

Letter

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Leopold Center, PFI mark first season of field day partnership

By Rich Pirog, Education coordinator and Jeri Neal, Research coordinator

The Leopold Center and Practical Farmers of Iowa (PFI) have collaborated on many projects over the past ten years. In March of 1997, PFI opened discussion with a proposal about the potential for a more formalized relationship to the Leopold Advisory Board. Both organizations identified advantages to a closer working relationship, and discussions resulted in a February 1998 agreement that launched the two organizations on a multi-year partnership. The primary goal of the partnership is to use on-farm research and outreach as a vehicle to develop more integrated and effective sustainable agriculture practices for Iowa.

"Iowa has an advantage over many other states because of the Leopold Center/PFI partnership, especially with the additional support both groups get from ISU Extension," says Paul Mugge, a PFI farm cooperator from northwest Iowa and member of both the PFI and Leopold Center

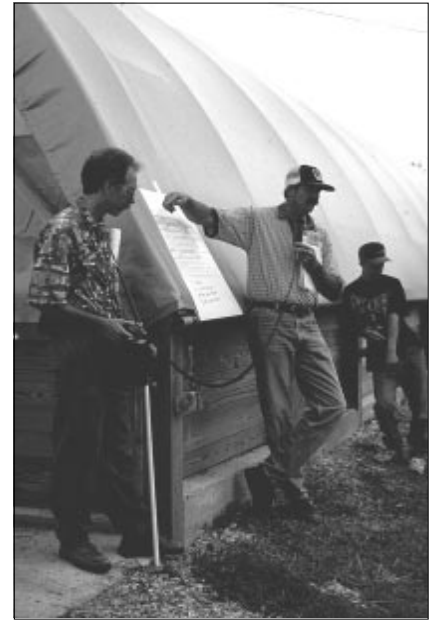
There are a number of farmers who have the knowledge and experience to do on-farm trials, so the farmer/researcher partnership is a natural.

—Paul Mugge,
PFI farmer-cooperator

advisory boards. "Working with researchers from ISU and elsewhere has been a win-win situation. There are a number of farmers who have the knowledge and experience to do on-farm trials, so the farmer/researcher partnership is a natural," Mugge adds.

The opportunity to partner with farmers and educators is also attractive to researchers. "Too often university research is driven just by theory and the latest technological advances; it doesn't always address on-farm challenges," says Tom Richard, an Iowa State University agricultural and biosystems engineer. "What PFI and the Leopold Center help do is prioritize the critical issues we need to solve to move toward a more sustainable agriculture."

PFI farmer cooperators are working with Center-funded researchers and educators to conduct on-farm studies on a variety of subjects including intensive grazing management, transition to organic production of soybeans, integrated pest management, swine production in hoop houses, composting of manure/



Tom Richard (left) and Paul Mugge lead discussion about hoop structures at a PFI/Leopold field day in August.

bedding packs, community supported agriculture and nutrient management. Through the Leopold/PFI partnership, PFI farmer cooperators are keeping records of labor, pig weights, days to market and feed consumption in their swine hoop house operations. ISU graduate and farmer Angela Tedesco, who operates the Turtle Farm Community Supported Agriculture project in Des Moines, is doing an economic analysis on onion production that examines labor efficiency.

Outreach efforts—making the observations and activities available to farmers and the public at-large—are an important part of the partnership agreement. In support of the outreach goal, PFI held more than

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PFI PARTNERSHIP

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PFI PARTNERSHIP

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35 PFI field days throughout the state during the summer of 1998 (see map).

"The Leopold Center is helping PFI to take sustainable agriculture on-farm research to new audiences," says Rick Exner, PFI/ISU Extension farming systems coordinator. Through Center support, PFI has been able to cooperate with the Iowa Farm Bureau to develop on-farm trials and offer field days on four farms that were not previously part of the PFI network. Follow-up meetings with Farm Bureau members are planned in those counties.

PFI is building on these new groups of cooperators to reach even more Iowa farmers and consumers with sustainable agriculture research. Center director Dennis Keeney notes that this is exactly the kind of increased interaction among Iowans that the partnership hopes to foster. "We are headed toward the same goal," he comments, "a more sustainable future for Iowa's land and its people."

