that is managed in accordance with the Organic Foods Production Act and regulations to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

USDA National Organic Program

- **Purple Haze Farm**
- **Washington ’s Dungeness Valley**
- **7.5 acres**
- **50 varieties of certified organic lavender**

  - ***– Photo by Rosemary Gray***

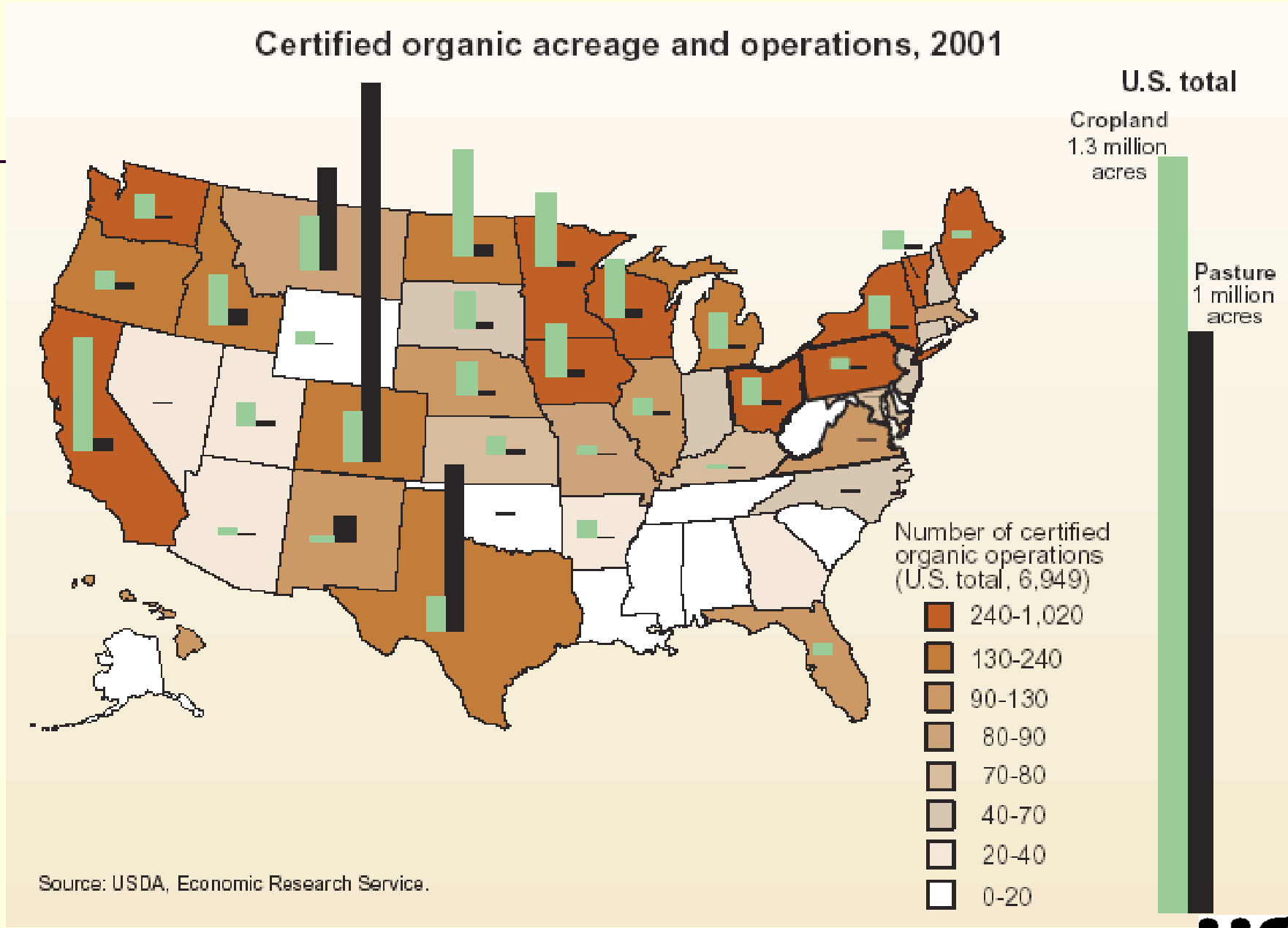
- **Lydia and Dennis Poulsen**
- **Snowville, Utah**
- **3,800 acres of organic pasture and small grains**

