



Marketing projects attract growing interest

by LAURA MILLER Newsletter editor

The Leopold Center's Marketing and Food Systems Initiative Workshop on December 8 was the Iowa equivalent of jambalaya, a simmering and tasty stew full of information and resources, all spiced with fresh research.

Leaders of more than 30 projects funded by the Marketing and Food Systems Initiative and the Regional Food Systems Working Group (also coordinated by the Center) presented summaries of their work to more than 150 people during the day-long event in Ames. Topics ranged from development of markets for goat meat in northwest Iowa and place-based tourism in northeast Iowa, to consumer research on sustainably-raised foods and the economic impacts of regional food enterprises.

"The Iowa projects that we have supported are truly on the cutting edge of new market strategies for food and fiber enterprises," said Rich Pirog, who leads the Center's Marketing and Food Systems Initiative. "The tools and research findings from these projects can be used to help farmer-led food and fiber businesses succeed."

Pirog said attendance exceeded expectations, despite a winter storm that brought frigid temperatures and hazardous driving conditions to the central and southern parts of the state. Participants included farmers, educators, researchers, economic development officials and owners of food businesses. It was the first event to offer a comprehensive view

MARKETING (continued on page 2)

Leopold Center sees leadership changes

The Leopold Center begins 2006 with a new leader and a new staff position.

On November 1, Leopold Center director Fred Kirschenmann accepted a position as the first Leopold Center Distinguished Fellow. The move allows Kirschenmann time to focus on the broader issues that face sustainable agriculture and how they relate to the Center's work. At the same time, Jerry DeWitt, coordinator of ISU Extension's sustainable agriculture program and its Pest Management and Environment program, began a two-year appointment as interim director at the Leopold Center.

The changes were announced October 28 by Wendy Wintersteen, a 15-year member of the Leopold Center Advisory Board and then-interim dean of the Iowa

State University College of Agriculture. She also chaired the search committee that brought Kirschenmann, a North Dakota organic farmer who was well-known in national sustainable agriculture circles, to ISU in July 2000.

"The Distinguished Fellow position is an acknowledgement of Fred's leadership in broad issues affecting farmers," Wintersteen said. "He has a deep understanding of the science and philosophy of sustainable agriculture as well as a special talent for looking to the future and bringing people together to work on goals. His emphasis on marketing and food systems, ecology and policy will continue to guide the center's programs."

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The *Leopold Letter* is also available on the web at:

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LEOPOLD LETTER MISSION

The mission of the Leopold Letter is to inform diverse audiences about Leopold Center programs and activities; to encourage increased interest in and use of sustainable farming practices and market opportunities for sustainable products; and to stimulate public discussion about sustainable agriculture in Iowa and the nation.

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The Leopold Center for Sustainable Agriculture seeks to identify and reduce adverse socioeconomic and environmental impacts of farming practices, develop profitable farming systems that conserve natural resources, and create educational programs with the ISU Extension Service. It was founded by the 1987 Iowa Groundwater Protection Act. The *Leopold Letter* is available free from the Leopold Center at 209 Curtiss Hall, Iowa State University, Ames, Iowa 50011-1050; (515) 294-3711.



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TOOLS PROVIDE MARKET INFORMATION

MARKETING (continued from page 1)

of the Marketing and Food Systems Initiative.

Headlining the workshop was a demonstration of the new Iowa Produce Market Potential Calculator, a web-based program that looks at supply and demand for 37 fruits and vegetables grown in Iowa (see page 9).

Also premiered was Iowa Market Maker, a web-based mapping system that finds producers and markets for agricultural products. Modeled after a similar project in Illinois, the web site can help a grocery store find farm-fresh eggs or a farmer find a place to sell them. About a third of the development costs was provided by a Leopold Center grant, with other support from the Agricultural Marketing Resource

KIRSCHENMANN WILL CONTINUE NATIONAL WORK; DEWITT TO FOCUS ON STATE PARTNERSHIPS

CHANGES (continued from page 1)

"Iowa State is firmly committed to sustainable agriculture research and education and to the Leopold Center as a catalyst for making farming more profitable, more environmentally friendly and to build stronger rural communities," Wintersteen added.

The personnel changes also were discussed briefly at a previously scheduled day-long retreat in Boone for members of the Center's advisory board and staff.

"Fred has taken the Leopold Center to a new level and we have the ability to grow even more under this new arrangement," said Jim Penney of Ames, who represents the Agribusiness Association of Iowa on the board.

Drake University law professor Neil Hamilton has served on the board since the Leopold Center was created in 1987. He said the leadership changes allow Kirschenmann to continue his work on national projects while DeWitt can focus on strengthening the Center's partnerships in Iowa.

"I am very proud of the Leopold Center's reputation for sustainable agriculture and Fred has given us a stronger national presence," Hamilton said. "Jerry also knows sustainable agriculture and will build what we need at home, so this has a bookend quality."

DeWitt, who also attended the retreat, said he has long respected Kirschenmann



www.leopold.iastate.edu

Read workshop abstracts, presentation handouts:
www.leopold.iastate.edu/research/marketing_files/workshop/index.htm

Find Iowa Market Maker at:
marketmakeriowa.com

Center and the Iowa State University Extension Value Added Agriculture program. The new web site is scheduled to become active in early January 2006.

Other presentations reported on videos and worksheets for producers interested in vineyards and wineries (see page 8), a web site for organic processors, new business planning programs for farmers and other entrepreneurs, natural and organic meat production, and place-based foods.

and that he looked forward to their joint efforts to further the Center's mission.

Kirschenmann said his activities will continue to build on the synergy created by bringing the vision for sustainable agriculture to new groups. He has helped plan several national conferences and worked with a number of nationally-focused projects, including the Agriculture of the Middle efforts that grew out of meetings he helped convene in 2003. The multi-state project addresses the diminishing number of midsize farms, many of which are family farms.

Kirschenmann also will continue to represent Iowa in a long-term effort to improve water quality in the Mississippi River Basin, and on the Whiterock Conservancy Board.

"I am absolutely committed to the Leopold Center mission and as long as I can be useful to fulfill the mission I will continue to be here," he said. "My alternative position allows me to continue many of my activities and speak about the changes that I believe we need to make if we are going to have a sustainable agriculture on this planet."