NEWS & NOTES

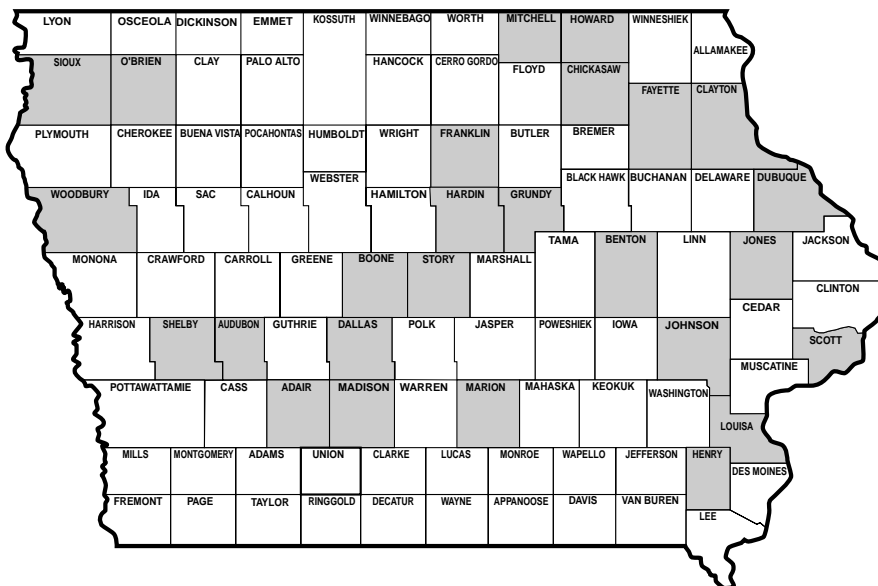
In July, **Dennis Keeney** was one of several Iowa State University faculty members who addressed dignitaries from The World Bank who were interested in learning more about how intensive agriculture can be more sustainable. Keeney talked about the Leopold Center's role in outreach of sustainable agricultural research.

* * *

Work continues in filling the Henry A. Wallace Endowed Chair for Sustainable Agriculture at Iowa State University. Among those serving on the Wallace Chair advisory group are Leopold Center board member **David Williams**, Villisca; former board member and Practical Farmers of Iowa president **Dave Lubben**, Monticello; and Center director **Dennis Keeney**.

Counties with Practical Farmers of Iowa On-farm Research Plots

With support from the Leopold Center for Sustainable Agriculture



PFI cooperators in these counties participated in on-farm research projects, which included swine production in hoop houses and intensive grazing. An estimated 1,250 people attended 21 field days at 35 farms that were supported by the Leopold Center.



LEOPOLD CENTER

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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: Laura Miller



G.W. Carver rooted in sustainable agriculture

Measure me not by the heights to which I have climbed but the depth from which I have come.

—Frederick Douglass

I jogged across the lush green Simpson College campus in Indianola this spring. My run took me past Carver Science Hall, and I reflected on my “spring of George Washington Carver.” It began with morning runs during meetings at Tuskegee Institute with the Council for Agricultural Science and Technology/Kellogg Foundation-sponsored “Conversations on Change” program—a workshop that truly evoked the spirit of Tuskegee and of Carver. The season continued with many runs past Carver Hall on the beautiful Iowa State University campus, and came together with the triad run at Simpson.

All three campuses were instrumental to Carver’s development. Simpson was his first institution of higher learning, one that accepted him for what he was, a curious, brilliant man yearning for knowledge. There he became aware that the arts, his first love, were not the best way to serve his fellow southern blacks. At the Iowa State College of Agriculture and Mechanic Arts, his curiosity about the natural world was further set afire; here is where science became open to him and he became aware of the power and necessity of science to address the problems of the agricultural South in the early 1900s.

We tend to eulogize Carver for his race, his humble beginnings, and his ability to apply science to daily observations, and of course, for his development of uses and markets for the peanut. Henry C. Wallace once said of Carver, “He had a

creative urge and a sense of destiny that would not let him rest. His creative urge must serve the people who needed it most.” Thus, it was that Carver chose the fork in the road which took him to Tuskegee, at the request of

Booker T. Washington, to establish an agricultural school. It was a hard move for him, a change in cultures and a marked decline in quality of facilities. Tuskegee presented many challenges for Carver—difficulties with President Washington, administrative challenges for a man who simply did not regard administration as an activity worthy of his time, low pay and consistently low-quality facilities.

But Carver’s motives were pure; he considered the post his “mission field” where he would work on agricultural research of use to the “man farthest down.” Carver learned that Southern farmers, regardless of race, suffered from even more problems than their Northern counterparts. Trapped in grinding poverty, bound to a monoculture of cotton that exhausted the fragile southern soil and whose market was controlled by external forces, the Southern farmer was a marginal producer on marginal land. While slavery was no longer the law of the South, economic rules held farmers in bondage as much as if they were slaves. The only source of increased income was to plant more cotton at less profit per acre.

Carver wrote in *The Need of Scientific Agriculture in the South*:

