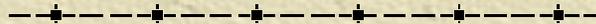


Transitioning to Organic Agriculture



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Huge Expansion of the Organic Industry



- ✦ Since 1990, organic retail \geq 20% growth/year
- ✦ In 2001, organic sales = \$7 billion
- ✦ USDA standards set in 2002
- ✦ Annual growth = 20-25% over next decade

Organic Acreage & Production

1993-2001

Certified Organic Farmland (Acres)

Year	1993	1997	2001
Pasture	491,000	496,000	1,040,000
Cropland	465,000	850,000	1,305,000
Total Farmland	956,000	1,356,000	2,345,000
Certified Organic Operations	3,536	5,021	6,949

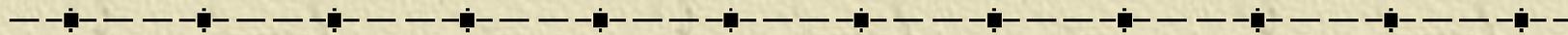
Source: Agricultural, Nov. 2002, USDA-ERS

(cont.) Organic Acreage & Production 1993-2001

Certified Organic Livestock (number)			
Year	1993	1997	2001
Cattle	9,222	4,429	15,197
Milk cows	2,846	12,897	48,677
Hogs/pigs	1,499	482	3,135
Sheep/lambs	1,186	705	4,207
Total Livestock	14,753	18,513	71,216

Source: Agricultural, Nov. 2002, USDA-ERS

(cont.) Organic Acreage & Production 1993-2001



Certified Organic Poultry (number)

Year	1993	1997	2001
Layer Hens	20,625	537,826	1,611,662
Broilers	26,331	38,285	3,286,456
Turkeys	---	750	98,653
Total Poultry	46,956	798,250	4,996,771

What is Organic Farming?

- ✦ Fertilize soil
- ✦ Maximize biological activity
- ✦ Maintain long-term soil health
- ✦ Manage weeds, insects & diseases
- ✦ Emphasis on biodiversity
- ✦ Alternative pasture and health methods with livestock
- ✦ Reduce external, off-farm inputs, and eliminate synthetic inputs
- ✦ Restore, maintain & enhance ecological balance

The Farm – An Integrated Entity

- ✦ Recycling nutrients
- ✦ Encouraging natural predators to manage pests



- ✦ Increasing plant densities to block weeds

Livestock & Poultry – Friends of Organic Systems

- ❖ Feed on grasses & mixed forages
- ❖ Improve soil structure
- ❖ Fertilize soil
- ❖ Cull non-harvestable crops



Source: Sustainable Agriculture Network

Research confirms - organic farming gentler on the environment



- ✦ Water infiltration rates
 - ◆ 50% higher in O.S.
- ✦ O.S. had 1/3 water movement into surface groundwater
- ✦ O.S. more efficient at storing nitrogen
- ✦ Higher biological activity
 - ◆ OM doubled in 10 years

What Makes a Successful Organic Farmer?

✦ Two mind-sets

- ◆ Economics
- ◆ Environmental concerns

✦ Mind shift

- ◆ From treating problems
- ◆ To treating causes of problems & recognizing that decisions affect the system.

**ORGANIC
VALLEY**



Family of Farms

What's The Difference?

✦ Healthy soil

- ◆ Breathes out CO₂
- ◆ Breathes in O₂
- ◆ Holds/absorbs H₂O
- ◆ Resists erosion

