

Letter

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Linking Food to People

Local food system projects build community

By Rich Pirog
Education coordinator

The Community Supported Agriculture (CSA) model, where food producers and consumers work together to create a local food system, is growing in Iowa. Three CSA projects began in 1995; today Iowa has more than 35 CSAs.

Iowans are increasingly interested in seeing local farmers not only add value to their products but develop connections with institutions that provide the locally grown food to students, employees, customers or patients.

This article reports on three recent Leopold Center-supported efforts to encourage Iowa food producer and consumer relationships.

Field to Family Community Food Project

The Field to Family Community Food Project is an outgrowth of the Magic Beanstalk CSA effort initiated in 1995 with the help of the Kellogg Foundation-funded Shared Visions program. The CSA's purpose is to make locally grown food and fiber products available to residents in the Ames area through subscription.

Two years later, Magic Beanstalk members began the Field to Family project with these goals: to use CSA farms and distribution sites to provide more extensive food-system education and farming activities to children and families; to offer low-income families access to fresh, locally grown foods; to



Volunteers help with potato harvest at Onion Creek Farm, one of the vegetable-producing farms of Magic Beanstalk CSA. (Photo courtesy Magic Beanstalk CSA)

provide nutritional education and hands-on cooking classes to the community; and to sponsor community building events such as seasonal festivals and meals that foster appreciation and understanding for sustainable agriculture. Field to Family pursued these goals by building partnerships

with local churches, social service groups, and education organizations.

In 1997, Field to Family helped Magic Beanstalk evolve from a home-food delivery operation to a central distribution site in Ames. This encouraged greater interaction among consumers and growers and made it easier for people to order products from Magic Beanstalk. With support from the Leopold Center, the Kellogg Foundation-sponsored Vision 2020 project, and several area churches, Field to Family helped 17 low-income families join Magic Beanstalk CSA. In addition, Field to Family sponsored a monthly cooking group, led by two

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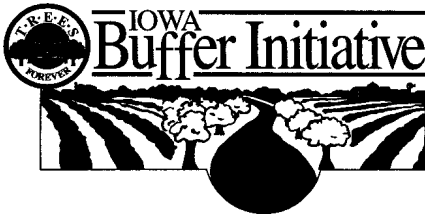
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Long-term teamwork leads to Iowa Buffer Initiative

The work of the Leopold Center's Agroecology Issue team, led by ISU forestry professor Dick Schultz, has galvanized a host of local and national, public and private organizations to work toward a common goal: water quality protection through the installation of vegetative buffer systems along Iowa waterways.



Key sponsoring partners of the \$1 million-plus Iowa Buffer Initiative include Novartis Crop Protection, Inc., Iowa Farm Bureau Federation, Iowa Department of Natural Resources, the U.S. Environmental Protection Agency, and the Natural Resources Conservation Service. This first-of-a-kind program will promote water quality by reducing soil erosion, enhancing landscapes, and providing wildlife habitat.

Trees Forever, a nonprofit group whose mission is to facilitate the planting and care of trees, woodlands, and forests through programs that build community and promote environmental awareness, will coordinate the program.

The original riparian buffer system developed by Schultz's team consists of zones of native grasses, shrubs, and trees strategically planted along waterways. The first such system was established in Iowa in 1990 along Bear Creek in Story County; since then, a total of nine landowners have invested in buffer technology on ten farms along the creek.

This technology will now be demonstrated at 20 riparian (river or stream) sites across Iowa annually for the next five years. The nationwide model will also establish technical assistance networks that will support landowners, establish shelterbelts as

buffers around livestock confinement operations, formally recognize landowners who protect streams and waterways with grass/tree buffers, and use field days to increase awareness among farmers, landowners, and youth about the value of such buffers.

Plant species used in the system include ash, cottonwood, willow, silver maple, oak, and walnut trees; ninebark, dogwood, chokecherry, nannyberry, and high-bush cranberry bushes; and big bluestem, Indian grass, switchgrass, and native forbs. This system slows water runoff, traps sediment, and enhances water infiltration in the buffer itself. In the process it traps nutrients and pesticides that are then biologically and physically modified to minimize the chances of pollutants reaching surface and groundwater sources.

The buffers have also been a boon to wildlife, with bird species diversity

increasing nearly five-fold within the buffer strip compared to an adjacent, unprotected stretch of stream.

According to Schultz, "The Leopold Center showed vision by supporting a project that initially had difficulty attracting monetary support. Now a national showcase for riparian buffers, the site exemplifies the value of interdisciplinary research.