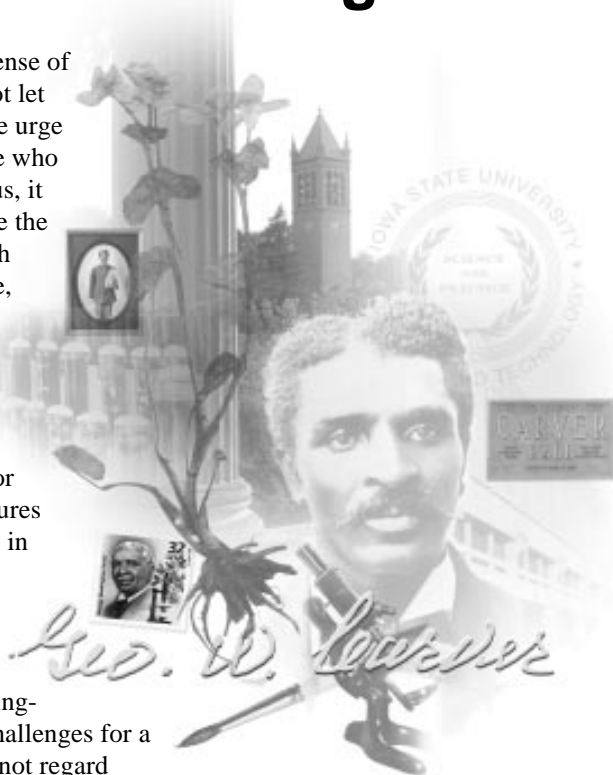
The virgin fertility of our soils

and the vast amount of unskilled labor have been more of a curse rather than a blessing to agriculture. This exhaustive system for cultivation, the destruction of forests, the rapid and almost constant decomposition of organic matter, have made our agricultural problem one requiring more brains than of the North, East or West.

Denied Hatch Act funds from the federal government, Carver was forced to conduct research and demonstration programs on budgets that were incredibly modest, even in those days. This turned out to be a blessing. Tuskegee became a “little man’s experiment station” and provided information that required hard work and the wise use of resources rather than expensive

CARVER, SUSTAINABLE AG LEADER

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Biography depicts Carver as scientist and symbol

George Washington Carver: Scientist and Symbol

Linda O. McMurry, *Oxford University Press, New York, 1982, 367 p.*

There are dozens of biographies in print about George Washington Carver, many written for youth audiences and most highlighting his importance as a black scientist and peanut and sweet potato researcher.

Linda McMurry's 1982 biography, *George Washington Carver: Scientist and Symbol*, is a refreshing contribution to the body of literature about Carver because she utilizes her perspectives as a historian to form a more complete, more complex picture of the man and the myths that emerged from his life and work. From his difficult beginnings as an orphaned former slave to his later successes, McMurry offers sufficient detail to provide a believable human portrait of Carver.

Carver, a well-known alumnus of Iowa State University, is being featured this year as one of the themes for the university (see sidebar). McMurry's volume provides an engaging review of

Carver's experiences at ISU and how Iowa State's extension innovations provided a springboard for Carver's enduring success as an outstanding teacher and researcher at Tuskegee Institute in Alabama.

Carver's dedication to principles commonly associated today with

Nature produced no waste, therefore so-called waste products result from man's failure to apply his intelligence to the use of natural resources.

—George Washington Carver,
Iowa State University (B.S. 1894, M.S. 1895)

"sustainability" may come as a surprise to some. McMurry goes to great lengths to demonstrate the key philosophy around which Carver built much of his work, that "nature produced no waste, therefore so-called waste products result from man's failure to apply his intelligence to the use of natural resources."

Carver was an advocate for the underdog. In his first experiment station bulletin in 1898, Carver declared that the goal of the station was that "neither time nor expense will

be spared to make our work of direct benefit to every farmer." He further dedicated himself to nontechnical language wherever possible and to explaining concepts to ensure that his materials were understood by lay audiences.

Where McMurry really shines is in bringing Carver the educator to life. Through recounting of numerous anecdotes, she shows how Carver's humanitarian side was part of what fueled his success as a communicator. McMurry writes that despite Carver's frequent administrative run-ins with Tuskegee head

Booker T. Washington, the latter conceded that Carver was "a great teacher, a great lecturer, a great inspirer of young men and old men." The legion of dedicated students whose lives he touched over the years bears testament to his talent as a teacher and communicator.

McMurry credits Carver as a magnificent interpreter and humanizer of science who provided a critical link between researchers and lay audiences. "An evaluation of the true significance of his research is best reserved for the discussion of his philosophy and values," she writes.

The picture that emerges from McMurry's research is a credible, impressive image of a man full of contradictions and idiosyncrasies who managed to use his considerable talents in bringing the need for agricultural stewardship and innovation to the fore. McMurry summarizes in the final chapter, "The world needs its pure scientists and research chemists, but it also needs its Carvers, who try, however imperfectly, to fit the pieces together to serve both man and his environment."

That's a goal that Aldo Leopold might have heartily seconded.

—Anne Larson,
Communications specialist

ISU uses Carver legacy to inspire students today

During the 1998-99 academic year, Iowa State University celebrates the legacy of its first African-American student and faculty member, George Washington Carver. Renowned for developing innovative uses for a variety of agricultural crops such as peanuts, soybeans and sweet potatoes, Carver's legacy at Iowa State is greater than mere academic achievement.

He was an accomplished musician, artist, orator, athletic trainer and student leader. Iowa State's land-grant heritage provided a rich environment where he could take root and blossom. As part of the celebration, the Special Collections Department at the ISU Library has launched a website with more information about George Washington Carver. Biographical information, images, a calendar of events and other resources are available at:

<http://www.lib.iastate.edu/spcl/gwc/home.html>



In June, the Bear Creek Watershed Project became a nationally recognized research and demonstration area of the USDA. Above, landowners Ron and Sandy Risdal (at left) pose with their grandchildren during formal dedication of the

Buffer initiative gets hearty reception



riparian buffer area, which began as a project of the Center's Agroecology Issue Team. To date, nearly four miles of buffers have been established along Bear Creek and another four miles are expected to be finished in the next two years.