✦ Unhealthy soil

- ◆ Washes away
- ◆ Pollutes surface waters
- ◆ Limit plant growth

Organic Farming Systems: The Major Principles

✦ Rotations

✦ Soil

✦ Pests and
Weeds

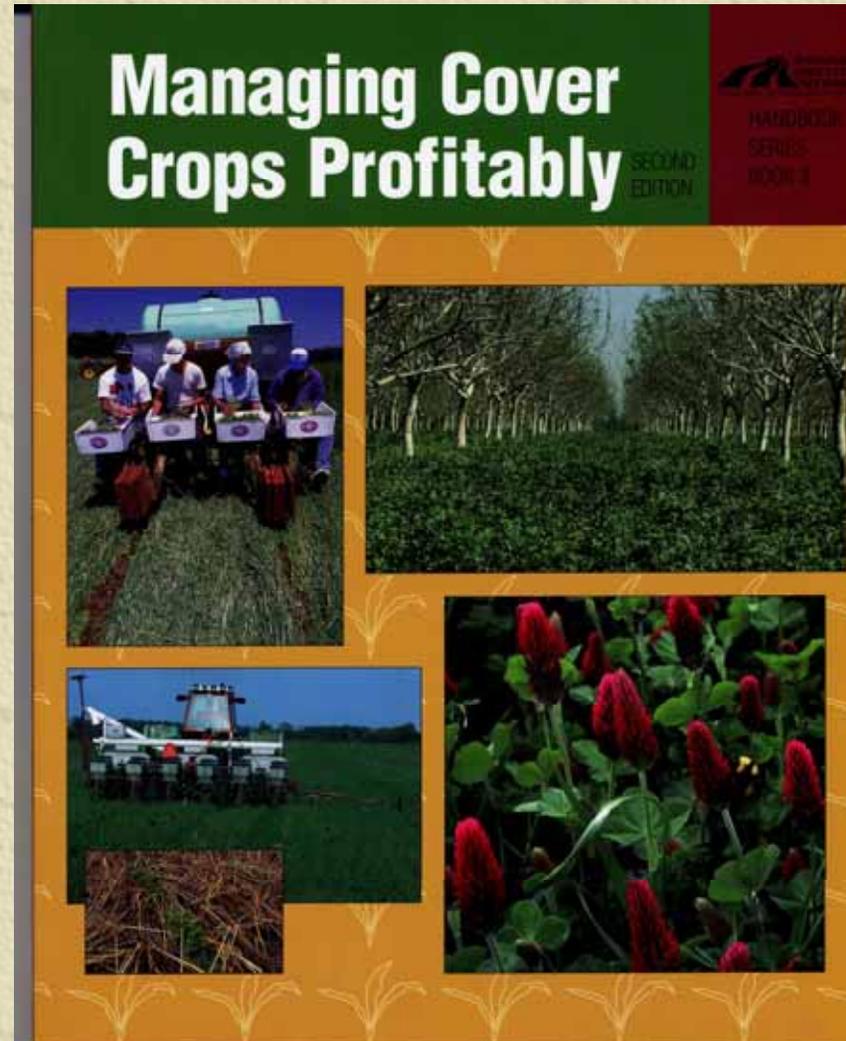


Top photo by UC-Davis



ROTATIONS

- ✦ Cover crops
 - ◆ Fertility
 - ◆ Control weeds
 - ◆ Habitat for beneficials
- ✦ Diverse plant species
 - ◆ Natural predation
 - ◆ Discourage pest & disease
 - ◆ Minimize economic risk
 - ◆ Minimize environmental risk



ROTATIONS (cont.)

- ✦ Balance between soil conservation & crop production by adding organic matter to soil
 - ◆ Supplies nutrients
 - ◆ Improves soil quality properties
 - Water infiltration
 - Water holding capacity
 - Minimizes soil erosion
- ✦ Weed control
 - ◆ Alternating between warm & cool weather plants
 - ◆ Using weed inhibiting plants, e.g., rye, sorghum

Sample Rotation: alfalfa, corn, soybeans, small grain

- ✦ Nitrogen fixing
- ✦ Interrupt pest cycles
- ✦ Suppress plant diseases
- ✦ Destroy, smother or eliminate weeds