"At present, ten scientists, nine landowners, ten resource professionals, and twelve graduate students are working on the project. Major credit also goes to Ron Risdal, who took a chance by letting this team transform his farm into a site that has now hosted visitors from across the United States and more than 30 nations."

Riparian buffers can play an important role in making the agricultural landscape sustainable in the next

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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.

Editor: Elizabeth Weber



Sustainable agriculture: a quiet evolution

Some changes in the Iowa countryside are not readily apparent to the casual observer. These changes not only promote environmental stewardship; they offer economic opportunities for smaller farms and rural communities. They are part of an evolution toward a more sustainable agriculture.

Two of these developments—buffer strips for environmental protection along streams, and swine-production technologies using hooped house, deep bedding systems—are Leopold Center efforts.

The buffer strip program started in 1990 with one of the Center's first interdisciplinary research issue teams. ISU forester Richard Schultz and ISU animal ecologist Bruce Menzel, along with other faculty, farmers, students, conservationists, and Ron Risdal, a very cooperative landowner, began restoring a section of Bear Creek, a badly eroded waterway between Story City and Roland in central Iowa. They planted grasses, shrubs, and fast growing tree species such as willows, established a wetland, and let nature progress. There has been a spectacular improvement in the landscape and perhaps more importantly in the water quality of the creek, as a result of reduced soil erosion and nutrient and pesticide runoff to the stream.

The team has quantified water quality improvements as well as other benefits and costs of the system. Over time, other landowners along the creek joined the effort; now, much of the creek is protected by a buffer system. This project has become a showcase for Iowa and the upper Midwest. Government sponsors have included the Iowa Departments of Natural Resources and Agriculture and Land Stewardship, U.S. Environmental Protection Agency Region 7, and the Natural Resources

Conservation Service (NRCS).

Nonprofit groups have also pitched in. Trees Forever, Pheasants Forever, and several other groups have supported the work and provided publicity. The site has drawn more visitors than any other Leopold Center field demonstration project. Now, in combination with the NRCS, Novartis Crop Protection, Inc., and the Iowa Farm Bureau Federation, Trees Forever is using the site as the model for a statewide Iowa Buffer Initiative (see story at left). The first of its kind in the nation, this program places Iowa at the forefront of streambank protection via buffer strips.

It is my hope that as this work evolves, eroded streams will come to be regarded as eyesores, with peer pressure rather than government edict bringing about landscape and water quality changes.

Somewhat more recent in its evolution is the hooped house system for swine



production that is currently gaining popularity in Iowa. A hooped house is a simple, lower-cost, versatile structure consisting of metal hoops embedded in a cement side frame covered with a polyethylene fabric tarpaulin.

It has open ends (which can be closed) and a dirt floor and is usually oriented north to south to take advantage of cooling summer breezes. Hoop houses are usually 30 by 60 feet,

but some are wider and longer. Hoop houses can also be used for hay or machinery storage.

Bedding is of key importance in these systems, with most farmers using baled cornstalks. The pigs are fed to market weight in the hoop structure, then bedding is typically removed and replaced. The removed bedding, which is intermixed with pig manure, is allowed to compost further.

Manure disposal problems are minimized, as are odors. The compost is easily stored and spread where needed. Some hog farmers whose operations have more fertility than needed are trading the composted manure to neighbors in return for cornstalks.

As farmers gain experience with hoops, they find rate of gain and feed efficiency to be comparable to confinement units. Added to this are the lower capital costs of the hooped structure, the more open, safer worker environment inside the house, and the virtual lack of environmental problems if the system is properly managed. Because pigs can move freely within the hoop, behavioral problems are minimized.

The hoop structures, which came out of Canada, were virtually unknown to Iowa four years ago. Then, ISU animal scientist Mark Honeyman and others began to focus on this alternative system. In February 1996, the Leopold Center sponsored an extremely well-received producer/researcher conference to examine the viability of this and other swine-raising alternatives. Now there are more than 1,000 hooped structures on Iowa farms, and more are going up each day. Already, an estimated 3 percent of Iowa's hogs are being raised in hooped systems. Enough hoops have

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professional nutritionists, to teach members more about how to cook with fresh, locally grown grains and vegetables. The program also sponsored educational food system activities for children and families.

“This project addresses the deeper issue of disconnection—from other people, from our food and where it is grown, and from nature—which I think is felt by everyone more and more these days,” says Robert Karp, co-director of the Field to Family Project.

“Instead of just being given a food hand-out, low-income families are invited to participate in a community process which supports local farmers,” he adds. Karp reports that Field to Family allows diverse groups of people to come together to create a bigger picture of what a healthy community can really be. Existing Field to Family partnerships link such groups as Mid-Iowa Community Action, Practical Farmers of Iowa, the Lutheran Rural Institute, People Place of Ames, and Iowa State University Extension.

