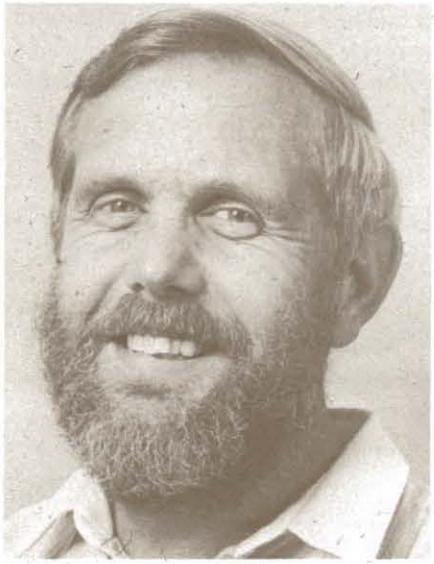
the Practical Farmer

Practical Farmers of Iowa Newsletter

Vol. 5, #3
Fall 1990

DECEMBER DOUBLE-HEADER COMBINES WINTER MEETINGS

This year Practical Farmers of Iowa has joined forces with the Central Iowa Area Extension Service to hold back-to-back meetings Dec. 12 and 13 at the Ames Starlite Best Western Motel. The Starlite is at the 13th St. exit of I-35. (For room reservations, call (515) 232-9260.) People will be able to "drive once, attend twice," picking up a full load of updated information on sustainable agricultural practices. The PFI meeting on the 12th is the annual membership meeting. Elections, an award, and cooperator reports are on the agenda, as well as a talk by retiring Decorah state representative Paul Johnson: *Sustainable Agriculture: Where do we go from here?*



Paul Johnson, farmer and retiring state legislator from Decorah.

The next day will see the second annual sustainable agriculture conference held by area and county staff from the central Iowa area. Last year's meeting introduced more than 200 people to concepts and practices in sustainable agriculture. This year's program deals with narrow strip intercropping, intensive grazing, pasture farrowing, weed management, cover crops, landlord-tenant relations, and the social side of sustainable agriculture. Details of the two events follow.

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IN THIS ISSUE

PFI 6TH ANNUAL WINTER MEETING, WEDNESDAY, DEC. 12

Cost: Free to current PFI members. Others pay $10, which covers membership. The noon meal is additional.

8:00 to 8:30 a.m. Registration. (Come early, socialize and avoid the crunch.)

8:30 Welcome and Introductions: Ron Rosmann, outgoing president of Practical Farmers of Iowa.

8:45 Featured Speaker: Mr. Paul Johnson, Decorah, ***"Sustainable Agriculture: Where do we go from here?"*** As a member of the Iowa House of Representatives, Paul Johnson was partly responsible for creating the vision and the consensus that led to the 1987 Iowa Groundwater Protection Act. That legislation established a number of programs to promote and research environmentally sound farming, including the Leopold Center for Sustainable Agriculture. Johnson, who has retired from the legislature to farm and write, will share his thoughts on the future and how to get there.

9:00 Presentation of the second ***PFI Achievement in Sustainable Agriculture Award*** by board member Richard Thompson. The purpose of this award is to recognize the efforts of an individual who has advanced the sustainability of agriculture. The award will be presented to John Pesek, A.C.F. Curtiss distinguished professor in the ISU Department of Agronomy. Pesek chaired the committee of the National Academy of Sciences' Board on Agriculture that produced the report *Alternative Agriculture*. (See article on page 16.)

9:15 COOPERATOR REPORT:

Nitrogen Management Trials

In the period 1987-1989, cooperators saved an average of 55 pounds of N per acre in nitrogen management field trials. The late spring soil nitrate test came into wide use by cooperators in 1989 and helped pinpoint crop nitrogen requirements. In the spring of 1990, the weather reversed itself. This was the wet year that some said would destroy the test. Fourteen cooperators used the late spring test this year. They will describe their experience, and research assistant Tom Morris will be on hand to answer questions about the test.

10:30 Break

10:45 COOPERATOR REPORT:

Other Fertilizer Trials

Four trials involved starter fertilizers. Nine trials were conducted on rates, placement, or timing of P and K. Cooperators will describe the outcomes of these trials and compare them to results from past dry years.

12:00 p.m. Lunch

1:00 COOPERATOR REPORT:

Narrow Strip Intercropping Demonstrations

This practice is designed to increase yields by allowing crop mixes to share the resources of light, moisture and fertility more efficiently. Four cooperators showed narrow strip cropping at field days this year. Several are working with ISU agronomist Rick Cruse to document yields, pests or diseases in the strips.

1:30 COOPERATOR REPORT:

Intensive Grazing Demonstrations

Four PFI field days last summer demonstrated intensive rotational grazing systems. This is fairly new for most Iowa farmers. Management priorities changed with this spring's wet weather.

2:00 COOPERATOR REPORT: Miscellaneous Trials – Cover Crops, Tillage, etc.

Four trials this year concerned cover crops, and several PFI members are cooperating with National Soil Tilth Lab researchers on a cover crop project. Another four trials involved comparisons of tillage systems. Additional trials were conducted in seeding rates or patterns, fertilizer forms, and consultant recommendation packages.

