

# Sustainable Agriculture

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## Grazing dairy has many advantages with new financial monitoring system

You can use income and expense figures to measure more than farm profits by using a new financial system. It focuses on farm performance in four important areas: dependence on government programs, use of equipment and energy, job creation and maintaining a balance between the production and use of livestock feed.

The system was developed by the Minnesota Land Stewardship Project and its partners on a sustainability monitoring team. The team members developed a way to use numbers from financial statements and tax reporting to paint a more complete picture of how a farm is doing, says Dick Levins, agricultural economist with the University of Minnesota's Extension Service.

The four indicators can help measure how a farm is making progress from year to year toward becoming more sustainable and to compare sustainability of one farm to another. The new financial system was used to compare a grazing dairy farm to three more conventional farms—a cash crop farm, a crop farm with hog finishing and a conventional dairy. "The advantages of the grazing dairy came through loud and clear," Levins says.

**Government programs:** Since there was no corn, the government saw no reason to help the grazing dairy with expensive commodity programs. "Perhaps the public will someday rethink its decision to single out the one farm which used no chemicals and no commercial fertilizer for such treatment," Levins says.

**Equipment and energy:** There's little equipment on the grazing dairy farm since the cows are outside most of the year, spreading manure and harvesting feed. The total bill for the equipment and energy (counting custom hay harvesting and limited manure handling) was 20.7 percent of gross income. Levins says, "This was by far the lowest percentage for this category among the four sample farms."

**Jobs** accounted for 39 percent of gross income. Levins says this is "far higher" than grain operations and not much different from conventional dairies. What's very different is the way the income is split up. There's a much better balance between the operator and hired help, and both get reasonable vacations and time with their families.

**Balance** between production and use of feed: The farm is close to being a perfect balance. Some hay was sold and some feed was purchased, but the overall picture was far closer to being in balance than the three conventional farms.

"This example shows the answer to dairy financial problems doesn't necessarily lie in bigness," Levins says. "The problem to begin with is too much equipment, and buying more won't fix it. What works better

in this example is creative management guided by thoughtful goals." The report is available for \$7 from the Land Stewardship Project, 2200 4th St., White Bear Lake, MN 55110, (612) 653-0618.

### **Reduced input, diversified systems are more profitable in Wisconsin study**

Reduced input, diversified systems were more profitable than the high input monocrop continuous corn system in a Wisconsin study. The Wisconsin Integrated Cropping Systems Trial (WICST) study involved a four-year economic analysis of three cash grain cropping systems: continuous corn, corn-soybeans, and corn-soybeans-wheat/red clover.

Gross margins per acre from 1991-1995 were \$151 for continuous corn, \$204 for corn-soybeans and \$195 for corn-soybeans-wheat/red clover. Gross margins are gross returns (market value of the crops) minus variable or direct costs (seed, fertilizer, pesticides, custom operations, leased equipment, fuel, repairs, interest and grain drying).

During the four-year study, the corn-soybean system had the greatest average profitability of the three systems. It usually had the highest corn yields and was always more profitable than continuous corn. The soybeans were conventionally drilled in 1992 and 1993 and no-till drilled in 1994 and 1995. Corn was no-till planted every year with a starter fertilizer and a 40-pound nitrogen credit from the soybeans. Pests were controlled with standard agricultural chemicals.

Continuous corn was the least profitable option and had lower yields than corn following soybeans. Direct costs per acre with this system were always the highest of the three systems. The corn was planted in 30-inch rows in chisel-plowed soil, fertilized with starter and anhydrous ammonia, based on soil nutrient tests, and cultivated once. Pests were controlled with standard agricultural chemicals.

The corn-soybean-wheat/red clover system used no commercial fertilizer, no insecticides and only spot spraying of Canada thistle and one emergency rescue treatment of herbicides in the soybeans in 1992. Corn and soybeans were rotary hoed and cultivated. Wheat was fall seeded into the soybean residue following a light tillage. Red clover was frost seeded into wheat in early spring to serve as the nitrogen source for the subsequent corn crop.

For more information, contact Kat Griffith, WICST communications coordinator at (608) 265-8527 or Lee Cunningham, Walworth County (Wis.) extension agent at (414) 741-3190

### **Minnesota farm numbers same as last year**

There were 87,000 farms in Minnesota on June 1, 1996—the same number as a year previously. The land in Minnesota farms for 1996 was also unchanged at 29.8 million acres, according to the Minnesota and U.S. Departments of Agriculture. The average farm size in Minnesota remains steady at 343 acres.

A farm is defined as "any establishment from which \$1,000 or more of agricultural products were sold or would normally be sold during the year."

In terms of "economic sales classes," Minnesota farms shifted from lower to higher incomes in 1996, compared to 1995. The number of farms in the \$1,000 to \$9,999 group decreased from 35,000 in 1995 to 31,000 in 1996. Those with sales in the \$10,000 to \$99,999 range fell from 34,000 to 33,000. The \$100,000 and over sales group increased from 18,000 to 23,000 farms.