In December 1997, Field to Family joined with the Iowa Network for Community Agriculture and other groups to sponsor “Farms and Communities in Partnership,” a food systems conference supported by the Leopold Center and held at the Scheman Building in Ames. This meeting, attended by more than 100 producers, researchers, consumers, retailers, and restaurateurs, allowed existing Iowa groups interested in local food systems to network and explore future cooperative efforts.

Field to Family worked with the Scheman food service staff to offer a complete locally grown menu, an idea that was first implemented at Scheman for the Leopold Center Anniversary Conference in July 1997. (The

facility’s food service personnel are now exploring the possibility of making locally grown food a regular menu choice for the conference center’s clients.)

The Field to Family Community Food project will expand its efforts in 1998, thanks to a \$135,600 Community Food Project grant from the U.S. Department of Agriculture. The grant, to be administered by Practical Farmers of Iowa, will allow project members to further develop local food systems by increasing partnerships with churches, institutions, social service organizations and businesses; creating and expanding markets for locally produced foods; helping producers develop growing, marketing and business skills; and acting as a catalyst to develop new CSAs and other local food system projects.

“This new USDA grant will provide an opportunity to demonstrate the positive impact local food projects can have on a community—both socially and economically,” says Karp. “We hope the project will provide models and lessons to promote more local food systems and greater food security across the state.”

Audubon County Family Farms

Several Audubon County producers, including Ted and Donna Bauer and Vic and Cindy Madsen, believed that consumers would be interested in high-quality, locally produced and processed foods that could be marketed directly from grower to consumer. Audubon County is known for its livestock farms and has state-inspected lockers for meat and poultry—strong assets in making direct marketing of meat products a reality. Cindy Madsen had directly marketed chickens for several years and knew there was a market for fresh poultry.

With assistance from the Iowa Department of Economic Development, the project attracted other area producers with direct-marketing experience. Subsequent brainstorming meetings and discussions led to the formation of Audubon County Family Farms. Backed by the Leopold Center, the group began participating in the Des Moines farmers’ markets in 1997, selling meat, honey, flowers, fruits and vegetables raised and processed by sustainable methods.

“Relationship marketing”—networking and developing trust with customers at the farmers’ market and in other transactions—has been important in building the reputation of Audubon County Family Farms. “We’re trying to build our reputation pork chop by pork chop, or with whatever locally grown product we sell at the market,” says Donna Bauer, coordinator for the project. “We invite our Des Moines farmers’

Connie Tjelmeland explains pasture-raised (free-range) poultry as part of a Field to Family tour of producer farms. (Photo courtesy Magic Beanstalk CSA)





market customers to come to Audubon on weekends, visit our farms and towns, and get to know us. We want to give them a chance to experience life in rural Iowa.”

Audubon County Family Farms is developing a customer database, and is considering doing a quarterly newsletter and a summer harvest festival. The group is involved in the Audubon farmers’ market, and it plans to pursue opportunities at other area farmers’ markets. Bauer and other group members have shared information about the project at workshops and meetings, including the December Leopold Center-sponsored food systems conference in Ames.

To succeed in the long term, Audubon County Family Farms realizes that relationships need to be built not only with the consumer but among group members. “There is a real cooperative spirit with our group,” says Bauer. “We enjoy having the chance to work together, to be part of something that benefits our families and the community.”

The group is working hard to show that diversified family farms still have an important place in Iowa. “We want to bust the paradigm that the only way a family farm in rural Iowa can make it is to have an off-farm job,” says Vic Madsen, who raises hogs. “We need to really prove it to ourselves just as much as proving to others that it will work.”

Food System Pathways at UNI and Allen Hospital

How do large institutions such as University of Northern Iowa (UNI) and Allen Hospital, both in Black Hawk County, make their food purchasing decisions? If locally grown and pro-

cessed foods were available, would their quality and cost attract the institution’s food buyers and caterers? These are just a few of the questions asked by Kamyar Enshayan, natural sciences adjunct assistant professor at UNI and leader of a three-year Leopold Center-funded project. The project’s objectives are to identify food systems that enable UNI and Allen Hospital food buyers to invest their food dollars in Iowa; support Iowa farmers, processors, and distributors; and document the obstacles preventing the establishment of those systems.

Enshayan and project assistants are learning how food service decision makers at UNI and Allen Hospital operate, what their food and client needs are, and how they make food purchases. Enshayan brought in Gary Valen, former Dean of Students at Hendrix College of Arkansas, who had helped direct a local food project for the college and developed a local food project guide for institutions, to visit with key food service personnel at both UNI and Allen Hospital.