Kirschenmann was the Center's second director and first farmer to hold the position. He holds a faculty appointment in ISU's Department of Philosophy and Religious Studies.

q&a

Introducing Leopold Center interim director Jerry DeWitt



Q. You joined the Leopold Center staff November 1, 2005, but are not new to sustainable agriculture. What can you tell us about yourself?

I am and remain the son of an Illinois farm family. We still own 160 acres in east central Illinois (Iroquois County) that has been in our family since 1947. In my early days, I remember our farm having a mixed rotation of corn, beans and small grains, a registered Black Angus cow-calf herd, sheep for 4-H projects, eggs for the hatchery, a few hogs and Christmas trees. My father was an experimenter and tried many new things. He always had ideas and was willing to try – and to fail if need be. I guess my father instilled some of those traits in me, too.

My formal education was in zoology, botany, ecology and entomology, from Eastern Illinois University and the University of Illinois at Urbana-Champaign. The first hint of my ultimate vocation came during graduate school when I learned about the Cooperative Extension Service. I started working in Entomology Extension and traveled across Illinois, visiting farms and talking to a lot of farmers. I found my life's work and have never looked back. I came to Iowa State University in 1972 for my first job as an Extension Entomologist. It was the right choice and the right location – Iowa.

One of my earliest recollections as a small child in the late 1950s was observing the relationships between humans and their environment. Although I never made the connection then, I finally was able to put the pieces together in graduate school.

One of my Saturday morning tasks on the farm was to pick up dead robins from our lawn, a regular occurrence during the summer months. Later, as I read *Silent Spring* by Rachel Carson, I learned that Iroquois County and the towns of Donovan (where I went to school) and Sheldon were ground zero for the massive Japanese beetle eradication program that included widespread aerial spraying of the chlorinated cyclodiene pesticides aldrin and dieldrin. Although the impacts were there, not many people made the connections at the time.

Luckily, a few including Rachel Carson (and of course, the robins) sensed what was going on. It took me another 12 to 15 years to make the connection and understand what we had lived through in Iroquois County. Even today, the connections between people and their environment drive how I view and assess what's going on around me. I sense these connections and try to illustrate them in one of my avocations, photography.

What experiences have you had at Iowa State University?

I really enjoy change and challenges. My career at ISU has been marked by many opportunities inside and outside of Iowa. All of my university work has been in Extension – a passion that has driven my career and fulfills me daily.

I have worked as an Extension Entomologist and coordinated the Pest Management and Environment Program with both the Integrated Pest Management and Pesticide Applicator Training programs. I continue to serve as the Iowa Extension Sustainable Agriculture Coordinator. I also have taken on administrative roles in Extension and the College of Agriculture, serving as State Agriculture and Natural Resource Leader for Extension. And I have been called to Washington, D.C. on three occasions to lead the USDA's National Sustainable Agriculture and Research Education (SARE) program.

What did you bring to Iowa from your formal education?

I have found that my formal education provided the framework but not all of the answers for today's problems. Sometimes exposure to a variety of disciplines leads to the assumption that a person knows how to think, but that can be very misleading. I often say that my early education gave me the ability to understand and apply ecological principles and a systems approach. This works with people and can be prac-

ticed daily. I also still use, appreciate and practice skills acquired in my poetry and ornithology classes. What I learned in graduate school was experiential, and prepared me for my extension work in Iowa. This knowledge did not come from a book.

What have you learned about the Leopold Center during your first few weeks on the job?

First, the Leopold Center has been a long-time part of my career and a known, trusted and valued organization in my circle of work. I was one of the first ISU representatives appointed in 1988 as a founding advisory board member for the Center. I served 10 years in that position and have worked closely with Leopold Center staff on issues related to ecology, marketing, food systems, hoop houses and sustainable agriculture as the Iowa Extension Sustainable Agriculture Coordinator.

My initial impressions as Leopold Center interim director are these:

- The Leopold Center has an extremely talented and hard-working staff, with a passionate desire to serve Iowa and Iowans.
- The Leopold Center is a voice for the underserved as well as those who want a greater vision and hope for the future.
- The Leopold Center has a wealth of information with practical applications for Iowa – our farmers, our people and our communities.
- And finally, the Leopold Center has an unquestionable commitment to carry out the intent of the founding legislation that established the Leopold Center and outlined its historic and unique mission.

These traits should resonate well with all Iowans and our namesake, Aldo Leopold.

Jackson brings provocative message to ISU

University of Northern Iowa biology professor Laura Jackson presented a provocative lecture at Iowa State University in October about environmental problems related to the current corn-soybean production system. She discussed how degradation of natural resources has caused a loss of biological diversity and listed obstacles to changing the system.

Jackson's presentation was this year's edition of the annual Shivvers Lecture, which explores ways that agriculture can sustain natural resources and small farms. Presented in memory of John Shivvers who farmed near Knoxville, the series is hosted by the Leopold Center.

Jackson teaches courses in ecology, conservation biology and restoration of agricultural landscapes and since 2003 has represented UNI on the Leopold Center Advisory Board. In 2002, she co-edited a book of essays, *The Farm as Natural Habitat: Reconnecting Food Systems to Ecosystems*, with her mother, Dana L. Jackson, senior program associate for the Land Stewardship Project in Minnesota.

Here are excerpts from the presentation.

About the Iowa landscape

When I moved from Kansas to Iowa in 1993, it was truly shocking to see an ecological sacrifice zone with virtually no native plant or animal species for miles and miles and miles. I am always astounded that I can get on Highway 20 in Cedar Falls and drive west for six hours and not see – with the exception of riparian zones along the rivers – a single patch of native vegetation.

In most areas of the upper Midwest, land in agricultural production is barren for nine months of the year. Because of our corn/soybean rotation, we're looking at a system only collecting solar energy about three months of the year... We're just using a tiny fraction of the energy that comes into our state... and we should be using more of it.

It hasn't always been like this. Between 1860, when we first started plowing down the prairies, until about 1960, we maintained a roughly equal proportion of row crops and sod crops – hay or pasture in rotation with crops, or small grains like oats, barley, wheat and rye that were in the rotation because they were necessary.