2:45 Break

3:00 COOPERATOR REPORT:

Weed Management Trials

In the dry years 1987-1989, PFI cooperators demonstrated that where ridge tillage was used to grow corn or soybeans, herbicides could be replaced by timely rotary hoeing, precise cultivation, and other practices. A question often asked is: "What happens in a wet year?" In 1990, 10 PFI trials addressed this question, and cooperators will tell what happened. Also present on the panel will be ISU botanist Tom Jurik, who

Rod Treimer walked through the nitrate test kit at the field day Aug. 28.

has completed a second year of observations on these trials.

4:00 PFI Annual Business Meeting

Year-end Outlook - Ronald Rosmann, President
Financial Report - Richard Thompson, Treasurer
New Business
Election of Officers

POSITIONING FOR THE 90s – EXTENSION CONFERENCE DEC. 13

The second sustainable agriculture conference held by Central Iowa Area Extension will take place at the Ames Starlite Village on the day following the PFI meeting. Attendance is $15, which includes lunch. There will be no preregistration this year.

The meeting program offers a range of subjects. Workshops will be a full hour long to allow plenty of discussion, and for the most part, they will be built around farmer-scientist pairs of presenters. Participants will have their choice of six topics in each of the three workshop sessions. Workshop topics and leaders follow:

Rotational and Intensive Grazing
Facilitator: Doug Henderson, Central Iowa Area Extension livestock specialist
Speakers: Warren Angus, Mt. Ayr, and Daryl Strobehn, Extension livestock specialist

Pasture Farrowing
Facilitator: Carl Neifert, Dallas County Extension director
Speakers: Dick Snyder, Cambridge, and Mark Honeyman, ISU outlying research farms coordinator

Weed Management
Facilitator: Ober Anderson, Polk County Extension director
Speakers: Harlan Grau, Newell, and Elaine Hall, ISU Extension associate

Use of Cover Crops
Facilitator: John Creswell, Central Iowa Area crop production specialist
Speakers: Dick Thompson, Boone, and Steve Barnhart, ISU forage specialist

Social Side of Sustainable Agriculture
Facilitator: Rick Exner, Extension PFI coordinator
Speakers: Ron Rosmann, Harlan, and Gordon Bultena, ISU Sociology Dept.

Landlord-Tenant Relations in Sustainable Agriculture
Facilitator: Bill Shimon, First Interstate Bank
Speakers: Paul Fitzgerald, Forest City banker, and Mike Prohaska, real estate officer from Des Moines

Featured speakers are the now familiar duo of Tom Frantzen and Rick Cruse, ISU agronomist. Cruse, whose field is soil management, has worked with Frantzen on narrow strip intercropping. The strips were shown at the PFI field day last Aug. 15. Cruse and Frantzen will recap two years of their joint effort and several more years of solo work.

Extension plans the meeting to be a stepping stone to greater grassroots sustainable agriculture activity. In the interest of sparking future local demonstrations and field tours, those attending the conference from the central Iowa area will be invited to sit with their county agriculturalist at lunch.

IOWA STATE UNIVERSITY
EXTENSION

EXTENSION PROGRAM SCHEDULE:

9:00 a.m. Registration and coffee
9:30 Welcome: Bill Shimon, farm manager for First Interstate Bank
9:40 Strip Intercropping: Tom Frantzen (PFI) and Rick Cruse (ISU)
10:40 Break
11:00 Workshops - Session I
12:00 p.m. Lunch - by county
1:00 Workshops - Session II
2:00 Workshops - Session III
3:00 Open Forum - with speakers in workshop rooms
3:30 Adjourn

HERB CONFERENCE SPARKS ACTIVITY

Announced in the last newsletter issue, a conference on *Herbs As a Cash Crop* took place Sept. 8, sponsored by PFI and Kirkwood Community College. The featured speaker was Richard Allen Miller, a consultant from Oregon. Those at the conference also attended workshops on value-added processing, drying and handling, and creative advertising. The Kirkwood Rural Development Center added an enjoyable touch by serving an "herbal" lunch of garden vegetables and aquaculture fish.

Total registration for the meeting was more than 100, and many took an active interest in the program. Several different types of herb growers were represented. Richard Miller's concept is sizeable operations, largely mechanized and selling in bulk to processors and packers. That market includes culinary herbs and tea, but also the pharmaceutical and chemical industries.

Several people at the conference were already involved in commercial herb production, but generally in smaller operations that do their own processing and that market locally under their own names. This approach is more in line with the workshops offered on herb crafting and dried ornamentals.

Richard Alan Miller stirred up the audience with his approach to herb marketing.

Another group is just looking at the possibility of growing herbs commercially. They may have experience with herbs in the garden, or they may have access to land and standard farm equipment that could be used in an herb enterprise.

Everyone wants information. That is a conclusion drawn from a follow-up survey of conference participants by the Kirkwood Rural Development Center. All 39 of the surveys returned indicated interest in a periodical news sheet on the herb scene in Iowa. Of these, 33 people stated willingness to participate in a statewide herb trial by growing a test plot of at least one kind of herb. The idea is that together we can find out what grows well here.