CARVER, SUSTAINABLE AG LEADER

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implements and fertilizers. This pegs him as one of the first true sustainable agriculture educators and researchers. He worked on improving soils, growing crops with low inputs, and using species that fixed nitrogen (hence, the work on the cowpea and the peanut). He emphasized providing information farmers need presented at the level they could use.

The institute bulletins (a concept he brought with him from his experiences at Iowa State) were free, and written in a way that told in simple terms how to grow, manage and utilize a crop while building soil fertility. He was a strong proponent of organic fertilization, and demonstrated that organic techniques required fewer inputs and produced more profits than conventional methods of cotton production. The same was shown for alfalfa and soybeans. His success as a powerful teacher and role model for his students is considered to outstrip that of his work in support of product development.

Carver recognized early on that the Southern farmer must improve his net worth, not that of the state or of the industry, if he were to advance. He developed ways to use farmer labor and *retain its value on the farm and in the community*, while also continuing to grow cash-producing crops, in particular cotton. He explored ways farmers could grow more of their own food, feed themselves more nutritiously and become more self-sufficient. By the early

1920s, the boll weevil had laid waste to much of the cotton crop and demonstrated to the South the necessity of agricultural diversity in crops. Carver also spent much time and energy on finding commercial uses for the many products of the land, for instance, paint pigments from the plentiful Southern clays.

Carver advanced the South in many ways. He made education widely available at a low cost, developed agricultural technologies that were easy on the environment and retained their value in the community, and paid attention to the nutritional value of the foods he produced. He worked against the forces of new technologies that were operating to remove the small farmer from American agriculture. He worked to improve the quality of life for the black farmer. Had the political system of the times recognized his efforts and provided financial resources, the South and all of American agriculture today might be far more sustainable.

Carver was a true sustainable agriculture proponent. Carver worried about his people first and foremost, and worked to develop methods to make their farming profitable. This is a vision fitting for today's land grant colleges as they try to understand the greatness of this man. Carver brought a better life to those he met, and what greater legacy can he leave?

Dennis R. Keeney

At war with white mold

By E. Anne Larson
Communications specialist

Crops pests are a wily lot. When researchers attack one problem area, invariably another problem pops up somewhere else. Such is the result of the move during the past several years to narrow-row and reduced- or no-till soybeans as a means to suppress weeds and reduce soil erosion.

While these practices have gone a long way toward addressing production concerns, they've also contributed to a resurgence of soybean stem rot (or white mold, *Sclerotinia sclerotiorum*). This fungus has become a problem because it can thrive under the closed canopy of narrow-row and drilled soybeans. Severe infestations can reduce soybean yields by 50 to 70 percent, and the pathogen can survive for years in the soil as large, hard masses of fungal tissue called "sclerotia" (*sklare-oh-shee-a*).

How white mold develops

When soils remain damp for extended periods of time, which occurs more frequently after the soybean canopy closes, the sclerotia extend small, mushroom-like structures called "apothecia" above the soil. These structures

spew millions of spores that sometimes travel as much as 100 to 200 feet into the air. The spores that land on decaying soybean blossoms take hold and emit a toxin into the plant that kills the plant tissue and quickly paves the way for invasion into the stem. In lab tests, the white mold fungus can grow 1/2" to 1" per day. Temperatures under 85° F are most conducive to white mold, thus the most serious infestations in Iowa occur north of Interstate 80.

The pathogen can easily be identified by the white mycelium growing on the stem of the plant. Yellow and wilted leaves are often the first sign of infection. As the *S. sclerotiorum* becomes established, it forms new wheat kernel-sized sclerotia that return to soil via plant debris and tillage, where they can remain viable for five to seven years.

Natural antagonist may be key

While fungicides exist to fight this pest, Iowa State University plant pathologists Charlie Martinson, X.B. Yang and Luis del Rio have another approach—augmenting a parasitic fungus that attacks only *S. sclerotiorum* in the soil to eradicate the long-lived sclerotia. For the past three years, with support from the Leopold Center, the researchers have been studying the antagonistic fungus *Sporidesmium sclerotivorum* to determine how it might be used in Iowa as a biological control against soybean white mold.

This particular mycoparasite (a fungal parasite) was developed by USDA biocontrol scientists to control a related disease on lettuce. Since beginning the project in Iowa, Martinson says they have found native forms of *S. sclerotivorum* that are equally lethal to white mold. In 1997, nearly 800 soil samples that went through the ISU Plant Disease Clinic were sub-sampled for this native parasitic fungus; nine of the samples representing eight counties across Iowa contained the native form of the mycoparasite. If this native variety proves equal to or better than the USDA form, Iowa may have a ready-made defense against the destructive white mold fungus.