- **– *Photo by Jerry DeWitt***

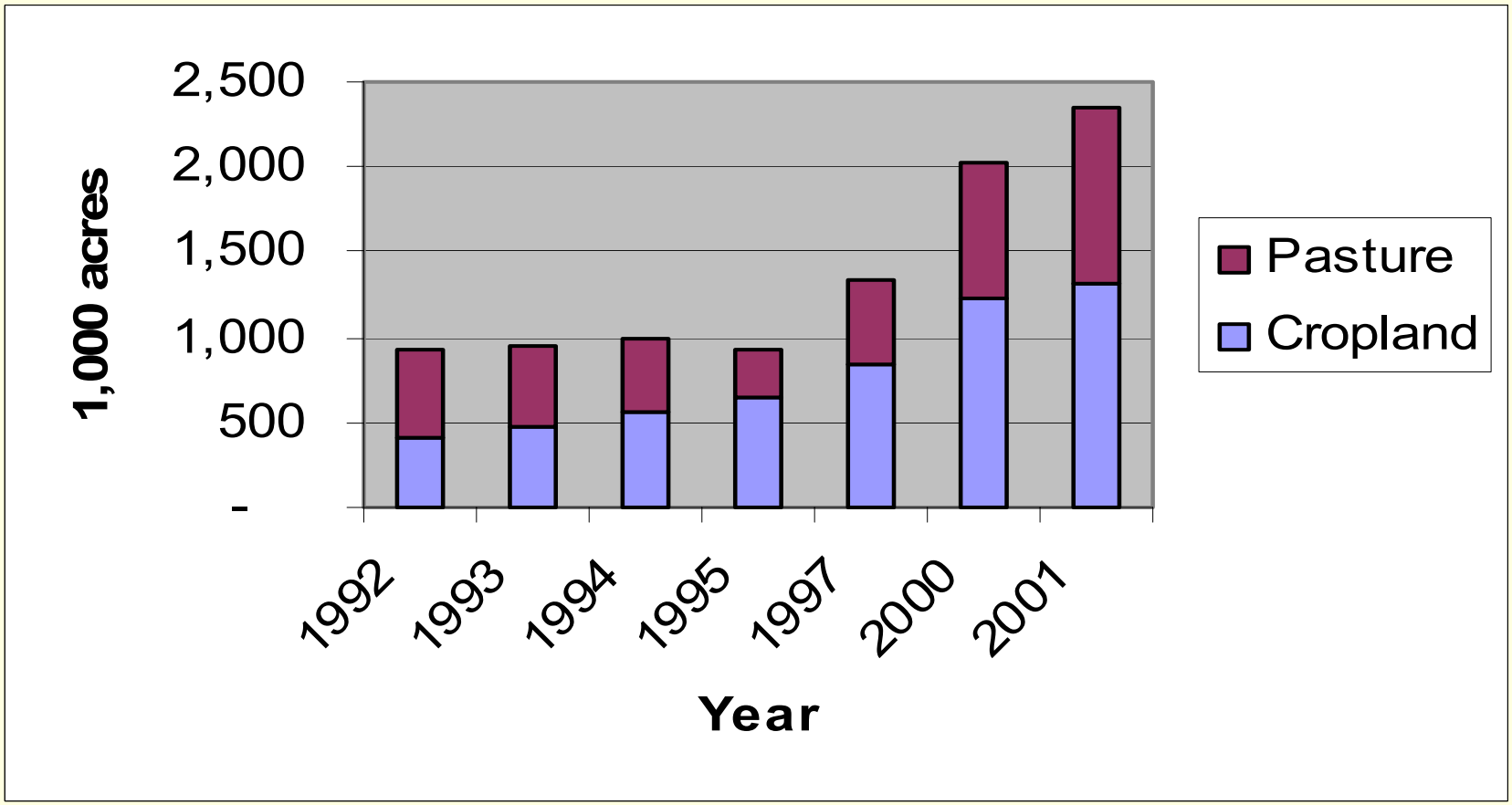
- Butterworks Farm
- Westfield, Vermont
- 95 Jersey cows (45 milkers and 50 heifers and dry cows)
- 375 acres of organic grains, hay and pasture
- Produces yogurt that is distributed in Vermont and other eastern states

