

Sustainable Agriculture

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It's money in the bank: no herbicide or fertilizer expenses

Jaime DeRosier is on his third farming venture. He's raised alfalfa as a cash crop, operated a tree nursery, and is now farming 1,200 acres near Red Lake Falls, Minn.

"People told me there's no money in farming, so if I can save \$30 to \$40 per acre by not using fertilizer and herbicides and get the same yields, I'll take it," he says. DeRosier is working with a demonstration grant from the Minnesota Department of Agriculture's Energy and Sustainable Agriculture Program. (For more information about the grant program contact Wayne Monsen at (612) 282-2261).

DeRosier is using a cropping systems approach with CRP land in a crop rotation program. He farms in an area where there's high chemical use, and the project examines use of buckwheat and winter rye to provide weed control and fertilizer on former CRP land. With the CRP land he planted buckwheat after spring plowing, then disked 30 days later. In fall he seeded hairy vetch and rye.

In spring he lets the vetch and rye grow a bit, incorporates the green manure, then plants soybeans, wheat, corn or sunflowers. "By then, there's no weeds or quack and the land is nutrient-rich and healthy," he says.

With this system, he's had 100 percent weed control in a test plot, while his neighboring field was weedy. "Some people don't believe me, but I drove past the fields every day. The system also will work on large acreages," he says.

This last fall he seeded hairy vetch and rye on several hundred acres where he'll plant soybeans in spring. He's expanded to 1,200 acres from 160 acres three years ago, and is "just getting the cropping system started" on most fields. "But five years from now I'll guarantee weed-free fields with no herbicide or fertilizer use," he says. And based on soil fertility tests thus far, he expects higher soil fertility tests than when he started the program.

"Anyone from a gardener to someone farming several thousand acres can use this system successfully," he says. Jaime DeRosier can be contacted at RR 1, Box 310, Red Lake Falls, Minn., 56750, (218) 253-2861.

Composting—the natural way to dispose of dead animals

A new project to evaluate composting cattle, hogs and sheep carcasses has started at the University of Minnesota's Southern Experiment Station, Waseca.

The poultry industry has used composting successfully for years, and this project will help fine-tune procedures for other animals. In addition to the Waseca research, there are demonstration sites on commercial hog operations. "Hog producers are very bio-security conscious," says Roger Walker, a

researcher at the Waseca station. On-farm composting can help prevent disease spread to other hog units. It's also more aesthetically pleasing to dispose of carcasses promptly. The carcasses are covered with either sawdust or poultry litter, which absorbs odors from the decomposing carcasses.

Once composting is complete, a manure spreader is used to spread the product on fields as a fertilizer. "This product is better for the land than partially decomposed bedding in manure," Walker says, since the latter must temporarily "rob" nitrogen from the soil for the decomposition process to work.

Walker says there are two basic approaches to composting animal carcasses: a passive system, which takes about six months, and a more aggressive approach where the compost is turned every two to three weeks. With the more active process the carcasses become fertilizer in six to eight weeks.

The Minnesota Department of Agriculture's Board of Animal Health is a project sponsor (and has issued a special permit since it's illegal to compost cattle in Minnesota). Other sponsors include the Minnesota Pork Producers' Association and the Agricultural Utilization and Research Institute (AURI). Walker can be reached at the Southern Experiment Station, Waseca, Minn., 56093-5160, (507) 835-3422.

Future of the hog business is bright, VanDerPol says

Alternative hog production practices have served the Jim and LeAnn VanDerPol family well. Their low-cost production system features a hoop house, 80 acres of alfalfa-based pasture and animal harvest of field crops on their 320-acre farm near Kerkhoven, Minn. They took over the farm from Jim's parents in 1977.

In 1993 they completed Holistic Management Training that has allowed them to focus on quality of life issues, become good environmental stewards and ensure the profitability of the farm without off-farm income. They're presently concentrating their diverse farming operation on livestock production. While maintaining herds of sheep and cattle, they're focusing on "birth to market" hog production as their 26-year-old son, Josh, and his family join the business.

Next year they plan to expand to 200 litters annually by adding another hoop house. "From our perspective, the future, especially the hog business, looks bright," Jim says. He was a scheduled speaker at an "Alternative Hog Production Strategies" conference in Lafayette, Ind., in early December. Jim and LeAnn VanDerPol can be contacted at (320) 847-3432.

Metropolitan Council receives "Friend of Agriculture" award

The Metropolitan Council has received the "Friend of Agriculture" award from the Minnesota Association of County Agricultural Agents. The award is presented annually to an individual or organization that has provided exemplary leadership on issues affecting Minnesota agriculture.

The association's members are educators representing the University of Minnesota Extension Service throughout the state. They cited the Metropolitan Council's Water Quality Division under the direction of Jack Frost for its commitment to assist farmers and land managers to achieve water quality goals within the Minnesota River watershed.

The Metropolitan Council has funded water quality projects involving farm organizations, the Extension Service, Soil and Water Conservation Districts and other organizations. "The Metropolitan Council has not always been appreciated by the agricultural sector," said Chuck Schwartau, association president from Red Wing.

“But our members felt the Metropolitan Council is clearly a leader in addressing the critical watershed needs in the Minnesota River Basin. Their efforts result in positive changes not only in the metropolitan area, but throughout Minnesota.” The Friend of Agriculture award was presented to Metropolitan Council representative Jack Frost at the Extension Service Annual Conference in October.