In the U.S., the number of farms in 1996 is estimated at 2.06 million, down less than half of one percent from 1995. Total land in farms in 1996 is 968 million acres, also down less than half of one percent from last year. Average farm size in the U.S. held steady from 1995 at 469 acres.

By economic sales classes, U.S. farms in the \$1,000 to \$9,999 group showed a gain over 1995 of 6,390, for a total of 1,019,310. Farms in the \$10,000 to \$99,000 group were down 19,800, to 705,600. And U.S. farms in the \$100,000-plus group were up 4,900 during the year, to 338,100. (Source: Minnesota Agricultural Statistics Service, PO Box 7068, St. Paul, MN 55107, (612) 296-2230)

### **In Ohio study, organic farming helps plants resist pests**

Long-term management of soil can increase a plant's ability to resist insect pests, according to a study by scientists at Ohio State University. Researchers at the Ohio Agricultural Research and Development Center (OARDC) found significantly less egg laying by European corn borers on corn plants grown in organically managed soil compared to plants grown in conventionally managed soil.

A possible reason is biological buffering from soil organisms (they thrive in soils with organic matter), which could lead to better nutrient balance in plants. The scientists are now working to see if nutrient balance exists. The findings could help farmers, both organic and conventional, grow crops that are less susceptible to insects and disease, yet still yield well. Inputs could be reduced without losing income.

For more information, ask for free publication number 185 from: SCT, OSU/OARDC, 1680 Madison Ave., Wooster, OH 44691; cantrell.4@osu.edu; (330) 263-3700. (Source: OARDC Report, Sept., 1996)

### **New publication: urban landscapes can be more sustainable**

We can achieve a sustainable urban environment by carefully designing the landscape to reduce maintenance and by using responsible management practices. So says a new publication, *Sustainability in Urban Ecosystems*, written by University of Minnesota entomologists Vera Krischik and Kathryn J. Bevacqua and published by the Minnesota Extension Service.

The new publication promotes Plant Health Care (PHC) practices, which include selecting the right plants, composting yard waste, encouraging biodiversity and using Integrated Pest Management or IPM. Whether you're planting a garden, managing turf, developing a parkland or landscaping a parking lot, your management practices affect everyone. The decisions you make affect water quality, waste disposal and survival of all forms of wildlife.

When looking at alternative landscape practices, stress management rather than control, the publication says. Work with nature to restore the ecosystem balance by improving soil and site conditions. Since problems can't be eradicated, begin by accepting some imperfections, understanding the problems, and using creative management strategies to restore environmental health. The result: a more harmonious environment and more leisure time to enjoy it.

The publication, FO-6709-D, is available from county extension offices in Minnesota or by credit card at 1-800-876-8636 or (612) 624-4900 in the Twin Cities. You can find more Minnesota Extension Service educational information on the World Wide Web.

## **Coming events. . .**

**Small Farm Trade Show & Seminars**, Nov. 1-2 at the Midway Exposition Center, Columbia, Mo. This will be the fourth year for the event, which drew over 2,000 people from 23 states last year. The theme is "Profit from Diversity" and features money-making farmers communicating their methods to fellow farmers. Call the Small Farm Today magazine at 1-800-633-2535 for more information.

**The Whole Farm: Renewing Healthy Relationships Between Humans and Animals in Agriculture**, Nov. 1-3 at the Humphrey Institute on the University of Minnesota's West Bank. This is a joint conference of the Biodynamic Farming and Gardening Association and the Upper Midwest Community Supported Agriculture (CSA) groups. Call 1-800-516-7797 or (612) 644-2038.

**The Land Stewardship Project's Second Annual Gathering for Members**, Nov. 9-10 at Camp Omega, Waterville, Minn. The theme is "Water Connects us All." Contact LSP, 2200 4th St., White Bear Lake, MN 55110 or call (612) 653-0618.

**A Sustainable Life: Finding a Future for Community and Agriculture in America**, Nov. 15-16. Sponsored by the Anderson Center and the Minnesota Department of Agriculture's Energy & Sustainable Agriculture program. The keynote speaker will be Wes Jackson, co-founder of the Land Institute in Salina, KA. Call (612) 388-2009 for more information.

## **We can use your story ideas**

Keep the story ideas coming. Send them to the editor: Jack Sperbeck, 405 Coffey Hall, University of Minnesota, St. Paul, MN 55108, (612) 625-1794. E-mail: [jsperbeck@extension.umn.edu](mailto:jsperbeck@extension.umn.edu). Other editorial board members are Helene Murray (612) 625-0220, Don Olson (612) 625-9292 and Bill Wilcke (612) 625-8205.

**Our mission statement:** To help bring people together to influence the future of agriculture and rural communities to achieve socially, environmentally and economically sustainable farms and communities.