WHITE MOLD

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Narrow-row and reduced- or no-till soybeans can suppress weeds and reduce erosion, but conditions are ripe for development of white mold (also called *Sclerotinia stem rot*). The most common symptoms are white mycelium growing on the stem and yellow or wilted leaves. Photos courtesy ISU Department of Plant Pathology

Biological control could offer promising approach

WHITE MOLD

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Currently, the research on biocontrol of white mold is taking several avenues to answer the many questions associated with the fungus and its antagonist, *S. sclerotivorum*:

Question 1

How does the USDA strain of S. sclerotivorum perform against white mold under Iowa conditions, and do Iowa native strains of the antagonist perform as well or better under Iowa conditions? What are the conditions conducive to the antagonist's growth?

Martinson says the USDA strain of *S. sclerotivorum* does establish well in Iowa, but appears to be moderately sensitive to some of Iowa's more alkaline soils. That's where a native strain of the biological control agent might have an advantage.

Researchers also are studying whether application of the antagonist in the spring or in the fall is more effective. Preliminary data show that spring may be better, but final data will not be available until later this fall.

Question 2

How does the antagonist S. sclerotivorum spread within a field?

While there are many anecdotal observations, no hard data exist for quantifying how the white mold parasite spreads within a field. Martinson says its ability to move in water runoff has posed some challenges in setting up replicated test plots. To more accurately test the spread of the mycoparasite, the project has set up "spot plots"—sites placed in cooperater fields with no other replications nearby. Martinson says that several of the farmer cooperators have yield monitoring equipment, thus making it easy to calculate the effect of the pathogen's and mycoparasite's effects on yield.

Question 3

Are there other native parasitic organisms that could fight soybean stem rot, and what is their ecology (how did they get here and where can they be found)?

Martinson says that since white mold has been a problem in the state before, there is

some speculation that there are other organisms capable of destroying the white mold sclerotia. Researchers are isolating and testing several of these organisms in laboratory settings to see how they perform. To date, none appear to perform quite as well as *S. sclerotivorum*.

Question 4

If proven effective, can this biocontrol be brought to market availability?

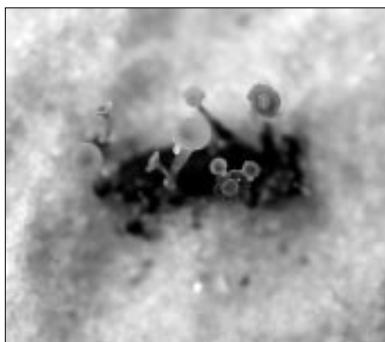
Martinson says numerous producers have been asking about soybean stem rot control. After Leopold Center support for the project concludes this year, the project will receive additional support from the Iowa Soybean Promotion Board to collect further information about biocontrol of this serious soybean pest.

Possible effects

Sclerotinia is a serious pest on other crops worldwide, including sunflower and beans. When the population of its antagonist builds up over time, however, the disease can be eradicated. The question remains whether a commercial firm would find production of the biocontrol agent profitable because once the mycoparasite is established, sales could conceivably fall off significantly.

Should *S. sclerotivorum* prove to be an effective way to control soybean stem rot, Martinson sees potential for the antagonist to be useful in precision application systems as well as organic regimes. With a low-impact tool to fight soybean stem rot, the narrow-row and low-tillage systems that are so beneficial for fighting soil erosion may gain additional effectiveness.

With a low-impact tool to fight soybean stem rot, the narrow-row and low-tillage systems that are so beneficial for fighting soil erosion may gain additional effectiveness.



When soils remain damp for extended periods of time, white mold sclerotia extend small, mushroom-like structures called apothecia above the soil. The apothecia spread spores that emit a toxin, which spreads quickly and can kill soybean plants.

Looking at multi-family farms

By Mike Duffy
Associate director and agricultural
economist, and Jay Lillywhite
Graduate research assistant, economics

Every day seems to bring new changes to agriculture and heightened concerns about its structure in the United States. There are changes in the seed and pesticide industries, swine production and decreases in farm numbers.

The structure of agriculture can be viewed from many perspectives, including production, manufacturing, input suppliers and market concentration. Many studies have considered the on-farm production perspective: some interesting shifts have occurred that are worth reviewing.

Concern over the number and size of farms in the United States is not new. Possibly the earliest study was the Rural Life Commission appointed by President Theodore Roosevelt in 1908. There have been a number of commissions and studies since then, including the 1998 Small Farms Commission report.

Early reports: consolidate farms

Early reports concluded there were too many resources, including human resources, devoted to farming and that public policy and efforts should be devoted to improving efficiency and helping move people off the farm. A 1964 report went as far as setting a target to remove a certain percentage of the farms in existence. The argument was that by improving efficiency in agriculture (primarily decreasing the amount of labor involved), the labor force could move to town and contribute to the nation's development.

An early concern about production agriculture was its nature: Should it be done by family farms or corporate farms? Studies as early as Goldschmidt's work in the 1940s showed that the nature of agricultural production surrounding a community influenced the level of social amenities provided. He concluded that communities surrounded by family-owned farms were better off than communities

surrounded by corporate farms.