Loss of biodiversity

We're seeing a number of losses of species diversity. Notable are the loss of large vertebrates, such as pallid sturgeon and the interior least tern, associated with the Missouri River where they are being affected by hydroelectric dams used for flood control and for channelization.

Grassland nesting songbirds such as the bobolink and western meadowlark ... migrate from Argentina and Central America every year and attempt to nest in the former prairies. At one time they could nest in farmers' hayfields, but today there are so few of those left that their numbers are declining.

Ecosystem restoration

We need to restore the tallgrass prairie ecosystem. That doesn't mean restoring prairie plants but the ecosystem services that prairies provided. We need to reduce soil disturbance and tillage ... No-till has been a benefit, but no-till still has bare dirt and no deep perennial roots for most of the year.

There has been progress in Iowa in developing more perennial systems and options for people. The Leopold Center's grasslands program works with all kinds of approaches and producers who may want to convert a small part of their operation to rotational grazing or some other use of the land.

Obstacles to change

In order for my ecological dreams to work, farm policy needs to change. There's no way it will fix itself.

We need to balance the interest of taxpayers, eaters and farmers, and I believe those taxpayers and eaters and farmers all are wishing for a healthy environment in which to raise their children.

We need to reward clean water, carbon sequestration, biodiversity. These are the multiple benefits that agriculture can provide our society. We also need to make conservation policy performance-based instead of practice-based.

Lessons from Easter Island

Jared Diamond's new book, *Collapse: How Societies Choose to Fail or Succeed*, is pertinent to the questions that we're facing in the Midwest ... [He writes that the] history of ecological failure is that an inordinate amount of energy and precious hu-



Laura Jackson (left) listens to a question about her lecture.

man and natural resources get poured into precisely the wrong thing. The Easter Islanders found a forest of giant palms seven feet across, 60 feet high. By the time they were done, they were cannibals, living in chaos and want.

They were convinced that it was very important to build magnificent statues on massive stone platforms without benefit of cranes or fossil fuel. Their island had the perfect soft stone to do it.

Over time, as various clans competed for dominance on this tiny island, the statues grew in size and people became more adept at moving these 60-foot tall statues nine kilometers across the island on wooden rails. As living conditions were deteriorating and their forests were disappearing, they decided that what they really needed to do was to add red hats – 12,000-pound red stones on top of the statues.

How do we recognize these red hats? How do we recognize the things that we are ceaselessly investing in that are not doing a good job? May I suggest bushels per acre? It's going to be hard to give up on this demanding god that we have pleased so well for so many years.

We need to remember that it is the land and the health of the land that is our true family, our true source of wealth and strength and long-lasting security and support. Aldo Leopold encouraged respect for this web of life, a healthy respect because it's related to our existence.

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A transcript of
Laura Jackson's lecture is at:
[www.leopold.iastate.edu/news/
pastevents/jackson/jackson.htm](http://www.leopold.iastate.edu/news/pastevents/jackson/jackson.htm)



Adapting to Changes

The real question, for anyone truly concerned about our future, is not whether change is going to come, but whether the shift will be peaceful and orderly or chaotic and violent because we waited too long to being planning for it. – Paul Roberts, The End of Oil

It is interesting to note that Pulitzer Prize-winning author Jared Diamond dedicated his recent book, *Collapse: How Societies Choose to Fail or Succeed*, to Montana farmers. In his latest work, he draws some interesting parallels between modern agriculture and the Norse Greenlanders, many of whom starved to death because they insisted on farming the way they always had, despite the fact that everything happening around them suggested that change was imperative.

It is becoming increasingly difficult for us to ignore the fact that we may be entering an era that will force agriculture to change more in the coming decades than it has in the last half century.

The primary driver of this change is likely to be energy. Even major oil companies are now admitting that the days of “easy oil” are over. Whether we have already reached peak global oil production, or will reach it in the next decade, has become a moot point. The fact that world demand for oil is skyrocketing precisely when we are reaching peak oil production further intensifies the problem. As a recent Chevron ad put it: “It took us 125 years to use the first trillion barrels of oil. We will use the next trillion in 30.”

End of fossil fuel era signals change

Simply stated, the fossil fuel era is over. This is bad news for farmers and will require major changes in our farming practices. The industrial agricultural systems that enabled us to produce unimaginable quantities of monoculture crops and livestock are incredibly energy intensive and depend almost entirely on fossil fuel. This affects farmers who face the increasing cost of diesel fuel, and also rising prices for fertilizers, pesticides, irrigation and farm equipment. As oil and natural gas prices explode due to tightening supplies, costs for all essential farm inputs will spiral upward.

The development of alternative energy supplies will not provide farmers with much relief because no currently available supplies can be harvested anywhere near as efficiently as oil and natural gas were during the last half century. According to Marty Bender of The Land Institute, the United States generated approximately 100 units of energy for every unit of energy that was invested in making oil and natural gas available during the 1940s. A recent report indicates that in Saudi Arabia we are still obtaining more than 200 units of energy for every unit invested. However, current supplies of alternative energy including the much heralded bio-fuels have a far lower investment to return ratio, less than 13 to 1. Corn ethanol seems to hover at less than 2 to 1. The sole exception seems to be wind energy generated with new generation Danish turbines that may have more than a 50 to 1 ratio.

At the same time that we will be forced to shift from energy-

intensive to energy-conserving farming systems, other challenges are knocking at the door. Ecological degradation is likely to be a second agent of change. The United Nation’s Ecosystem Assessment Synthesis Report warns us that our polluting and over-exploiting ways must change immediately to preservation and restoration if we are to avoid major ecological collapses.

A third driver of change is likely to be an altered climate. Farm publications now are reporting that the often-predicted unstable climate conditions, which result in more varied and violent weather events, already are being experienced on the nation’s farms. Volatile climate conditions make highly specialized, monoculture farming less viable than it was during recent decades when we experienced relatively stable global climate conditions.

At the same time that this is happening, income from crop and livestock production fails to cover even the cost of production in most farm communities. Farmers need new markets that will provide them with the income necessary to respond to demands for change.