The Rural Development Center has called a follow-up meeting for December 8 to sit down with

The chef at Kirkwood furnished an "herbal lunch" of garden herbs and vegetables and aquaculture fish.

interested growers and determine the next steps. An additional program with Frontier Herbs of Norway, Iowa is scheduled for January. It will be up to growers and potential growers to set the direction. Kirkwood and PFI will try to facilitate as things develop. Regional marketing co-ops are one eventual possibility if people see a need.

A dozen PFI members attended the original meeting, and the organization gained an additional 29 new members from the conference. PFI will work with Kirkwood College to help generate knowledge on herb growing in Iowa and will keep PFI members informed. If you missed the conference but would like to be on the "herbs list," contact the PFI coordinator (515-294-1923) or the Rural Development Center at Kirkwood (319-398-5699).

ALTERNATIVE CROP GROWN ON RIDGES

- Tom Frantzen, Alta Vista

A desire to diversify my crops has led me to look for another ridge-till cash crop. Is ridge-till limited to just corn and soybeans (and now oats)? I belong to a tillage club in Albert Lea, Minnesota (Southern Minnesota-Northern Iowa Ridge-Tillers). Two years ago the resource director for American Amaranth visited our club looking for farmers interested in growing this alternative crop on ridges.

Amaranth is neither a grass nor a legume. It is a broadleaf annual plant, and it is a high value crop. In 1989 North American farmers grew approximately 7,000 acres. Most of the grain was popped and used in breakfast cereals. Annual consumption is increasing; thus Wayne Applegate, American Amaranth's resource director, came looking for a few adventurous ridge-till farmers to grow some under contract. I was very interested. I learned that Daniel Putnam, an agronomist with the University of Minnesota, has observed definite benefits when this small-seeded crop is planted on ridges.

I decided to plant a small acreage of amaranth in 1990. My Buffalo planter accommodated the fine seed. I used the insecticide hoppers and Buffalo's "Cynch bug" clear plastic tubes to carry the seed to the front of the seed press wheel. On June 1, I planted 1¾ pounds per acre into old soybean ridges. There are no herbicides cleared for use on amaranth, but the sweep of the planter removed the growing weeds. The amaranth emerged quickly, and with three cultivations and some hand weeding, I attained excellent weed control.

The variety I grew was numbered K432. Short plant height, early maturity, and good harvestability are its selected traits. The number K432 is being replaced with the name "Chickasaw." I don't know if my farm being in Chickasaw County has anything to do with that.

On July 7, I checked the nitrate nitrogen level in the field. Since the crop followed 59-bushel soybeans, I was surprised to find only 7 parts per million nitrate N. I applied 50 pounds of nitrogen as 28% urea ammonium nitrate with the cultivator. The row I left as a check showed that there was a visible response to the sidedressed nitrogen.

As fall approached, I became concerned about my first amaranth harvest. The plant is nondeterminate, so it sets seed until it is killed by a hard frost. It does not have a weather-proof covering for its seed like a soybean pod or a corn husk. Bad weather or an early snowstorm could easily ruin the crop. Would it be hard to combine, I wondered. Would it yield?

Tom Frantzen combining ridge-till amaranth.

The temperature fell to 24°F on the 7th of October. The frost killed most of the plants, but colder weather, like 20°F, would have improved its drydown.

I combined the amaranth on Oct. 16. Wayne Applegate assisted me in adjusting my 717 New Idea combine. I have a John Deere row crop soybean head adapted to my Uni system. The John Deere head easily cut the crop. My New Idea combine had no problem with threshing and cleaning the grain.

Except for the fact that the grain moisture was 17 percent, harvest was easy. I placed the amaranth on a hay rack with a very tight plywood floor and allowed it to dry before sending it to Bricelyn, Minnesota for processing.

The amaranth yielded about 1,400 pounds per acre. This is considered a good yield. As with any specialty crop, the price and delivery terms were agreed to in advance. I plan to grow a larger acreage in 1991.

Amaranth is a specialty crop with its own special problems. The seed is tiny, and stand establishment can be tricky. It has its own disease and insect problems. Who will develop herbicides and insecticides for a small-acreage crop? The high nutrient value of the grain and its promise as a forage crop should propel amaranth to wider acceptance.

RODALE IOWA PROGRAM SET FOR JAN. 11

Jim Tjepkema, Rodale Midwest coordinator, has scheduled a conference in Des Moines in conjunction with a meeting of Rodale cooperators. Both PFI and the Central Iowa Area Extension Service have assisted with the program and arrangements. The meeting will take place Friday, Jan. 11, at the University Park Holiday Inn, off the University Ave. exit of I-35/80. Cost is $15, which includes lunch.