Nationally, concerns about having too many resources devoted to farming began to change with the report commissioned by Secretary of Agriculture Bergland in 1979. This report, *A Time to Choose*, indicated that perhaps we had gone too far in removing people from agriculture, with negative consequences.

During the 1970s and 1980s, the difficulties facing family farms received a significant amount of attention. The crises led to all sorts

of studies looking at the family farm and the structure of production agriculture. The term "family farm" became a flashpoint for people with differing views.

The most recent Small Farm Commission chose to avoid the family/corporate labels and look instead at farms on the basis of size. The

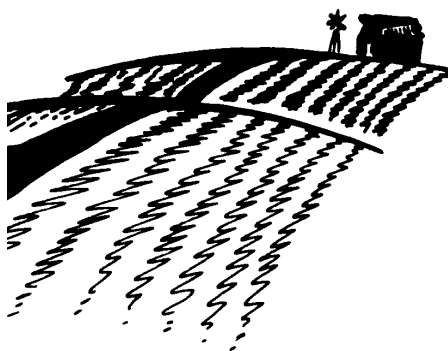
commission's 1998 report, *A Time to Act*, devotes its recommendations to ways of helping small farms. (The report defines a small farm as one with gross sales of less than \$250,000 per year.)

Another underlying theme over the past several decades has been the shifting proportion of farmers and the percent of production they represent. Today, the general rule is that 80 percent of the production comes from 20 percent of the farmers, which raises interesting questions about whether policy should be geared toward production or farmers.

All of this leaves groups such as the Leopold Center for Sustainable Agriculture, ISU Extension, and others in the land grant university system grappling with how to determine the appropriate audience and how best to serve that audience. In struggling with these issues, a consideration is that we have many farms where more than one family is involved with the operation. Such multi-family operations are "family farms" by generally accepted definitions, but may not meet the sales criteria used by the Small Farm Commission.

MULTI-FAMILY FARMS

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An early concern about production agriculture was its nature: Should it be done by family farms or corporate farms?

What impacts multi-family farms?

MULTI-FAMILY FARMS

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Center polls farmers

To assess the extent and impact of multi-family farms, the Leopold Center funded a 1997 survey of Iowa farmers. The survey, conducted by the Iowa Agricultural Statistics Service, consisted of telephone interviews conducted by trained interviewers.

Farm operators were asked how many families were involved in the management of their farm, as well as their current involvement in any other farms. To be considered “multi-family,” the owner of the other farm must be an immediate family member: parent, child, sibling, uncle, aunt, niece or nephew.

We found that 16 percent of Iowa farms have more than one family involved with the management of the farm. Another 19 percent of the farm operators reported working for another operation owned by an immediate family member. Some respondents indicated that more than one family was involved with the management *and* they were working for another farm owned by an immediate family member. When duplications are removed, more than 25 percent of Iowa farms are multi-family farms.

Further analysis showed statistically significant differences between the multi-family operators and their single-family counterparts in 12 of the 16 individual characteristics examined. Multi-family operators are generally younger in age and consider themselves principally employed in farming more often than their single-family counterparts. Multi-family farms are larger in terms of the acres operated (both owned and rented), show a greater diversity in the number of commodities produced, generate larger farm incomes and have a higher percentage of farms that are legal partnerships or corporations.

Multi-family farm families have a higher gross family income with higher percentages of that income received from the family’s farm, and less income from the principal operator’s off-farm employment and passive income.

Ways to classify multi-family

Using sales figures to classify farms has been put forward as a means of avoiding the potentially inflammatory term “family farm.” However, this approach also can pose prob-

lems. The USDA currently has a farm classification scheme based on farm sales: farms with sales of less than \$50,000 are classified as “noncommercial” and farms with sales under \$250,000 are classified as “small.”

Using this classification, the survey shows that 56 percent of Iowa’s farms are classified as noncommercial (sales less than \$50,000), 37 percent are classified as small commercial (sales between \$50,000 and \$250,000), and 7 percent would be large commercial farms (sales greater than \$250,000). For the noncommercial farms, 21 percent are multi-family farms. Thirty percent of the small commercial farms are multi-family and 35 percent of the large commercial farms are multi-family. Differences similar to those found in the overall population exist when the farms are classified based on farm sales. Due to small sample sizes, however, it is hard to make definitive statements about the differences within the large commercial category.

Farm impacts need more study

What is happening within production agriculture is a widespread concern. There are many different ways to measure the changes, many different interpretations of why the changes are occurring and many views about their impacts. One of the changes that has not been well documented is the extent and impact of multi-family farms. We are continuing to work on the analysis, but the results so far show that using sales level as a policy criterion may eliminate many true family farms from consideration in formation of agricultural public policy.

The Census of Agriculture, which will be released later this year, has been criticized for using \$1,000 of agricultural sales to define a farm. However, we feel that such criticism overlooks an important point, namely, the extent of multi-family farms. Our work has shown that, overall, 26 percent of Iowa’s farms are operated by more than one family. Even when classified by the amount of agricultural sales, one-third of all farms are multi-family.