- Joe Rude and Wende Elliott
- Colo, Iowa
- 120 acres
- Organic alfalfa, oats, corn, pastured poultry, ducks, turkey and lamb
  - *– Photo courtesy of Wende Elliott*

- Klaas and Mary-Howell Martens
- Penn Yan, New York
- 1,300 acres
- Organic grain and processing vegetables
- Founded organic feed and seed business


Certified organic acreage and operations, 2001
U.S. total
Cropland
1.3 million
acres
Pasture
1 million
acres
Number of certified
organic operations
(U.S. total, 6,949)
240-1,020
130-240
90-130
80-90
70-80
40-70
20-40
0-20
Source: USDA, Economic Research Service.

U.S. Certified Organic Cropland and Pasture, 1992 - 2001



Sources: 1992-94 ,Agr. Marketing Service Economic Research Service,USDA; 1995 (including revisions of 1992-94 farmland), Agrisystems International; 1997,2000-01, Economic Research Service, USDA.

2001 Adoption Rate Varies by Crop

Certified organic crop acreage accounts for:

Specialty Crops	Field Crops
1.0% U.S. tomato acreage	0.1% U.S. corn acreage
1.5% U.S. grape acreage	0.2% U.S. soybean acreage
3.0% U.S. apple acreage	0.3% U.S. wheat acreage
4.0% U.S. carrot acreage	0.8% U.S. oat acreage
5.0% U.S. lettuce acreage	1.0% U.S. rice acreage

Source: USDA Economic Research Service

World Markets for Organic Food and Beverages,2003

Market	Retail Sales 2003 (mil. US$/€)	% of Total Food Sales	ITC forecast - Annual growth % 2003-05
U.S.	$11.0-13.0B	2-2.5%	15-20%
Europe	$10.0-13.0B	-	-
Canada	$0.85-1.0B	1.5-2%	15-20%
Japan	$0.35-0.45B	<0.5%	-

- Source: *International Trade Center UNCTAD/WTO*

OECD Workshop on Organic Agriculture
23-26 September 2002, Washington D.C., USA

- Hosted by USDA's Economic Research Service (ERS), Agricultural Research Service (ARS), and Agricultural Marketing Service (AMS).
- Examined how organic farming systems differ from conventional systems in terms of structure, characteristics and environmental effects.
- Representatives from 21 OECD countries and one non-OECD country participated.

OECD Workshop: General Conclusions

- Organic Agriculture:
- is a relatively small share of production & consumption
- is expanding in all OECD countries to meet consumer demand
- has extended into the mainstream of the agri-food chain
- is generally less stressful on the environment
- may require more land and labor
- most OECD countries have standards, certification and labeling
- market forces are the principal driver in organic sector
- publicly-financed agricultural research includes some work on organic systems

- Source: Workshop proceedings (OECD, 2003, "Organic Agriculture: Sustainability, Markets and Policies," CABI Publishing, see http://www1.oecd.org/publications/e-book/5103071E.PDF)

Are Price Premiums Key for Organic Farming System Profitability?

- **Conclusions from recent U.S. studies:**
- **Yes - Klonsky and Livingston, 1994; Batte, 1993;**
- **Assadian, 1999**
- **Maybe - Welsh, 1999**
- **No – Swezey et al, 1994; Reganold, 2001**
- Source: ERS, 2003. "U.S. Organic Farming in 2000-2001: Adoption of Certified Systems."

USDA Agencies with Research, Program, and Regulatory Activities on Organic Agriculture

- Agricultural Marketing Service (AMS)
- Alternative Farming Systems Information Center (National Agricultural Library)
- Agricultural Research Service (ARS)
- Cooperative State Research, Education, and Extension Service CSREE)
- Economic Research Service (ERS)
- Foreign Agricultural Service (FAS)
- National Agricultural Statistics Service (NASS)
- Natural Resources Conservation Service (NRCS)
- Risk Management Agency (RMA)

Source: USDA Economic Research Service

ERS-USDA Contacts on Organic Agriculture:

ERS Organic Briefing Room Website:

WWW.ERS.USDA.GOV/Briefing/Organic/

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