The day's schedule is loaded with a variety of unique and useful presentations with some new and old faces. Take a look:

8:00-9:00 a.m. Registration
9:00 Welcome - Jim Tjepkema of Rodale, John Creswell, ISU Extension area crops specialist, and Rick Exner, Extension PFI coordinator
9:25 Richard and Sharon Thompson - A Working System: Narrow Strips, Cover Crops, Ridges, and Rotation
10:40-10:50 Break
10:50 Practical Cover Crops - Rhonda Janke of the Rodale Research Center and Carmen Fernholz, Rodale cooperator
12:10-1:00 p.m. Lunch
1:00 Working for Wildlife ...
In Washington - Ann Robinson, formerly with the Izaak Walton League
On the Farm - Pat Schlarbaum, Iowa Conservation Commission Nongame Species Program
2:10-2:20 Break
2:20 Intensive Grazing - Making the Most of Your Pasture
Jim Gerrish, Linneus, MO Forage Systems Research Center
John Cowles, PFI cooperator from Bloomfield
3:50 Final Comments
4:00 Conclude

John Cowles explained paddock layout for two intensively managed fields at the Davis County tour.

SUSTAINABLE PROJECTS 1991 PROPOSAL FORM

PRACTICAL FARMERS OF IOWA

WITH SUPPORT FROM THE NORTHWEST AREA FOUNDATION, ST. PAUL, MN

Sustainable Projects is designed to allow citizens of Iowa to carry out activities that focus on agriculture and the environment. Sustainable agriculture has been described as preserving the soil and water resources as well as the people involved in agriculture. What could a Sustainable Project be? Maybe you want to undertake an on-farm trial like those used by the farmer cooperators in Practical Farmers of Iowa. Maybe you would like to create a specific program for the local school or FFA that teaches about the relationship of farming to the environment. Perhaps you need support to have an educational booth at the county fair. Maybe you could use some funding to bring your community leaders together on a related issue. Be creative!

Proposals for up to several hundred dollars will be accepted. (PFI cooperators, for example, receive as much as $350 for an on-farm trial.) It is legitimate to include in the proposal payment for your own time. Itemize labor and other costs in the budget you submit. Large equipment purchases will not be funded; however, equipment leasing may be used in proposals to defray equipment costs.

In return for funding your Sustainable Project, we ask that you agree to share both project results and the *process* that you went through carrying out the project. That will help us to build on past experience and share the successes of the program. A credible "feedback," or reporting commitment is one of the criteria on which proposals will be evaluated.

Projects will be chosen by a committee consisting of PFI members and board representatives, the PFI coordinator, and representatives of ISU, including the Leopold Center for Sustainable Agriculture. Proposals for 1991 are due by Feb. 1. Committee decisions will be announced by March 1.

Please return this proposal form to: Practical Farmers of Iowa, 2104 Agronomy Hall, Iowa State University, Ames, Iowa 50011

Name _____

Address _____

Zip Code _____ Telephone _____

(OVER, PLEASE)

This form must be typed. You may use additional paper.
Please include an itemized budget.

Please describe the problem that this project will address and why there is a need for the project.

Please describe what you will do in the planned project, itself. Be specific.

How will you communicate to the public about the project? What kind of reporting to Sustainable Projects will you carry out?

What is the amount of money you need to carry out the proposed project? Please itemize.

SIMULTANEOUS CONFERENCES IN FEBRUARY

National Ridge-Till Conference Sioux City, Feb. 11-12

This year's National Ridge-Till Conference (NRTC) will be held in the Sioux City Convention Center, Feb. 11 and 12. The meeting will run from 10 a.m. Monday to 5 p.m. Tuesday. On the program are more than 40 panelist-speakers, including farmers from eight states and agricultural scientists from the University of Minnesota, Purdue University, Iowa State, University of Nebraska, and the USDA in Ohio. Several PFI farmers are on the program as panelists, including Dick and Sharon Thompson, Al and Laura Hagensick, Tom and Irene Frantzen, and Mark Mays. The number of panelists was reduced this year, so people attending will have the opportunity to hear about ¾ of the presenters over the course of the meeting.

Because this is the first NRTC to take place in a convention center, a formal, sit-down banquet will be served Monday night. The featured speaker at the banquet is David Okerlund, a transplanted Iowan who is now a minister in Cortland, Nebraska. Because of the banquet, the cost of attendance has risen this year. It is $50 for preregistration by mail or telephone through Feb. 2, and it's $65 at the door. There will also be a spouses' program offered as an option. It will include a "shopping spree," the banquet, and other activities; cost is $40 preregistered and $50 at the door.

All room arrangements should be made through the Sioux City Convention Center: (712) 279-4800. The Hilton is accessible by skywalk, and is offering rooms for a flat rate of $49 per room per night. Up to four people may stay in a room for this rate. Other hotels are also offering discount prices, and the Convention Center will give you that information. To get the discount it is necessary when making reservations to specify that you are with the NRTC. To register for the conference itself, call (402) 564-3244 and ask for Sue McCoy, or write Dept. NRTC, P.O. Box 848, Columbus, NE 68601-0848.

Leopold Center Conference Set for Feb. 11-12

The second annual conference of the Leopold Center for Sustainable Agriculture will be Feb. 11-12, 1991, in Ames, Iowa. The conference is the second in a series of meetings to bring together farmers, researchers, conservationists, and extension personnel to discuss and share ideas about sustainable agriculture in the Midwest.