No one measure is perfect. We need to do a better job of gathering data that truly represents what we intend it to represent. This is important for making policy, studying the structure of agriculture and gaining a clearer understanding of our audiences.

We found that 16 percent of Iowa farms have more than one family involved with management of the farm. Another 19 percent of farm operators reported working for another operation owned by an immediate family member.

China offers opportunities for learning, sharing

By Mike Duffy
Associate director and agricultural economist

I recently had the opportunity to visit China, my third trip in five years. Each time I go, I am more convinced than ever that I will not understand this country no matter how many times I visit. It is the most immense and diverse place I have ever seen. As one of the people I met commented, "There is the saying that only God knows some things, but even God doesn't know how many people there are in China."



On this trip I traveled as a faculty member with a group of Iowa State University students on a study abroad program with the Chinese Academy of Agricultural Sciences (CAAS). Cargill subsidized the students by providing air fare. I also had the opportunity to visit Zhejiang Agricultural University in Hangzhou.

Like anywhere else, you can get as many different opinions as the number of people you ask. China faces many problems but at this time I don't think feeding itself is one of them. I saw an abundance and variety of food. They may have trouble keeping up with grain production, but overall they will have enough food in the foreseeable future. Not only are they good at using all parts of plants and animals, they also are good at making intensive use of the land available.

Unlike some U.S. observers, I don't think China will become a big U.S. export customer. There will be some years when they import and many opportunities will open up over the next several years, but I don't

think China will ever become dependent on anyone for food.

Export opportunities will open in beef, fish and in other areas than hogs. The Chinese already consume close to the same amount of pork per capita as Americans. Additionally, swine are valued for their use of garbage as food. As one of my guides put it, "Pigs have to get their own breakfast and lunch, and the farmer gives them dinner." On the other hand, beef and dairy require a large amount of grain or forage. It's doubtful the Chinese will start devoting a

what is "free" and how much. Part of the dilemma is the conflict between the Eastern philosophy, which puts society first, and the Western approach, which puts the individual first. China always will be different than the United States.

China is starting to really experience many of the problems seen in more developed countries. Drugs, prostitution, crime and an unequal division of wealth are all more common today than just a few years ago.

I had the opportunity to meet an American couple who had been in China since 1948.

Their perspective was much different than any I had heard before or during this trip. They felt the average peasant was worse off now than before the shift to a market economy. They also felt that the people in charge today are the very ones targeted by the Cultural Revolution more than 40 years ago.

On a previous visit I was reviewing sustainable agriculture projects. I was struck by the fact that I was from a country that had been farmed for less than 200 years, and was trying to teach sustainability to people living in areas that had been farmed for 6,000 years. I had those same feelings this time.

We must learn from one another. Many of our problems have yet to come to China. Although we cannot expect them to follow the same path, we can look at some very good opportunities ahead in China. But we cannot use China to justify a massive export-driven expansion of U.S. agriculture. Cooperation and mutual respect will make things work best for everyone.

About exports to China:

Export opportunities will open in beef, fish and in other areas than hogs ... It's doubtful the Chinese will start devoting a lot of land to the production of hay or feed crops, so there may be some opportunities for grain imports.



lot of land to the production of hay or feed crops, so there may be some opportunities for grain imports. I do not think that we'll ever see the Chinese consume as many beef or dairy products as we do.

A serious problem is how to increase the level of farm income while eliminating the back-breaking labor. If mechanization is used, what will they do with the people who are displaced? This is a daunting problem when you consider that somewhere between 800 and 900 million people are involved with agriculture in China.

Environmental considerations also are important in China, but one researcher I met said sustainable agriculture starts with adequate food production. The environment comes second.

A controlled market is evolving in China. Although there are elements of a free market, strict controls exist on

Newsletter helm changes leadership

The Leopold Center welcomes Laura Miller as the new communications specialist and editor of the quarterly *Leopold Letter*. Miller assumes the part-time post formerly held by Elizabeth



Laura Miller

(Liz) Weber, who resigned last June. Miller comes to the Center with a wealth of publications and agricultural writing experience. Since 1986, she's been a communications specialist for ISU Extension, working on a variety of grant-funded projects within Extension's agriculture, families, and communities state programs to write, edit, produce, or market various print and audio-visual materials. Miller also has served in several interim positions, most recently as editor of the *ICM*, Extension's external four-color weekly newsletter about integrated crop management.

Currently, Miller is communications coordinator of Extension's statewide farm safety program and editor of the *Exchange*, an internal two-color newsletter for the 900

elected County Extension Council members in Iowa. She also is a communications consultant.

She holds a M.S. in Mass Communication from Iowa State University. She has won numerous national awards from Agricultural Communicators in Education (ACE) and serves as state co-chair of the Iowa ACE chapter.