“What we have discovered so far is that we have to build relationships,” says Enshayan. “It is important that we first understand the issues and concerns employees of UNI and Allen Hospital have in developing local food systems. We can’t do this overnight; in fact we learned that at Hendrix College it took three to four years to really get things going.” Enshayan has facilitated grower–food buyer and caterer–food buyer discussions. He has talked with the manager of a local meat locker, and he plans to link more local producers with food buyers.

One success related to the project has been the switch to locally grown chickens and tomatoes at Rudy’s Tacos, a Waterloo restaurant. Enshayan put the owner of Rudy’s in touch

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Garth Kelly, Magic Beanstalk volunteer, assists a member at an Ames distribution site. (Photo courtesy Magic Beanstalk CSA)



Study of Iowa cropping practices pro...

Michael Duffy
Extension economist
Associate director



Crop production practices in Iowa change so rapidly that ascertaining current practices is difficult. But to set goals consistent with a more sustainable agriculture, producers must be aware of trends. To obtain a snapshot assessment of

such trends, a 1996 cropping practices survey randomly selected farmers and collected data for 227 fields with corn following corn, 695 corn-following-soybean fields, and 868 soybean-after-corn fields.

Machinery operations

The number of trips across the field varied considerably by crop and farmer. The average number of trips for continuous corn fields was 8.6 (range: 4 to 14). For corn following soybeans, the average number of trips was 7.6 (range: 4 to 12). Soybeans averaged 6.6 (range: 2 to 12). The majority of corn fields had between 7 and 10 trips while the soybean fields were almost equally divided between those with 6 or fewer trips and those with 7 to 10 trips. Eighty-five percent of the soybean farmers reported no fertilizer trips. (The percentage of acres by primary tillage implements is shown in Table 1).

The percentage of soybean farmers using row cultivation has decreased from 84 percent in 1989 to 49 percent in 1996. This decline in row cultivation has been accompanied by a change in row widths, which is described later in this summary.

Table 1. Primary tillage practices, 1996 (by percentage of acres).

Tillage type	Cont. corn	Rotated corn	Soybeans
Moldboard	10	2	7
Chisel	50	15	40
Field Cult.	49	64	55
Disk	63	20	44

Pesticides

Virtually every field reported some herbicide use. The average herbicide costs per acre were almost identical among crops: \$30.54 for continuous corn, \$30.47 for rotated corn, and \$30.64 for soybeans. The herbicide cost estimates used standard prices for the materials.

Broadcasting is the predominant method for herbicide applications. For corn, 91 percent of the applications were broadcast and 6 percent were banded. For soybeans, 90 percent of the herbicide applications were broadcast and 7 percent were banded. The remainder of the applications were spot or some other method.

The applications for both corn and soybeans were about equally divided between operator and custom applied. For corn, 52 percent were operator and 47 percent custom applied; for soybeans 56 percent of the applications were carried out by the operator and 43 percent were custom applied.

Insecticides were applied on 65 percent of the continuous corn acres at an average cost of \$14.22 per treated acre. Only 9 percent of the rotated corn acres received an insecticide application at an average cost of \$13.62 per treated acre. Twenty percent of all corn acres received an insecticide application in 1996, while less than one percent of the soybean acres were treated.

Fertilizers

The average amounts (in pounds) of nutrients applied per acre by crop are shown in Table 2. The average nitrogen rate for continuous corn was 133 pounds per acre. The average nitrogen for rotated corn rate was 129 pounds per acre. For both continuous and rotated corn, 98 percent of the acres had some commercial nitrogen applied. Only 17 percent of the soybean acres received any commercial nitrogen, and the average rate was only 12 pounds per acre.

Anhydrous ammonia fertilizer was used on slightly more than half of the corn acres—

Table 2. Average pounds of nutrients

Nutrient	Continuous corn
Nitrogen	133
Phosphorus	37
Potassium	51

The percentage of soybean farmers using row cultivation has decreased from 84 percent in 1989 to 49 percent in 1996.

Provides snapshot of trends

54 percent of the continuous corn acres and 56 percent of the rotated corn acres. Anhydrous constituted 47 percent of the total commercial nitrogen applied to continuous corn and 46 percent of the total commercial nitrogen applied to rotated corn.

Phosphorus and potassium were applied to 98 percent of the corn acres irrespective of the rotation. Only 17 percent of the soybean acres received commercial phosphorus and potassium.