Farmers will speak about their experiences with sustainable agriculture and scientists will report on progress of research sponsored by the Leopold Center. The conference will provide a forum for scientists and farmers to identify research priorities in sustainable agriculture, and showcase most of the Leopold Center's research in a poster session.

PFI members will be receiving details of the conference soon. For additional information, contact the Leopold Center for Sustainable Agriculture, 126 National Soil Tilth Building, ISU, Ames, Iowa 50011; (515) 294-3711.

PESTICIDE-FREE GRAIN – A MARKET?

The announcement by Pioneer Hi-Bred International that the company will buy "pesticide-free" grain under the name Better Life® has caused a flurry of newspaper articles and radio interviews this fall. After an article on the program appeared in *Farm Journal*, Pioneer received more than 500 calls from interested farmers around the country. Dale Millis of Pioneer says the company will pay premiums of about 35 cents per bushel on corn and $1 per bushel on soybeans certified by the grower to have been raised without herbicides or insecticides. In fact, a number of companies around Iowa have been looking into this market niche. Does this represent a windfall for sustainable farmers?

The promotion of "pesticide free" could be regarded from at least two points of view. On the one hand, it can be seen as a *dilution* of standards for organically grown grain. Organic standards include not only a pesticide ban for at least three years prior to marketing the crop but also strict rules about the sources of crop nutrients that are permitted. To an organic farmer, this development may seem like an attempt to cash-in on the organic market without "paying the dues." The residue test used by Pioneer requires only that pesticide levels be within FDA guidelines, a criterion that any grain in Iowa should pass. It seems unlikely that a program with these standards will break into the organic market significantly.

Most PFI farmers are not certified as organic, but quite a few grow row crops without herbicides or insecticides on at least part of their land. They have been shut out of the organic market by the fertilizers they use. These farmers would generally agree with many of the goals of organic farming – building the soil, making use of soil biological processes, etc. – and would disagree mainly on the *means* to those ends. The new market for grain could reward them for their efforts to farm in a more environmentally sound manner.

Shipping Required

The press has generally explained the premiums as the result of "lower yields" where pesticides are not used. Many PFI farmers would take issue with the assumption. Over the past four years, Practical Farmers of Iowa cooperators have shown in replicated on-farm trials that there does not have to be any yield reduction at all. And the cost of the mechanical operations substituted is consistently less than the herbicide cost. Most PFI farmers would agree that greater management and labor are required in nonchemical weed control, but not that it costs more per acre.

The additional cost incurred potentially comes from transportation of the grain. Pioneer is requiring that farmers deliver the crop to Clinton, on the Mississippi River. That is the location of Pioneer's major client for the corn.

The company held local meetings last winter, including one in Cedar County that PFI cooperator Mark Mays attended. Mark concluded that it was not worth it for him because of the shipping. His farm is only about 60 miles from Clinton. He said that for him the hauling cost would have been greater than the 35-cent premium for corn.

An important factor is whether a farmer has a grain truck. Phillip Baumel, ISU professor of ag economics views long distance hauling this way: the farmer has to handle the grain whether it's going two miles or 200. The license, insurance, and initial cost of the truck are also independent of hauling distance. Further, he says, most of the wear and tear on these vehicles comes out in the field, not on the road. Using these assumptions the following approximate figures are per bushel-mile costs for a farmer hauling grain extra distance on paved state roads and gravel roads:

	Paved state roads	gravel
300 bu wagon	0.85¢	0.99¢
miles per ¢	1.2	1.0
600 bu tandem wagons	0.53¢	0.62¢
miles per ¢	1.9	1.6
300 bu single axle truck	0.32¢	0.47¢
miles per ¢	3.1	2.1
600 bu tandem axle truck	0.18¢	0.26¢
miles per ¢	5.6	3.8
900 bu semi trailer	0.11¢	0.16¢
miles per ¢	8.9	6.1

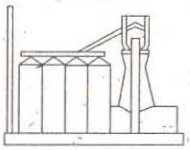
To get shipping cost per bushel, multiply the appropriate figure above by the one-way distance from origin to destination. These numbers reflect *only* fuel, oil, tires, driving, and some maintenance. They do *not* show the basic costs mentioned above that a farmer would incur anyway in getting grain to market.

Commercial shipping by semi-trailer *should* involve all those basic handling and depreciation charges up front. And it may save a farmer those expenses on his own equipment. According to a prominent Iowa grain shipper, current commercial rates per bushel-mile for trucking to the Clinton area are approximately 0.11¢ per bushel-mile, assuming no back-haul. Truckers are often unwilling to pick up at

the farm, so rates could be higher. Even so, this is competitive with the farmer-owned semi trucking shown in the table and lower than average transportation costs figured by Pioneer. At these prices, the independent truckers are not covering fixed costs like depreciation and licensing.

To figure how far to go for a premium, look at the table for "miles per ¢." That is the break-even distance to market you can afford to ship for a one cent premium. Remember, add to the premium the amount that the Clinton basis price is over your local price.