Change requires fundamental shifts

Such changes will require fundamental shifts in how we do things if we want to maintain at least some quality of life. In agriculture, it likely means a shift from

- energy-intensive to knowledge-intensive farming,
- highly specialized monocultures to more diversified, integrated systems based on biological synergies,
- control management to adaptive management, and
- therapeutic technologies to self-regulating and self-renewing natural systems.

When these basic changes become necessary – in agriculture or any other social system – a few visionaries emerge to show us a different way and generally they are marginalized for doing so. Galileo, Darwin, Einstein, Martin Luther King, Jr. and Wes Jackson are far-sighted figures who come to mind.

Such marginalization occurs as an all-too-familiar pattern while the rest of us try to deny that change is happening or cling to the hope that some new technology will rescue us from the need to change. Martin Luther King, Jr. reminded us that this is not about whether a revolution is taking place, the real problem is that too many of us insist on “sleeping through the revolution.”

Unfortunately, the result of such inaction is that change will still come, but as Paul Roberts writes, it is likely to be “chaotic and violent” instead of “peaceful and orderly.” Our challenge will be to realize that change is, indeed, coming and to work together to create the new future.

Finding the links among cows, creeks and conservation

By Laura Miller, Newsletter editor

Technology that helped troops move through southern Iraq during the first Gulf War may help Iowa farmers improve stream quality in rotational grazing systems.

The technology is Geoweb®, a polyethylene mesh developed by a subsidiary of Alcoa and manufactured in Green Bay, Wisconsin. The mesh contains six-inch deep honeycombs that can be filled with gravel — or in the case of southern Iraq, sand — for construction projects including roadbeds, retaining walls and drainage.

Iowa State University animal science professor Jim Russell has adapted the unique mesh product to create stream crossings. The crossings will be used primarily by cattle in pastures near Rhodes in Marshall County as part of a three-year research project that began in 2005 and is supported by grants from the Leopold Center and the Iowa Department of Natural Resources.

Stream crossings can be very important in rotational grazing systems. Cattle are allowed access to water when there is a natural source, eliminating the need to construct expensive water lines, wells and pumping systems. The crossings also must be cost-effective to install and maintain. An ideal crossing would not contribute to soil erosion or water quality problems.

Russell agrees that it might be a tall order, but he's waiting to see how the Geoweb® performs.

"Two days after we started grazing, we had a four-inch rain, which washed out our water gap fences but the crossing held," Russell said. "It will be interesting to see what happens in future years."



Jim Russell (standing in water) explains the crossing at September field day that attracted 75 people.

Two crossings built

Two 80-ft. long by 16-ft. wide crossings (which includes ramps on both sides) extend through Willow Creek, where the stream is about 10 feet wide. In the streambed, a section about 16 ft. wide and 20 ft. long was excavated to a depth of 9 inches. Underneath the Geoweb® is a layer of geofabric, then the web, which is filled with rock to bring the crossing to the level of the streambed. Without the labor, cost for each crossing was about \$4,000.

A bigger question remains over the impact of livestock grazing practices on phosphorus and sediment levels in pasture creeks. The project is aimed at offering an alternative to help beef producers stay within total maximum daily load (TMDL) water quality standards as set by the U.S. Environmental Protection Agency. Although adhering to TMDL level currently is voluntary, the Leopold Center and the Iowa DNR are funding Russell's research to find ways to decrease non-point source pollution and create more effective grazing systems.

"We found in our earlier research that what one producer calls continuous grazing, another calls rotational grazing and yet another calls intensive rotational grazing," he said. "We really needed to see the impact of various grazing systems on the landscape."

Three systems evaluated

The project evaluates three treatments, each replicated twice on 180 acres divided into six 30-acre pastures, all dissected by Willow Creek. The project involves 90 fall-calving cows, with 15 cows assigned to each pasture.

Treatment 1: Continuous grazing; cows have full access to stream.

Treatment 2: Continuous grazing; stream access limited to crossing. Rest of the stream is fenced off as a 110-ft. riparian buffer on each side.

Treatment 3: Intensively-managed rotational grazing in smaller paddocks; cows do not graze in riparian paddock longer than four days or to a grass height

less than four inches (alternative water source also available).

The project takes a number of measurements including streambank erosion and morphology, and observations of animal behavior recorded every 10 minutes for 12 hours on two consecutive days twice a month during the summer grazing season.

First-year observations

Russell offered these early observations:

- "In the early to mid-summer months, when the temperatures were in the high 70s and 80s, cows in the continuous grazing areas with full access to streams spent more time in the stream, but it still was not over 10 percent of the daylight hours."
- "Where cows only had access at crossings, they used the stream for water but that's about all they were doing, even in the shade. We're not sure why, but they may be uncomfortable with the rock or electric fence in the lane."
- "Even on the hottest days in August, cows on all treatments did not spend much time in the stream. They were on top of the hills in the shade, catching the breeze, so wind may play a major role in cattle behavior."

One farmer's perspective

Bruce Carney, who moved to his family's farm near Maxwell in 1996, has worked hard to set up his rotational grazing operation. He maintains a 125-cow herd on 100 acres of permanent pasture and 60 acres that he rents from neighbors. He rotates among a number of paddocks, using techniques he learned in ISU Extension programs, seminars and field days. And he's learned from Russell's project.

"I struggle most with water," he said. "A pasture is no good without water and I'd prefer to use my creeks simply as a back-up."

Drawing on his experience as a construction superintendent, Carney has installed an extensive water system and about eight crossings, built with recycled concrete, 2-ft. culverts and rock.

"My cattle don't spend too much time in the crossing because they don't like the rock," he said. "And so far my crossings are holding up very well."

Learn-as-you-go lessons about cover crops

By LAURA MILLER Newsletter editor

The concept of using cover crops to control weeds and increase soil organic matter and fertility is nothing new, but farm practices lag far behind the existing research.

Two farmers who learned as they used cover crops, also called green manure, shared their perspectives with the Green Land Blue Waters Iowa-based group that is studying long-term changes in the agricultural landscape. The two farmers represent opposite ends of the agricultural spectrum, but have many qualities in common including the flexibility and eagerness to try new ideas.

"There's a definite benefit to cover crops, especially if they're managed properly," said Roger Lansink, who raises organic corn, soybeans, barley, oats, field peas, buckwheat, cattle, sheep and chickens on 850 acres near Odebolt. He began using cover crops about 10 years ago, when he first started to farm organically.