Seed

The average seeding rate for corn after corn was 27,272 kernels per acre. For corn after soybeans, the average seeding rate was slightly higher at 27,936 kernels. The average seed cost was \$26.23 per acre for continuous corn and \$27.22 for rotated corn.

The average seeding rate for soybeans was 1.12 bushels per acre at an average cost of \$17.89.

Yields and returns

The average yield of continuous corn was 140 bushels per acre (range: 31 to 230 bushels). Rotated corn averaged 145 bushels per acre (range: 48 to 224 bushels). Soybean yields averaged 46.5 bushels per acre (range: 10 to 72 bushels).

The cost for machinery operations and the price per pound for fertilizer are taken from the Iowa State University Extension Service Estimated Costs of Crop Production (FM-1712). The total costs, without a land or labor charge, averaged \$198.18 per acre for continuous corn (range: \$91.17 to \$282.52). The average cost for rotated corn was \$194.10 (range: \$83.37 to \$297.74/acre). For soybeans the average cost without a land or labor charge averaged \$104.42/acre (range: \$50.60 to \$189.66/acre).

Using per-bushel prices of \$2.60 for corn and \$6.80 for soybeans, the average returns to land, labor, and management, per acre, were \$166.21, \$183.88, and \$211.72 for continuous corn, rotated

corn, and soybeans, respectively. Charges of \$0.89 per bushel of corn and \$2.72 per bushel of soybean yield were used to estimate a land cost. Using these assumptions, the average profit for continuous corn was \$17.55 per acre (range: -\$109.51 to \$162.78). For rotated corn, the average profit was \$33.43 per acre (range: -\$143.35 to \$198.73). Soybeans had an average profit of \$67.08 (range: -\$118.79 to \$177.98 per acre).

Comparison of soybean row widths

The most dramatic change in cropping practices has been a shift to narrower soybean row widths. In 1996, 34 percent of soybeans were planted with 30-inch rows, 26 percent were drilled, 17 percent used wide (36 to 40 inch) rows, and 13 percent had narrow (16 to 20 inch) rows.

Changing row widths alters the entire production process. The 30-inch row soybeans averaged 2.66 pre-plant tillage trips. Drilled soybeans averaged only 1.1 pre-plant tillage trips. Wide rows averaged 2.49 trips, and narrow rows averaged 1.95. Row cultivation averages ranged from zero for the drilled beans to 1.1 for the wide-row soybeans.

Results in Table 3 raise a question: why are people shifting to the drill and narrower rows, given that the 30-inch rows show the highest return? One reason is cultivation time. As noted, narrower rows are cultivated less often, and depending on the value of the labor saved, individual farmers may arrive at different results. Note that the values in Table 3 are statewide averages; yields will vary by region and individual farms. It should also be noted that the shift to drilled soybeans appears to have stabilized; 1996 results are essentially the same as those for 1994.

The profit varied by more than \$200 per acre for each of the soybean row widths. Some farmers reported a loss for all row widths. These findings reflect the tremendous variability in returns

Phosphorus and potassium were applied to 98 percent of the corn acres, irrespective of the rotation.

Table 3. Comparison based on soybean row widths, 1996 (per acre).

Row width	Yield	Profit
Drilled	45	\$58.37
Narrow row	47	\$66.74
30-inch row	48	\$72.60
36-40 inch row	45	\$66.94

Fertilizer applied per acre.

Rotated corn	Soybeans
129	—
52	32
64	61

Insecticides were applied on 65 percent of the continuous corn acres.

and suggest that numerous combinations of technology and row width give essentially the same results. Seeding rates and cost also varied considerably depending on row widths.

Tillage practice comparisons

No-till was used on only 7 percent of the continuous corn acres. However, 20 percent of the rotated corn and 22 percent of the soybeans used no-till. The no-till fields had no pre-plant tillage trips compared to an average of 1.6 and 2.5 pre-plant tillage trips for tilled corn and soybeans, respectively.

Total weed management costs for corn versus soybeans differed little, although soybean herbicide and total weed management costs were higher for the no-till fields.

The average yields and profit are shown in Table 4. On average, the no-till yields were lower, contributing to lower returns. Remember that individual results will vary depending on soil type and other individual consider-

Table 4. Yield and return by tillage system and crop, 1996 (by dollars and bushels per acre).

System	Yield (bu/acre)	Profit
No-till corn	134	\$26.75
Tilled corn	148	\$35.11
No-till soybeans	44.7	\$61.31
Tilled soybeans	46.5	\$67.05

ations.

Impacts of manure

One of the major issues facing Iowa agriculture is the proper use and handling of animal manure. Manure was applied to 46 percent of the continuous corn fields and 21 percent of the rotated corn fields.