UM scientists isolate soil bacteria that “eats” atrazine

University of Minnesota scientists have discovered a new, inexpensive way to remove atrazine from municipal drinking water supplies. Atrazine is a widely-used herbicide that has contaminated some water supplies in the Midwest.

Soil microbiologist Michael Sadowsky and biochemist Lawrence Wackett have isolated a soil microorganism, *Pseudomonas* sp. strain ADP, that degrades and mineralizes high concentrations of atrazine, a widely used, persistent herbicide that can remain in groundwater supplies for years.

Some community water supplies in the Midwestern corn belt may periodically violate the revised Safe Drinking Water Act due to concentrations of atrazine and other triazine herbicides. Many small municipal drinking water treatment plants aren't equipped to eliminate atrazine from drinking water, says Sadowsky, a faculty member in the College of Agricultural, Food and Environmental Sciences. Removing atrazine from drinking water requires expensive chemical processes, usually using activated charcoal.

The discovery by Sadowsky and Wackett could lead to an inexpensive process for removing atrazine from drinking water supplies. The information from their study can be used by operators of municipal water treatment plants.

The scientists have been working with a commercial engineering firm to further develop the technology. They have actually discovered two ways to remove atrazine from drinking water: using the *Pseudomonas* sp. strain, which uses the atrazine as a nitrogen source for growth and using purified enzymes from the organism.

The new process is effective, economical and fast. Using a purified enzyme from the *Pseudomonas* sp. strain, atrazine is removed from drinking water samples in minutes.

Atrazine has been widely used on corn and sorghum crops over the past 30 years. It's used on about 67 percent of all U.S. corn acreage, 65 percent of sorghum acreage and 90 percent of sugarcane acreage. Novartis Corporation (formerly Ciba-Geigy), the manufacturer of atrazine, has supported the research project and efforts to remove atrazine from municipal drinking water, Sadowsky says.

Reminder: SARE marketing proposals due Jan. 23, 1998

The North Central Region Sustainable Agriculture Research and Education program (NCSARE) has issued a special call for proposals on innovative marketing strategies. NCSARE has allocated \$300,000 to fund projects that:

- Improve producers' ability to develop and manage marketing relationships.
- Address farmer/rancher barriers to developing and managing marketing relationships.
- Assist with development of community markets and producer-owned co-ops.

- Involve farmers and ranchers in developing institutional policies that relate to local and regional markets.
- Examine consumer preferences for local food.
- Develop training for business owners on how to work with local producers.

Proposals are due in the NCSARE office in Lincoln, Neb., by 5 p.m., Jan. 23, 1998. Get a copy of the call for proposals, email sare001@unlvm.unl.edu, or call (402)-472-7081.

MISA will continue at least five more years

The bylaws that were developed when the Minnesota Institute for Sustainable Agriculture (MISA) was established in 1992 included the following sunset provision: "MISA will be dissolved on June 30, 1997, unless a resolution for its continuation is passed by the joint seminar and the MISA board of directors." In the fall of 1996, MISA conducted a review by surveying faculty, holding open meetings and bringing in an external review panel. After seeing the results of the review, both the board of directors and the joint seminar approved continuation of MISA for five more years.

MISA's board and staff used information gathered during the review and input later provided by partners to develop a new five-year strategic plan. A draft of this plan was presented to Dean Mike Martin of the College of Agricultural, Food, and Environmental Sciences. Dean Martin agreed to continue funding MISA. He challenged MISA to incorporate sustainability into everything the college does. MISA's board will put final touches on the strategic plan at its January retreat.

The MISA board appreciates the support provided by the College of Agricultural, Food, and Environmental Sciences and by all of our university and non-university partners. As we enter our second five years, we invite you to work with us in transforming the college and Minnesota agriculture. You can contact Misa at (612) 625-8235, toll free at 1-800-909-6472, misamail@tc.umn.edu.

U of M Extension Service honors Maple Plain resident

Marvin Johnson, Maple Plain, has been awarded the University of Minnesota Extension Service's Dean and Director's Award for Distinguished Contributions. Johnson is a farmer and president of Hilltop Farm, and serves as co-chair for the endowed chair in agricultural systems at the university.

He also is mayor of Independence and president of the Hennepin County Farm Bureau. The Dean and Director's Award for Distinguished Contributions to Extension is given annually to recognize outstanding leadership and contributions to the people of Minnesota.

Proposals being considered for new Extension Service field positions

There were 75 letters of intent to create new field staff positions under the new "Sustaining Minnesota's Natural Resource-Based Industries Initiative." The list of those invited to submit full proposals (due Jan. 15) has been narrowed to 24, and approximately 10 positions will be recommended to Extension Service Dean and Director Katherine Fennelly. For more information, contact the director's office at (612) 624-1222, e-mail, mnext@umn.edu.

About this newsletter...

For the past year we've been funded by the Minnesota Extension Service and the Minnesota Institute for Sustainable Agriculture (MISA) with support from the Minnesota Department of Agriculture.

We're always looking for story ideas. 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. Other editorial board members: Helene Murray (612) 625-0220, murra@021.tc.umn.edu; Tom Wegner (612) 374-8400, twegner@extension.umn.edu; and Bill Wilcke (612) 625-8205, wwilcke@extension.umn.edu

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.