Pioneer Program



While Pioneer has no plans to add more shipping points for corn, additional receiving sites for soybeans may be added over the winter. Additional sites could be in Iowa or elsewhere. With Clinton the receiving station, a $1 premium on soybeans could be profitable for some growers in eastern Iowa. The company's customers need clear or light hilum beans. The list of acceptable varieties is short: Pioneer 9111 (grown in Minnesota and S. Dakota), Pioneer 9202 (grown in northern Iowa and Minnesota), Pioneer 9181 (discontinued), and Beeson 80 (adapted to Indiana and eastern Illinois). Gene Weir of Better Life says Pioneer breeders are now working on soybean and corn types to better meet this specialty market.

The Better-Life contract for 1990 lists a premium of 35¢ over the base price for mid season and late season yellow hybrids. (Incidentally, Pioneer numbers may be required in the future.) Base price is the cash market quote at Clinton, and the grower can sell the grain in 1,000 bushel increments until Sept. 1, 1991. If the grower elects to defer pricing beyond the date of delivery, he or she must sign a deferred pricing agreement and pay a 2¢ per month deferred pricing charge. If the company requests delivery before the grower elects to price, there is no monthly charge.

Growers may sign a contract with Pioneer anytime from before planting until after the crop is in the bin. Pioneer says they performed at least two spot checks on the fields that were contracted before the last growing season. Better-Life is still looking for additional 1990 corn. The only quality control on late-contracted grain is the pesticide residue analysis and the word of the farmer.

West Central Co-op

West Central Co-op is considering a similar program for soybeans. According to Larry Tomsen of West Central, the potential market is through the new bean processing facility that the Nichii Company of Japan is establishing at Jefferson. The program would use residue testing, and it would probably take a variety of white hilum soybeans. Unfortunately, Tomsen has no idea what premium the Nichii organization will pay farmers, the size of orders from buyers, or whether the orders will be for "pesticide-free" or organic.

National Farmers Organization

Another marketing outlet is through the National Farmers Organization. Tim Ennis of the NFO has been marketing organic grain and produce for members for some time as part of the NFO marketing program for specialty crops. He reports that premiums for organic corn run 50¢ to $1 over the regular market price. Some organic soybeans are selling for around $9.50 at the farm this year. Premiums for certified organic can vary greatly with demand. For the past few years, the Northern Plains Sustainable Agriculture Society in the Dakotas has set a price for organic soybeans that has carried some weight with buyers nationwide, according to Ennis.

The NFO markets organic grain for several members of organic farming organizations as a service to its members. Presumably if NFO members had grain conforming to the "pesticide free" standard, the organization would attempt to help them sell that as well.

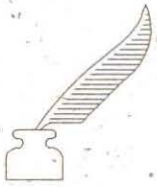
So?

Where does all this leave the farmer? Is there really a market for pesticide-free grain? There seems at least to be fairly widespread interest on the part of middlemen to get involved as one develops. As a farmer, you can take advantage of low commercial trucking rates to bring your shipping costs down to that of farmer-owned semi trucking. On the other

hand, if pesticide-free means lower yields for you, or if a company requires that you grow lower yielding varieties for these specialty markets, you should do some figuring before you scrap your present marketing plan.

Here are phone numbers for individuals referred to in this article:
Dale Millis, Pioneer Better-Life – 800-356-0393
Larry Tomsen, West Central Co-op – 515-386-4144
Tim Ennis, National Farmers Organization – 515-292-2000

NOTES AND NOTICES



♪ Nominations In Order

Bob Graaf, in District 1, and Ron Rosmann, District 4, are completing two-year terms on the PFI board of directors. Rosmann is not eligible for reelection, having served two consecutive terms. Practical Farmers of Iowa members are invited to nominate individuals for their district board representatives in northwest and southwest Iowa.

Ron Rosmann will also step down as president of Practical Farmers of Iowa. All PFI members are invited to place names in nomination for PFI president.

You may make nominations through any PFI board member. (Board members' phone numbers are listed on the back.) The new officers will be elected by the members attending the winter membership meeting on Dec. 12.

♪ PFI Fall Membership Drive

In October, all current PFI members received a letter from President Ron Rosmann asking for their continued support in 1991. If you have misplaced that reminder, you can still renew by filling out the form at the back of this newsletter!

Renewing and new members have the option this year of obtaining a free leaf tissue test or four free soil nitrate tests. The place to indicate your choice is on the PFI Membership Agreement and Information Form. Rosmann also offered an incentive for local PFI members to help with the fall membership drive. A new PFI cap will go to anyone who brings in two new members.

♪ PFI *Sustainable Projects 1990* Invites Ideas

For the second year Practical Farmers of Iowa will encourage creative ventures that relate to agriculture and the environment. *PFI Sustainable Projects* is a program that makes grants to Iowans who request support for grassroots activities in agricultural sustainability. If you've had an idea like this growing in your mind, give some thought to filling out the application on pages 7 and 8 of this newsletter.

♪ PFI Invited to American Society of Agronomy

PFI President Ron Rosmann (Harlan) and ISU Extension PFI Coordinator Rick Exner were invited to San Antonio, Texas, in October to address the American Society of Agronomy. The session in which they spoke was entitled "Real World Research," and it provided a forum for a number of on-farm demonstration and research projects. The PFI project that was presented was unique in the degree to which farmers, themselves, set the research agenda.