Lansink uses oats, buckwheat and rye as cover crops. More recently he planted two acres of oil radish, a member of the brassica family with a heavy tap root, to break up compaction in heavy bottom ground rather than resorting to chisel plowing.

"It seemed to work pretty well, and we let cattle graze off the top," he said. "It's very difficult to get information about cover crops, but I think we're on the verge of figuring out just what we can do with them. It's very exciting."

Bryan Davis said he was looking at the bottom line when he started using cover

crops about five years ago after relying almost entirely on no-till. He raises mostly corn and soybeans on 900 acres near Grinnell, using oats and rye as cover crops in his biological farming method that includes the addition of trace minerals.

"Compaction was a real problem for us and our yields were dropping in both corn and soybeans," he said. "I was having more erosion in my no-till situations than when I tilled because the soil wasn't getting the water infiltration."

He fall seeds rye, or spring seeds oats, then incorporates with a soil finisher or sprays with Roundup™ when plants are four to 10 inches tall. One pass with a Phillips Rotary Harrow provides adequate soil to seed contact when seeding the cover crops.

"Cover crops brought life back into my soil," Davis said, "and they can act as a form of herbicide and insecticide."

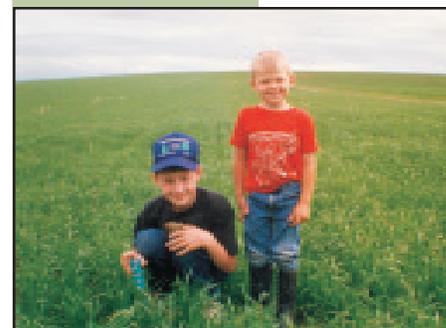
Within five years, Davis said he's increased his soil organic matter by from 2 percent to 4.5 percent, reduced nitrogen and herbicide inputs and maintained high yields. Last year on one 120-acre field he averaged 184 bushels/acre yield for corn while maintaining a break-even cost of \$1.28/bushel, using just 16 pounds of applied nitrogen.

Davis said peer pressure can be a problem, "but you can't let it bother you."

Lansink agreed, adding that cover crops allowed him to raise products organically and increase soil organic matter by a full percentage point in just four years.



Bryan Davis (above) plows down rye before planting in the spring.



Roger Lansink's children (then 8 and 3 years old) stand in oats that grew to a height of 8 inches before plow down.

Green Lands Blue Waters launches new Iowa learning group

The use of cover crops was the first topic of a new Iowa stakeholder committee involved in the Green Lands Blue Waters IOWA effort (GLBW IOWA). This group is part of a long-term program whose mission is to support development of and transition to a new generation of agricultural systems in the Mississippi River Basin that integrates more perennial plants and other continuous living cover into the agricultural landscape.

Members of the committee have allotted a year to learn more about the kinds of practices and opportunities that exist for Iowa farmers to transition

to the kinds of agricultural systems proposed in the Green Lands Blue Waters vision. The committee meets quarterly, visiting with farmers and researchers about practices, barriers and opportunities. Coordinator is environmental consultant Del Christensen.

Members of the learning committee include representatives from ISU, the Leopold Center, Practical Farmers of Iowa, Iowa Farm Bureau Federation, ISU Extension and Extension to Value Added Agriculture, the Women, Food and Agriculture Network, Iowa Environmental Council, Des Moines Water Works, Trees Forever, The Nature Conservancy, Iowa Natural

Heritage Foundation, ISU Research Farms, Iowa Soybean Association, Prairie Rivers RC&D, USDA/NRCS, the Iowa Departments of Agriculture and Land Stewardship and Natural Resources, University of Northern Iowa, Water for Iowans and numerous individual farmers.

The Leopold Center Ecology Initiative supports GLBW IOWA efforts through federal funds received for this purpose. These funds also support a half-time coordinator for the regional consortium, an evaluator, and a number of research projects on topics such as double-cropping field peas, living mulch and winter grazing.

Grape expectations for expanding industry

When the Leopold Center first looked at the potential for developing the state's grape industry in 2000, Iowa had only 30 grape-producing acres, two vineyards and nine bonded wineries. There are now more than 275 vineyards on 600 acres, 53 wineries, and the numbers are increasing every day.

Two factors have spurred this growth: the production of grapes and wine can provide landowners with an additional source of income, and this enterprise appeals to small landowners. To encourage the use of sustainable methods, the Leopold Center has supported research on grape cultivars suited to Iowa growing conditions and best management practices for organic production. Other grants have been used to develop new marketing and educational materials.

The Center's latest grape-centered investment has fueled a new enology program operated by Iowa State University Extension. The Leopold Center is providing \$75,000 over three years to support ISU Extension's new enologist, Murli Dharmadhikari. A wine-making specialist, Dharmadhikari joined the ISU staff in July 2005. His charge is to educate Iowans about all aspects of winemaking.

The new enologist will work with Iowa's

grape growers, wine producers and other stakeholders including the Iowa Department of Agriculture and Land Stewardship, to find ways to improve and expand Iowa's wine industry. Currently only 11,000 gallons of the 2.9 million gallons of wine consumed by Iowans each year come from wineries in the state.

Dharmadhikari came to the United States from India in 1968 to study grape growing. In 1972, he received a doctorate in wine nutrition from Ohio State University. While he worked at a grape juice processing plant, he helped establish wineries in Ohio and Indiana. In 1986, he started a wine advisory service at Southwest Missouri State University.

Other partners in Iowa State's new enology program are ISU Extension and the College of Agriculture.

Also doing grape-centered work with Leopold Center support is the Agricultural Marketing Resource Center (AgMRC) at Iowa State University. The AgMRC developed two major resources for people interested in growing grapes or making wine: a four-part online video series and two interactive financial feasibility workbooks.

The online video series, "The Total Wine Package," explores the opportunities connected with growing grapes and making wine, a behind-the-scenes look at the sci-

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Videos and workbooks on the AgMRC web site: www.agmrc.org/agmrc/commodity/fruits/wine/wineryfeasibility.htm
Results of other Leopold Center grape-centered research: <http://viticulture.hort.iastate.edu/home.html>

ence of enology, and selling a total wine experience. The videos have been streamed to download quickly at various connection speeds.