Average yields were higher and commercial fertilizer use was lower on fields where manure was applied versus where it was not. In aggregate, Iowa farmers are taking credits for at least some of the nutrient value of the manure.

Energy use

Agriculture is not a major energy-using sector in the U.S. economy, but agriculture is affected by changing energy availability and prices.

Fertilizer accounts for the majority of energy used in crop production. Nitrogen fertilizer is the single biggest source of energy use in corn production, accounting for nearly 70 percent of the total energy used. Table 5 shows the crop energy use by input category. Fertilizer and pesticides have been converted to diesel fuel equivalents for ease of comparison. All of the uses shown in Table 5 are derived from fossil fuels so the comparisons are for similar energy sources.

Table 5. Energy use by crop, 1996 (gallons of diesel fuel equivalent per acre).

Crop	Fertilizer	Machinery	Pesticides
Cont. corn	30	5.5	1.8
Rot. corn	30.3	4.42	1.44
Soybeans	3.67	3.87	1.05

Conclusions

Crop production practices in Iowa evolve rapidly as new technologies, techniques and materials are introduced. Considerable variation remains in the practices that are followed.

The shift in soybean row widths is one major change, accompanied by alterations in the entire soybean production system. This change in row widths appears to be driven by time considerations more than per acre profit considerations.

The yields and total costs of production show considerable variation, some of which is due to location and climatic conditions. Much of the variation, however, particularly in cost, is due to differences in production practices. The non-land or labor costs varied by more than \$130 per acre. Such a range in costs led to variations in returns of more than \$200 per acre.

Iowa farmers are continually making choices. Although the new production options can make life easier, there is no substitute for common sense in evaluating the merits of changes for each particular situation.

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Gary Huber of Onion Creek Farm explains pea production during a Field to Family tour. (Photo courtesy Magic Beanstalk CSA)

with a northeast Iowa producer of free-range chickens as an alternative to chickens the restaurant was purchasing through a large grocery distributor. After trying just one case of chickens, the owner switched to the locally grown and processed poultry. Rudy's Tacos also plans to use local, organic

tomatoes for salsa and entrees during the 1998 growing season.

Enshayan plans to use the switch to locally grown poultry at Rudy's Tacos as a case study. "One of my students will document the entire process, including costs, from egg hatch to restaurant table for both the locally

grown and the large grocery distribution food pathways," says Enshayan. "It will be 'a tale of two chickens'."

Although building the producer/buyer/caterer relationships at UNI and Allen Hospital might lead to more local food purchases, Enshayan notes that having a better understanding of local food systems is the real educational outcome of the project.

"When people understand the implications of buying locally grown and processed foods, I believe in the long term we'll see a switch to these systems," he says.

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BUFFERS

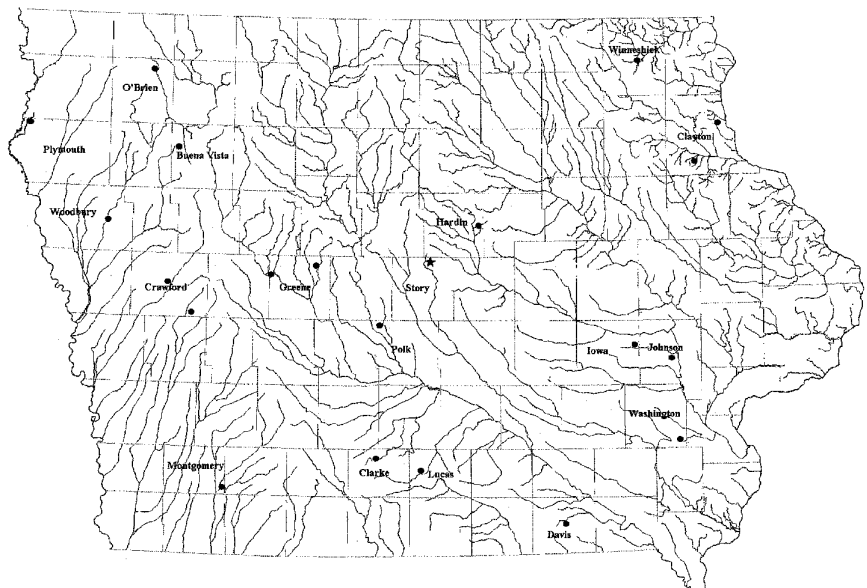
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century, Schultz says, adding, "Because of this project, scores of riparian forest buffers are being planted across Iowa and the Midwest."

"... The system of land practice which deserves the name 'conservative' will be motivated by a mixture of economic, ethical, and esthetic considerations. Any one of these motives separated from the others produces actions which appear (to me) unsound."