Several other papers also examined trials with long, narrow strips. Statistical error is usually lower when entire strips are harvested than when only subplots of a few row-feet are harvested. At least one scientist disputed that this statistical error reflects the actual uncertainty in a trial. Vigorous debate is certain to continue, and it should advance our understanding of on-farm trials.

♪ What's Next? PFI Farm Caps!

So you thought this was a no-frills organization that would never stoop to commercialism? You're right. However, the board bowed to the will of a shrill majority and agreed that Practical Farmers of Iowa needs an advertisement that can be worn on the head. The lack of this item of apparel was made all the more embarrassing the past two years by the colorful cap that Farm 2000 made for itself.

Now PFI members will be able to hold their heads up! The order has been placed for dark blue denim caps that will bear the PFI logo in black and red against a white background. Summer caps will have white mesh in back. Both the solid denim and the mesh caps will cost $6.

The manufacturer says the caps will be available by the PFI winter meeting, Dec. 12. The hats are made by the company that makes the *New Farm* caps. They have more cotton in the headband than many other brands and are quite comfortable to wear.

Remember, PFI needs some "headhunters." If you bring in two new members, PFI will say thank you with the cap of your choice. That's better than a Bart Simpson T-shirt!

♪ Minnesota Internship Announced

The Land Stewardship Project, a private, non-profit organization involved in farm and conservation issues, is seeking an intern to work with the Stewardship Farming Program based in southeast Minnesota. The internship is full time, running from the middle of May to the end of December 1991. The intern will assist LSP staff in implementing and monitoring on-farm experiments chosen and developed by participating farmers.

A student in agricultural or environmental sciences is preferred, and a farm background would be helpful. The intern must have a reliable car. Mileage reimbursement is 25.5¢ per mile. The Salary is $6 per hour minimum, depending on experience.

Application deadline is March 1, 1990. Send a resumé and a letter describing your interest to:

Land Stewardship Project
P.O. Box 815
Lewiston, MN 55952
Contact person: Richard Ness
(507) 523-3366

♪ Northeast District Winter Meeting

Tom Frantzen is organizing a winter meeting for PFI members and others in the northeast part of the state. The meeting will take place at 1:30 p.m. on Tuesday, March 12, in the church basement in St. Lucas. The focus will be livestock, with particular emphasis on manure management and intensive grazing. The program is still coming together at this writing, but some speakers are set. PFI cooperators Mike Reicherts and Dick Svoboda have agreed to report on several years of trials comparing manure to purchased fertilizer. Extension PFI On-farm Trials Coordinator Rick Exner will review the results from four years of on-farm nitrogen management trials.

♪ Diversification Information

Are you thinking of branching out into a new enterprise or practice? It is important to have a solid information base before you get too far out on that

Drying off on the porch: the field day at Harlan and Sharon Grau's.

limb. Here are a couple of sources you may not have considered.

PFI recently cooperated with Kirkwood College on an herbs conference. The Kirkwood staff proved to be knowledgeable and friendly. There is a good chance that the Rural Development Center at Kirkwood Community College has information that will be useful to you. They have worked with farmers on diversification projects for years, from amaranth to woodworking. Give them a phone call at 319-398-5699, or write: Rural Development Center, Bldg. 31, Kirkwood Community College, P.O. Box 2068, Cedar Rapids, IA, 52406.

If you've tried everything else with no luck, your "ace in the hole" may be "ATTRA," which stands for Appropriate Technology Transfer for Rural Areas. Think of it as a trouble shooter for sustainable agriculture. If the information exists, they can get it. ATTRA was a political football for a few years but now has settled down in Fayetteville, Arkansas, under the wing of the U.S. Fish and Wildlife Service. Their assistance is free (unless you pay taxes), and they have a WATTS line: 800-346-9140. Mailing address: ATTRA, P.O. Box 3657, Fayetteville, AR, 72702.

♪ Farmers Volunteer for Oats Cover Study

As reported in the last issue of *the Practical Farmer*, scientists at the National Soil Tilth Laboratory have begun a study of the use of oats as a winter cover crop following soybeans. As a result of the newsletter article and announcements made at field days, several PFI members are now participating in the project. In October, researchers drilled oats on the farms of Don and Sharon Davidson (Grundy County), Dean Vantiger (Des Moines County), and the Dordt College Ag Stewardship Center, in Sioux County. Oats were also drilled and broadcast at the Lippert Research Farm, near Ames.

Crop growth and weeds following the cover crop will be measured, as will any effect on soil nitrate levels. Growth of the oats this fall led one researcher to speculate that next year they may seed at leaf-yellow stage of soybeans instead of after harvest.

ETHANOL FROM CORN – A BALANCE SHEET

– Michael Duffy, ISU Ag Economics

(Editor's note: ISU Professor of Agricultural Economics Michael Duffy recently circulated a memo on the economics and energy account of corn production. Some of his previous work had shown that in terms of its value for cattle, corn has less feed energy than the energy that's required to grow it. But cattle are not efficient users of the energy in corn. The following excerpts from the memo examine the energetics of producing ethanol from corn.)