The workbooks, also online, look at costs for establishment of a vineyard and long-term expenses for grape production.

- *The Ten-Year Winery Financial Planning Workbook* can be used for any size winery. The program is flexible when it comes to options for sources of capital, equipment, marketing, staffing, fixed and variable expenses and sales projections. Reports include an asset and depreciation schedule, a two-year monthly cash flow, a 10-year cash flow, income statements and balance sheets with a percentage analysis.
- *The Cost to Establish a Vineyard Workbook* is designed to report all income and expenses of a one-acre vineyard for up to 13 years. There are three different vineyard workbooks, each for a different trellis style.

Grapes, once an Iowa cash crop

Few Iowans realize that the state was once a major grape-growing region.

The 1900 U.S. Agricultural Census showed that Iowa produced 7.4 million pounds of grapes and more than 76,000 gallons of farm-processed wine. In Iowa County, grapes could be found growing along the sides of houses and in communal gardens in the Amana Colonies. Each family maintained designated rows of grapes and Amana wine was distributed by "punchable" tickets — 20 gallons a year for men, 12 for women.

The Council Bluffs Grape Growers Association organized in 1893 and by 1926 handled 1,400 tons of grapes produced on 400 acres. The bulk of the harvest was shipped to Colorado, Nebraska, and South Dakota, although

Council Bluffs area growers also operated a winery and juice processing facility.

Iowa was sixth in grape production in 1919 with more than 12 million pounds. Linn, Pottawattamie and Polk counties produced approximately one-third of the state's grapes. Most of the vineyards were near Cedar Rapids, Council Bluffs and Des Moines.

Iowa production peaked in 1929, yielding 15.8 million pounds. As the state's major crop focus shifted to the production of corn and soybeans in the 1930s and 1940s, grape production decreased. By the late 1940s, drift of the corn herbicide 2,4-D caused considerable damage to remaining vineyards and was a key factor in the decline of the grape industry in Iowa and other Midwestern states.

Below, September 2005 harvest at Kirkland Vineyard near Norwalk.



Source: *Grape expectations: A food system perspective on developing the Iowa grape industry*, by Rich Pirog, April 2000, Leopold Center for Sustainable Agriculture. More copies of this publication have been printed and distributed than any other publication at the Leopold Center.

New web tool explores potential produce markets

By RICH PIROG *Marketing and Food Systems Initiative leader*

The Iowa Produce Market Potential Calculator is part of a new generation of market tools being developed with support and technical assistance by the Leopold Center. These marketing aids have a variety of uses, and build upon the knowledge we've gained over the past eight years of supporting local and regional food system projects. Here are a few ways that this unique tool can be used.

A market discovery tool for producers

An Iowa farmer interested in local and regional fresh produce markets can use the Iowa Produce Market Potential Calculator to explore new or expand existing markets. With information from the Calculator, a farmer can see the relative demand for 37 different fresh produce items, either for particular counties or the entire state.

For example, it's easy to use the calculator to see that Iowa farmers supply only 1 percent of the state's consumption of fresh broccoli. Armed with this information, a farmer can adjust yield, acreage or market share to get information that he or she needs to develop a marketing plan.

A tool for partners across the fresh produce value chain

Many tools developed by researchers and educators are designed for only one sector of the food value chain. However, the Iowa Produce Market Potential Calculator can be beneficial for producers, processors, distributors and retailer partners across the chain. Its output can help these partners with production, supply management, transportation/logistics and market potential questions.

Specific examples include estimations of the potential farm revenue for a specific crop, the number of acres needed to supply demand, the number and size of trucks needed for transport to meet demand, and the amount of cubic feet of warehouse space. Given the opportunity, the calculator also could be used by non-governmental organizations and other public sector partners to provide more information across local and regional produce value chains.

As an economic development tool for local/regional food groups

What we've learned from Leopold Cen-

ter food system projects is that in order for local and regional food enterprises to succeed, they need strategic support at the state and community levels. Significant community and state-based incentives and resources must be in place to attract entrepreneurs and transitioning farmers to start and stay with these food enterprises.

Although the general benefits of local and regional food systems have been articulated by many, there is a lack of information about how these enterprises can impact local and regional economies. Using the Iowa Produce Market Potential Calculator is one approach that can help farmers and local groups, including state food policy councils, more effectively make the case for local and state investment in these enterprises.

As a tool to model economic impacts of local food systems

What would happen to Iowa's economy if Iowans raised, rather than imported, just 25 percent of the 37 different fruits and vegetables that are consumed in Iowa each year?

Let's assume that instead of marketing these fruits and vegetables through existing grocery outlets, Iowa farmers were able to offer these produce items for direct sale. Under this scenario, Iowa grocery chains would lose some of their retail margins since they would not sell the same volume of fresh produce. And the number of farms engaged in fruit and vegetable production would need to increase, as would all of the labor necessary for the production. A percentage of land currently used for conventional crops (primarily corn and soybeans) would need to be planted in fruit and vegetable crops.

ISU economist Dave Swenson worked with the Regional Food Systems Working Group to consider the impact of this hypothetical scenario on Iowa's economy. By netting out the changes outlined above, Swenson was able to get a good idea of the potential contributions under this scenario.

Using supply and demand data from the Iowa Produce Market Potential Calculator, in conjunction with a modified state of Iowa input-output model maintained in the Department of Economics at ISU, Swenson modeled the potential economic impacts of these shifts in production and distribution. If the 25 percent goal were achieved, he estimated that total new sales

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Find the Iowa Produce Market Potential Calculator at:
www.leopold.iastate.edu/research/calculator/home.htm

in Iowa would increase by nearly \$140 million, and \$52.4 million in additional labor income would be paid to 2,030 job holders.

While this scenario is purely hypothetical and created for discussion purposes, it shows some of the dramatic impacts that changes in our food production system could have at the Iowa level. This is just one of many reasons that the Iowa Produce Market Potential Calculator is a powerful resource to add to our tool kit.

About the calculator

The Iowa Produce Market Potential Calculator was developed by the Center for Transportation Research and Education (CTRE) at Iowa State University and the Leopold Center.