—from Aldo Leopold's papers

Iowa Buffer Initiative 1998 Demonstration and Project Sites (coordinated by Trees Forever)



map courtesy of Trees Forever

Farmers, researchers put heads together on hoops

John Lane Secretary

In mid-January 1998 the Leopold Center convened a group of nearly two dozen swine producers, educators, and researchers to discuss the potential of hooped buildings as an alternative to conventional swine production. Center education coordinator Rich Pirog, who facilitated the meeting, described the forum as an informal discussion designed to allow an open exchange of ideas on the topic.

Center director Dennis Keeney launched the discussion by acknowledging the primarily negative media attention currently given to hog production.

"We need to be involved in these discussions without being antagonistic," he said, pointing out that the degree of pessimism associated with the disappearance of small hog farms has been exaggerated.

Keeney expressed optimism about recent changes in swine production methods, adding that open discussions can effectively speak to the larger issues in a constructive way because each person—whether producer, educator, or researcher—brings to the forum unique knowledge and experiences.

ISU animal scientist Mark Honeyman described his continued demonstration work on deep-bedded systems, but he emphasized that his focus is now on the next phase of research—comparing hooped systems to more established approaches. This work will be conducted at the ISU Rhodes Farm near Marshalltown and ISU's Armstrong Research Farm near Atlantic. The need for comparative work has arisen, according to Honeyman, because hooped systems have been adopted so quickly and the research has had difficulty keeping up with producers' needs for more information.

Don Lay, an ISU animal behaviorist, plans to lend his assistance in evaluating behavioral differences in various systems. ISU agricultural and

biosystems engineer Tom Richard will assess composting systems that use the manure/bedding pack.

ISU agricultural and biosystems engineer Jay Harmon noted that specific, customized hooped-building designs should be developed. This research might include an outreach component with producers. Harmon also cites labor as a key factor in efficient hog management.

Jim Kliebenstein, an ISU economist, will be studying economic and revenue aspects of these research efforts in light of producers' experiences and observations about the economic viability of hooped systems.

The 11 producers present stated unequivocally that they want more control over various aspects of their operations in terms of the regulations under which they operate. Manure management is a primary example. Producers acknowledged that they will need to take a proactive stance on such issues.

"We need to create solutions that will affect legislation before legislation takes control and dictates the solution," one producer noted.

An ISU Extension field specialist added that public perception needs to be addressed through education. Many Iowans think, for example, that liquid manure will automatically affect water quality adversely, but that does not have to be the case.

Bedding and composting systems were also discussed at the meeting. Producers and researchers debated the relative efficacy of various methods in terms of cost, labor, and long-term effectiveness. Nutrient management figured significantly in the discussion as well. The group also discussed climate control in hooped structures and the composting of livestock mortalities.

The researchers, educators, and producers noted that they were depen-

dent on each other to improve hooped system technology and implement changes, and that university research and everyday pig production must proceed in an ongoing, parallel fashion to bring about more profitable and environmentally sound approaches.

Pirog queried the group about the need for another statewide conference on alternative swine systems, similar to the one held in February 1996; consensus was positive and enthusiastic. One producer also noted the need to promote the special production attributes of their products via niche marketing.



Finally, heightening public awareness about alternative swine production methods was cited as a topic for future discussion. This group tentatively plans to meet again in early 1999 to discuss the first year's research at Rhodes and other issues and developments pertaining to hoop structure production systems.

"We end, I think, at what might be called the standard paradox of the twentieth century: our tools are better than we are, and grow better faster than we do. They suffice to crack the atom, to command the tides. But they do not suffice for the oldest task in human history: to live on a piece of land without spoiling it."

—Aldo Leopold

—from "Engineering and Conservation" (1938)

Anniversary conference proceedings published

A proceedings volume from the Leopold Center's tenth anniversary conference has now been mailed to those who registered for the July 1997 event.

The 140-page paperback chronicles two days of presentations and discussions celebrating "Sustainable Agriculture: Taking Stock, Moving Forward." The event featured keynote speeches by Paul Johnson, then head of the Natural Resources Conservation Service, and Pat Boddy, Iowa television personality.

These addresses, along with those presented by Buddy Huffaker (a representative of the Aldo Leopold Foundation in Baraboo, Wisconsin), George Hallberg (a noted expert on Iowa water resources), John Hyde (former *Des Moines Register* reporter and Henry A. Center's editorial staff, Mary Adams and Liz Weber.



Wallace biographer), Curt Meine (Aldo Leopold's biographer), and David Williams (award-winning Iowa farmer and conservationist), make up one-third of the book.