SOILS: A Complex Ecosystem



Photo by Lisa McCrory

✠ OM additions

- feed the plants
- feed soil organisms

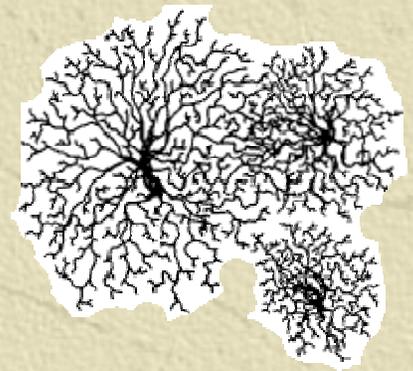
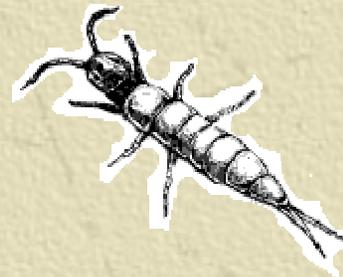
✠ OM accumulations

- Improve soil structure
- Improves soil organism populations, which improve
 - Aeration
 - Infiltration

Microscopic Zoo of Organisms – Great for the Soil!

✦ Higher microbial activity in O.S. than in conventional

✦ Increased activity by 1st or 2nd year of transition to O.S.



Don't forget to feed the fauna!



Source: CSIRO, Australia

- ✦ Bacteria-feeding
“good” nematodes
 - N to plants
- ✦ Irrigate plots in fall
 - Increasing beneficial nematode population
- ✦ Increased N release from cover crop in spring
- ✦ Nematodes store N over winter

The Economics of Organic Production

Organic and Conventional Prices for Field Crops 2000

Production	Organic	Conventional
Corn (\$/bu)	\$3.51	\$1.86
Soybeans* (\$/bu)	\$13.02	\$4.73
Spring Wheat (\$/bu)	\$5.72	\$2.82
Oats (\$/bu)	\$2.00	\$1.17

The Economics of Organic Production

Organic and Conventional Prices for Field Crops 2001

Production	Organic	Conventional
Corn (\$/bu)	\$3.01	\$1.89
Soybeans* (\$/bu)	\$12.29	\$4.43
Spring Wheat (\$/bu)	\$5.75	\$2.96
Oats (\$/bu)	\$2.00	\$1.42

The Economics of Organic Production

Organic and Conventional Prices for Field Crops 2002

Production	Organic	Conventional
Corn (\$/bu)	\$3.96	\$2.13
Soybeans* (\$/bu)	\$12.29	\$4.93
Spring Wheat (\$/bu)	\$5.54	\$3.47
Oats (\$/bu)	\$3.64	\$1.89

Is organic farming right for you?

- ✦ Commitment to
 - ◆ Safer food supply
 - ◆ Environmental protection
- ✦ Patience
- ✦ Good observation skills
- ✦ Understand ecological systems
- ✦ Motivated to market
- ✦ Willing to network with others
- ✦ Experiment with new techniques & practices

No One Correct Strategy for Transitioning to Organic

✦ Transition one parcel at a time

- ◆ Start with limited acreage
- ◆ Certify one area at a time

✦ Gradual transition

- ◆ Remove one class of inputs at a time
- ◆ Generally speaking - three years for transition
- ◆ Even 'transitional status' can contribute to higher premiums in the marketplace

No One Correct Strategy...(cont.)

✦ Cold turkey

- ◆ Crops w/o high nitrogen requirements
- ◆ Varieties that can fix their own nitrogen
- ◆ Legumes tend to do well the first year

✦ Certifying CRP land

- ◆ Proof of no prohibited inputs
- ◆ Potential for high returns

Organic Farming May Not Be For Everyone

- ✦ Successful business
- ✦ Good management is essential
- ✦ Converting to an organic production and marketing system is a learning process
- ✦ It is not a 'fix' for a failing conventional farm

Primary Resources For This Presentation

✦ “Opportunities in Agriculture: Transitioning to Organic Production”

◆ Sustainable Agriculture Network, USDA-SARE

- www.sare.org, 301-504-5230

◆ The National Center for Appropriate Technology

- www.attra.org, 800-346-9140

✦ USDA National Organic Program

- www.ams.usda.gov/nop/, 202-720-3253

Thank you. Questions?



Photo by www.fao.org