The calculator displays an Iowa map that shows both statewide and county-by-county supply and demand for each of the 37 fruit and vegetable crops that can be grown in Iowa. Crops include tree fruits such as apples, pears and plums, several types of berries, melons, garlic, and a variety of vegetables such as asparagus, carrots, cabbage, green beans, potatoes, pumpkins, squash, sweet corn and tomatoes.

Supply – where and how much of a certain crop is grown in Iowa – is based on information from the U.S. Census of Agriculture. Demand – or what Iowans eat – is based on national per capita consumption data.

The calculator can show results in a variety of weight-based units: pounds, bushels, even by one-ton, 10-ton or 20-ton truck loads. It also figures potential farm revenues that would accrue if the local markets were fully realized.

The tool has generated much interest and numerous requests from people who want to duplicate the model in other states.

News & Notes

A new group addressing the possibilities of flax production in Iowa is forming under the Value Chain Partnerships for a Sustainable Agriculture (VCPSA) project. Over the past two years, ISU Extension specialists have been working with Iowa producers to grow and market flax. Their experiences will generate the information needed to support a new, more profitable crop for rotations. The primary market is for organic flaxseed oil, which is high in Omega-three fatty acids. The new group will bring together producers, processors, nonprofit groups and higher education agencies to support development of this potential market. For more information, contact Andrew Hug at the Leopold Center, (515) 294-8530, ahug@iastate.edu. Also leading the effort are Robert Karp on behalf of Practical Farmers of Iowa, and Margaret Smith and Rick Exner from ISU Extension.

Three new Iowa State University graduate students are getting practical experience in business as well as sustainable agriculture. Andrea Spiker and Scott Kincaid of Ames and Kory Beidler of Ankeny are enrolled in the ISU College of Business MBA program with a minor in sustainable agriculture, the only graduate-level program of its kind in the nation. All have assistantships with the Value Chain Partnerships for a Sustainable Agriculture (VCPSA) program coordinated by the Leopold Center. Kincaid is helping the

project's BioEconomy Working Group, Beidler is assisting the Regional Food Systems Working Group, and Spiker is working with the new flaxseed group. A second-year student in the program, Erik Schneider of Fairport, is involved with the Pork Niche Market Working Group.

Leopold Center-funded research is included in a new publication from Iowa State University Extension, *Feeding Small Grains to Swine*, PM 1994. The publication covers barley, oats, rye, triticale and wheat, with separate sections on nutrient composition, use as bedding, and challenges. The publication is available on the web: www.extension.iastate.edu/Publications/PM1994.pdf, or by contacting Mark Honeyman, (515) 294-4621.

A group of Iowa State University researchers that began its work as the Leopold Center Agroecology Issue Team was honored with a national award. The team was profiled during an August 2005 White House Conference on Cooperative Conservation in St. Louis, Missouri. Team members received certificates for their leadership during a tour of the Bear Creek National Research and Buffer Site that was part of the Trees Forever annual meeting. The team's 16-year effort to identify native perennial plant communities for riparian management helped the USDA Natural Resources Conservation Service develop national buffer standards. The effort also

provided the foundation for the Iowa Buffer Initiative.

ISU team members include Dick Schultz, Joe Colletti, Tom Isenhardt, Steve Jungst and Tim Stewart, Natural Resource Ecology and Management; Bill Simpkins, Geology and Atmospheric Sciences; Jim Russell, Animal Science; Jim Raich, Ecology, Evolution and Organismal Biology; Mark Tomer, Cindy Cambardella, Tim Parkin and John Kovar, National Soil Tilth Laboratory; and visiting scientists Jim Kie Yeo, South Korea; and Miguel Pietrangeli, Venezuela.

The Leopold Center is a key financial partner in the 2006 Grow Your Small Market Farm course taught by Penny Brown Huber through the Iowa State University Small Business Development Center. The class is open to 25 producers who farm 50 acres or less and are interested in direct marketing. Classes will meet weekly in Des Moines January 21 to April 15. For more information, contact Huber at (515) 232-1344, BrownPennyL@aol.com.

The Leopold Center is a principal partner in a grant (now in its second year) from the W.K. Kellogg Foundation to establish a multi-state stakeholder network of organizations and agencies working on long-term water quality projects in the Mississippi River basin. The project is administered by the Mississippi River Basin Alliance (MRBA) headquartered in Minneapolis, Minnesota. In addition to the Leopold Center, a third key partner in the new stakeholder network is the Institute for Agriculture and Trade Policy, also based in Minneapolis.

This network was created to enable more effective collaboration and leveraging of actions and resources among organizations basin-wide as they work to improve water quality and ecological health and reduce hypoxia levels in the Gulf of Mexico. Project activities include surveying and mapping of nutrient management efforts at all scales throughout the basin, focusing initially on 10 states that border the main channel; and development of an interactive web site.

Consultant surveys possible Policy Initiative work

Doug O'Brien, a senior staff attorney at the Drake University Agricultural Law Center, is working with the Leopold Center to determine the next steps for the Center's Policy Initiative. Policy work had been managed by the Center's half-time associate director, Mike Duffy, who left in July 2005 to return to the ISU economics department fulltime. Four policy proposals also are being considered for 2006 funding, based on submissions to the Center's Request for Proposals (RFP) in July.

O'Brien was chosen following board and staff discussions that resulted in the decision to hire a consultant with broad-based policy experience to map out possible di-

rections for this initiative. He has been conducting interviews with board members, stakeholders and policy experts, and doing research on policy needs and constraints for the Center. He plans to submit a report to the Center advisory board and staff in the near future, with suggestions and recommendations for the possible activities for the Policy Initiative.

In addition to his work at Drake, O'Brien is associated with the National Agricultural Law Center at the University of Arkansas Law School and teaches classes at both law schools. He previously was counsel to the U. S. Senate Agriculture Committee.

Spencer Award strikes right note

Organic dairy farmer Francis Thicke of Fairfield said it best when he introduced Jerry DeWitt as the recipient of the 2005 Spencer Award for Sustainable Agriculture: “He always puts farmers first.”

It was fitting, then, that an award honoring long-time Woodbury County farmer Norman Spencer was presented in front of an audience that included many farmers – those attending the November 14 Iowa Organic conference in Ames. In fact, it was a 1995 meeting between farmers and administrators – one that DeWitt arranged – that led to ISU launching its organic agriculture program long before other land grant universities.