The remainder of the volume is devoted to summaries of 16 concurrent sessions. Topics range from cropping systems, to a food system vision, to a look back at the passage and accomplishments of the Iowa Groundwater Protection Act. The proceedings volume was edited and produced by the

Center's editorial staff, Mary Adams and Liz Weber.

Additional copies of the 1997 anniversary conference proceedings are available upon request from the Leopold Center. Call (515) 294-3711 or e-mail leocenter@iastate.edu to obtain a copy.

Annual report garners honor

The 1996-97 annual report of the Leopold Center has received an award of merit from the Iowa Chapter of the National Agriculture Marketing Association. The report, edited by Center editor Mary Adams and designed by Julie Mangels of Juls Design, Ankeny, provided a comprehensive overview of the Center's tenth anniversary year. The report entry now advances to the national competition.

Conference and workshop support deadlines set

The Center's conference and workshop support program, now in its fifth year, has set the following submission deadlines and notification of approval dates for 1998:

March 27 (notification by May 11)
July 13 (notification by Sept. 9)
Oct. 7 (notification by Dec. 3).

To receive submission guidelines, contact the Center at (515) 294-3711 or check the Center's Web site at <http://www.leopold.iastate.edu/centers/leopold/edprograms.html>. For further information, contact Rich Pirog, education coordinator, at 515 294-1854.

Map of Iowa waterways now available

Some 27,000 miles of perennial rivers and streams run through the state of Iowa. "Iowans are aware of the rivers that surround them and they are able to locate their land or home just by the location of a particular body of water," according to Anne Larson, Leopold Center communications specialist.

"Iowa . . . Many Rivers Run through It" made its debut as a six-by-nine-foot poster at the Iowa State Fair in August. Created for the Iowa State University College of Agriculture as part of a display about the 1997 Year of Water celebration in Iowa, the map was used for a display on ag-related careers, erosion, and other issues pertinent to Iowa agriculture and water quality.

During the fair, requests for copies of the map were numerous. "We were surprised by how many people were interested in the map and wanted a poster size version for themselves," Larson says. "Many educators will use the map to increase awareness of Iowa water resources by showing the vast amount of water across the state." Larson says educational efforts such as the map, and conferences held during 1997, will help motivate continued protection of Iowa water resources.

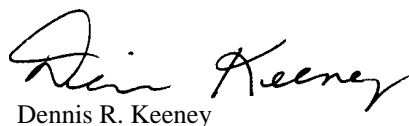
"Iowa . . . Many Rivers Run through It" (Pm-1740) is available for \$4 from county ISU Extension offices or Extension's Publications Distribution Center, 119 Printing and Publications Building, Iowa State University, Ames, Iowa 50011 (515) 294-5247.

EVOLUTION

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been in use for a sustained time period that we can safely say that they are a technological and economic success, even as we learn more about how to use them efficiently.

The Leopold Center is now supporting a concerted effort to compare hooped house performance with confinement structures at the ISU Rhodes Farm near Marshalltown (see story page 10). Like the Iowa Buffer Initiative, hoops appear to represent another win-win scenario in the quiet evolution toward a more sustainable agriculture.


Dennis R. Keeney

Center to commemorate 50th anniversary of Leopold's death



To commemorate its namesake, conservationist and educator Aldo Leopold, the Leopold Center is hosting Curt Meine, noted Leopold biographer, to speak on April 21 at 7:30 p.m. in room 220-240 of the Scheman Continuing Education Building on the Iowa State University campus. A tree will be planted in Leopold's honor the morning of April 22. Meine will also speak at 12 noon on April 22 in the Sun Room of the Memorial Union at ISU. Meine has published numerous works about the Center's namesake, including *Aldo Leopold: His Life and Work*.

All events are free and open to the public; refreshments will be served at both presentations. Please contact the Center for more information.

Events

April 19 (tentative)—Tree planting commemorating 50th anniversary of Aldo Leopold's death, Burlington, Iowa. Contact Trees Forever 1(800) 369-1269.

June 9–July 28 - Story County Master Conservationist Program (Tuesday evenings 6 - 10 p.m.). Contact Nan Geske (515) 232-2516.

July 19-22—Animal Production Systems and the Environment: An International Conference on Odor, Water Quality, Nutrient Management, and Socioeconomic Issues (Des Moines). Contact ISU College of Agric. (515) 294-1823.

Summer 1998—For complete listing of Practical Farmers of Iowa field days featuring on-farm research, contact Rick Exner (515) 294-1923.

Sept. 1—tour of alternative swine systems research, Rhodes Farm. Contact Denise Schwab, ISU Extension (515) 484-2703.



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