Weber came to the Center as its first full-time technical editor in 1991. She is joining her husband, ISU landscape architecture professor Ken Lane, in his retirement. From 1991-1996, Weber was responsible for the Center's yearly progress report, organizational annual report, fact sheets, conference proceedings and other documents. She also coordinated or facilitated the hiring of three other current Center staff members.

In 1996, Weber began a job-share arrangement with Center communications specialist Anne Larson by assuming Larson's editorship of the quarterly *Leopold Letter*.

In between traveling with her husband and staying home with their two cats, Weber will pursue free-lance writing and editorial projects. Her personal essays appear occasionally in the *Des Moines Register*, *Christian Science Monitor* and other periodicals.

Intern plans to teach—and garden

Jenifer Secrist, an Iowa State University senior studying agricultural education, says she sought a summer Leopold Center internship because of her convictions that all living things are interrelated and that agriculture involves more than technology.

"We need to concentrate on the environmental and social aspects and balance those with the economic aspects," she says—and at the Center, she learned about ways to do that. During her internship, she says, "I talked with farmers who use sustainable practices and learned that some



Jenifer Secrist

can be as easy to implement as conventional practices—if the farmer is willing to change."

Working with education coordinator Rich Pirog, Jenifer compiled data, summarized workshop evaluation feedback, and developed diagrams depicting local food pathways. In addition, Jenifer works at the Iowa Crop Improvement Association. This fall, she will help compile data for the Leopold Center's five-year review process.

Jenifer, who grew up on a farm near Anamosa, plans to teach secondary-level agriculture and science—including sustainability concepts. "Another benefit of being a teacher," she adds, "is that I'll have time for a summer vegetable garden."

NEWS & NOTES

The Minneapolis-based Institute for Agriculture and Technology (IATP) has announced the appointment of Center director **Dennis Keeney** to its advisory committee. The IATP was established in 1986 to create environmentally and economically sustainable communities and regions through sound agriculture and trade policy.

Keeney is also now serving on the Iowa Farm Bureau Federation's Environmental Resources Advisory Committee. The committee provides information to the federation on issues affecting agriculture.

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The Leopold Center is preparing for the five-year review of its operations in early November. A four-member review team will visit the Center November 2-5 to meet with university and College of Agriculture administrators, researchers, issue team members, stakeholders, advisory board members and Center staff. Members of the review team are:

- Dr. Lorna Michael Butler (chair), extension anthropologist and professor, Sustainable Agriculture and Communities, Department of Rural Sociology, Washington State University;
- Dr. Zane R. Helsel, director of extension and dean of outreach, Cook College, Rutgers University;
- Dr. Peter E. Hildebrand, professor, Food and Resource Economics Department, University of Florida, Gainesville; and
- Dr. Billy R. (Bill) Baumgardt, former agricultural research director and associate agriculture dean, Purdue.

In late September, the Center issued a 100-page peer review document describing the last five years of activities and accomplishments. The main text portion of the document has been posted on the Center's web site at:
<<http://www.leopold.iastate.edu>>.

Swine System Options Conference planned

The Leopold Center has begun planning for a Feb. 17, 1999 statewide conference on alternative production systems for Iowa swine producers. The conference, slated for the Scheman Building in Ames, will take the place of the Center's annual conference. The conference will build upon the successful 1996 Swine Systems Options for Iowa meeting and will feature results from the Leopold Center's hoop house research initiative conducted at ISU's Rhodes Research Farm, and producer perspectives on design, management, renovation, production and marketing with alternative swine production systems.

Cosponsors for the conference include the Iowa Pork Industry Center, ISU Extension, the Iowa Pork Producers Association, Practical Farmers of Iowa, the Iowa Farm Bureau and the Beginning Farmer Center. Look for more information in the winter issue of the *Leopold Letter*.

CALENDAR OF EVENTS

Nov. 24-25—Management Intensive Grazing Conference (with Iowa Forage and Grassland Council meeting), Des Moines. Contact: Dan Morrical, (515) 294-2904.

Dec. 1—Iowa-Illinois Fruit and Vegetable Conference, Moline, Ill. Contact: Pat O'Malley, (319) 359-7577.

Jan. 9, 1999—Practical Farmers of Iowa Winter Workshops, 8:30 a.m., Ames. Contact: Nan Bonfils, (515) 294-8512.

Jan. 30, 1999—Local Food Systems and Community Agriculture Conference, Grinnell. Contact: Robert Karp, (515) 232-7162; or Gary Guthrie, (515) 382-3117.

Feb. 11, 1999—Organic Workshop, Iowa Fruit and Vegetable Growers annual meeting, Cedar Rapids. Contact: Kathleen Delate, (515) 294-7069; or Mark Gleason, (515) 294-0579.

Feb. 17, 1999—Swine System Options Conference, Ames. Contact: Rich Pirog, (515) 294-3711.

Dates and Locations TBA—Nutrient and Pest Management Workshop Series—Sioux, Plymouth and Cherokee counties. Contact: Jeff Tisl, Iowa Lakes RC&D, (712) 262-2083; or Kevin Kuhn, (712) 732-3096.



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