“Jerry DeWitt talked about sustainable agriculture when it was a difficult thing to do,” Thicke said. “Fifteen years ago when I was working at USDA in Washington, D.C., and, even though I had never lived in Iowa, I was aware of Jerry’s leadership in this area. Even now when I travel, people are jealous of what we have at ISU.”

It’s also the leadership that Norman Spencer’s children had in mind when they established the award in 2001. Elaine Spencer, an attorney from Seattle, Washington, and her brother Bob, who owns a small animal clinic in LaCrosse, Wisconsin, attended the 2005 award presentation and shared some memories of their father.

“Decades before the term ‘organic’ referred to a kind of food, our father raised his turkeys with less antibiotics, and grew his corn with less nitrogen inputs and herbicides than other farmers,” Elaine Spencer told the group. “He did it for two reasons – because he believed it was smarter, more cost effective, profitable commercial agriculture, and because he believed that it was the duty of each generation to leave the land more productive than they found it.”

She said her father also had a lifelong relationship with Iowa State University – probably attending “every extension short course on agronomy or animal husbandry given over a 30-year pe-



Speakers at the 2005 Spencer Award presentation: (front row, left): Elaine Spencer, Jerry DeWitt; (back row, left): Francis Thicke, Fred Kirschenmann, Tom Fogarty and Bob Spencer.

riod.” But, she said, he also saw that partnership as key to success.

“From what I am told, Jerry DeWitt’s career has been devoted to making that sort of relationship between the most forward thinking farmers of Iowa and the most forward thinking researchers and scientists and teachers of Iowa State University a partnership to lead sustainable agriculture into the 21st Century,” she added.

She went on to say that she was concerned that sustainable agriculture needed to be more than just saving the family farm. Continuing to produce abundant food is important, and to do that requires “the smartest thinkers of the university and the smartest thinkers among Iowa farmers.”

DeWitt said his life was changed after he met “forward thinking farmer” Dick Thompson of Boone.

Thompson, however, isn’t a contender for the Spencer Award, which includes a \$1,000 stipend. He received the award in 2004.

Agriculture of the Middle project launches nationwide effort

The Leopold Center’s Agriculture of the Middle task force organized by Fred Kirschenmann and a U.S. Department of Agriculture initiative launched in 2003 by California extension leader Larry Yee have united to form a new organization, the Association of Family Farms (AFF).

The new group has a 20-member organizing committee and an ambitious slate of projects. While they wait for by-laws to be approved, the group has launched a web site and developed a brochure that outlines their solution to what members see as a huge problem under the current agricultural production system: loss of midsize family farms.

Kirschenmann said the new association’s goal is to create opportunities and markets for midsize operations with special emphasis on farms with gross annual sales between \$50,000 and \$500,000. A nonprofit branch is being formed to develop standards

and to adapt an electronic certification system currently used in Europe. A for-profit group has started work on a national branding campaign.

The national effort is

closely linked to work being done in Iowa by the Leopold Center, Kirschenmann explained. “Our on-the-ground research in the Marketing and Food Systems Initiative helps support the national effort, which in turn, is working to create larger markets that Iowa farmers, such as those involved in the Pork Niche Market Working Group, can plug into,” he said. “If we only look at markets that we develop in Iowa, it’s not going to work. Companies like SYSCO can’t get a sufficient supply of such differentiated products if we limit ourselves to Iowa.”

Rather than supplying commodities, farmers will produce highly differentiated products that are tied to point of origin, sustainable production practices and absence of genetic engineering, antibiotics and growth hormones. Also key is the value chain – producers, processors, distributors and retailers who share core values of sustainability, transparency, fair distribution of profit, high quality product and relationships with the consumer.

To organize its efforts, the association received grants from several foundations including the W.K. Kellogg Foundation, Farm Foundation and Johnson Foundation, and an organic pet food company, Pet Promise, Inc., as well as SYSCO, Inc., North America’s largest distributor for restaurants and food services. The Leopold Center has contributed Kirschenmann’s time and travel expenses to attend meetings.

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Association of Family Farms:
www.associationoffamilyfarms.org
Agriculture of the Middle:
www.agofthemiddle.org



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FOR SUSTAINABLE AGRICULTURE
209 CURTIS HALL
IOWA STATE UNIVERSITY
AMES, IOWA 50011-1090

Looking for markets?

The Leopold Center and Iowa State University are sponsoring workshops for producers interested in learning how to market their products to food service suppliers and retailers.

“Bridging the Gap” workshops will be held on these dates:

- March 7, Fairfield,
- March 8, Atlantic,
- March 9, Sergeant Bluff, and
- March 10, Waterloo.

Producers will learn how to enter into sales agreements with food service distributors, grocery distributors and convenience store food distributors.

Pre-registration is preferred by calling ISU Extension’s Value Added Agriculture Program at (515) 294-0588, or printing and filling out an online registration form [go to the calendar link at www.agmrc.org]. Cost is \$25, or \$30 at the door, which includes lunch, breaks and materials.

Highlight Events

Grass-based workshop will be January 13

The Leopold Center’s Grassland Agriculture program will host a presentation by a national leader in the production and marketing of grass-finished beef for an afternoon workshop January 13 in Des Moines.

The workshop, “Tune-up for Grass-Based Production and Marketing,” is part of the 2006 Practical Farmers of Iowa winter conference and workshop program. The Friday workshop is scheduled for 12:30 to 4:30 p.m. at the Airport Holiday Inn, Des Moines.

Featured speaker is Allen Williams, livestock consultant and former livestock genetics and reproduction extension specialist at Mississippi State University. Williams is an expert in forage-efficient genetics and ultrasound technology to gauge tenderness and quality. Currently, he is working with several farmer networks to set up marketing alliances for grass-finished beef. Williams also is on the leadership team for the Association of Family Farms.

Cost of the workshop is \$25 (with a \$5 discount for PFI members). For registration information, contact Julie Carlson at PFI, (515) 232-5661 ext 101, or Julie@practicalfarmers.org.



Snowy weather didn’t keep people away from the marketing workshop in December (see page 1). Participants discuss issues between sessions.