The feed value (of corn) is lower than the fuel value. With respect to the fuel value for corn, I have found the following. Each bushel of corn can produce 2.5 gallons of ethanol with dry milling and 2.6 gallons with wet milling. (Call it 2.55.) There is approximately 76,000 BtU's of energy in a gallon of ethanol, and it takes approximately 55,000 BtU's of energy per gallon to convert corn to ethanol. That means a bushel of corn can contain ethanol fuel energy of roughly 53,550 BtU's, {(76,000 - 55,000) × 2.55}.

With respect to the energy used in corn production in Iowa, if we take the 1989 fertilizer use, we have approximately 127 pounds of N, 48.45 pounds of P_2O_5 and 57.27 pounds of K_2O. These rates are (derived by) taking the percent of acres treated times the average rate per treated acre.

Fertilizer energy use is:

N 127 pounds @ 32,900 BtU's/lb
= 4,169,088 BtU's/acre

P_2O_5 48.45 pounds @ 17,668 BtU's/lb
= 856,015 BtU's/acre

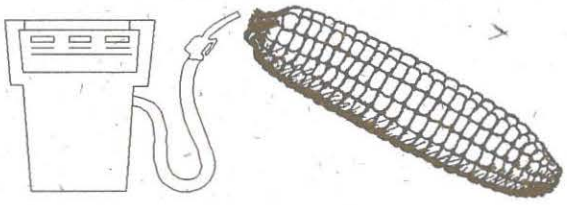
K_2O 57.27 pounds @ 6,033 BtU's/lb
= 345,510 BtU's/acre

Using the 1985 Pesticide Use Survey, there is approximately 3.23 pounds active ingredients of pesticides applied to the average corn acre, for another 445,740 BtU's. And using the ISU Extension estimate, there is approximately 6.85 gallons of diesel fuel used to produce one acre of corn using conventional practices. This would add another 945,000 BtU's of energy.

Altogether, then, the energy used for fertilizer, pesticides, and fuel comes to roughly 6,761,353 BtU's per acre. Using these numbers, it takes roughly the ethanol energy equivalent of 126.3 bushels of corn *just to produce* the corn. Beyond the 126 bushels there is a positive net energy gain with respect to ethanol production from corn.

A recent USDA publication (March 1989) looked at the economics of producing ethanol from corn. They found that with existing technology and with $2 corn the break-even (price) with respect to oil prices would be approximately $25 per barrel. If the federal subsidies are removed the price would increase to $40 per barrel. This is not a totally fair comparison because ethanol is a finished product whereas crude oil has to be refined for use. I still haven't found an exact conversion but the break-even price will be less if you just look at the gasoline equivalents.

I also have been looking into the environmental issues surrounding ethanol production. It is a cleaner burning fuel in that it is oxygenated. However, there are some aldehydes emitted from the burning of ethanol. From what I have been able to find, this environmental problem is less of a concern than the CO_2 emissions. For some reason the EPA has limited the amount of ethanol that can be mixed with gasoline to 10 percent. I have not been able to find a reason for this restriction. In Brazil they burn either a 22 percent mixture or else straight ethanol.



FUNGUS MAY SOLVE CYST-NEMATODE PROBLEM

From the *Sustainable Agriculture Network*, a newsletter for the Arkansas-Oklahoma region, comes this news: University of Arkansas Agricultural Experiment Station scientists are working with a fungus that parasitizes nematode pests of soybean, cotton, tomatoes, sugar beets, and other crops.

Initial tests indicate that "Arkansas Fungus 18" (ARF18) is effective for soybean-cyst nematodes and root-knot nematodes, according to Professor Robert D. Riggs of the U. of A. Department of Plant Pathology. In 1986, ARF18 was discovered by research associate Dong-Guen Kim in soil samples from a field at the Cotton Branch Experiment Station at Marianna, AR. It was also found in samples from a field at the Pine Tree Branch Experiment Station, where it has virtually eliminated cyst nematode as a pest.

"We were running a screening procedure which extracted dead as well as live soybean-cyst nematodes, and we noticed many dead juveniles," Riggs said. The ARF18 fungus was isolated from the dead juvenile nematodes.

Soybean-cyst nematodes penetrate the soybean root as "eelworms" and grow to maturity there. The egg-filled bodies of dead females harden into cysts that protect the eggs from heat, drying, chemicals, and most other threats. Electron microscopy showed that the thread-like hyphae of ARF18 penetrate the nematode cyst and the eggs within, consuming the juvenile nematodes inside the eggs.

In greenhouse experiments nematode populations were reduced by the fungus in as little as one month, according to Kim. It is sometimes difficult to even find the cyst nematode in fields a year after treatment with the fungus. In fields of continuous soybean where the fungus is present, nematode numbers fluctuate up and down over the years, suggesting a dynamic balance between fungus and nematode populations. The researchers are working to determine the best season, frequency, and method to treat fields with ARF18.

Riggs estimates that five more years of research will be needed before they know whether ARF18 can be used for practical nematode control, but he is optimistic that it can be. Riggs and Kim determined that the fungus survives well under refrigeration, and that it persists in dry or normally watered soil for at least 90 days. Soil organisms are sometimes very

region-specific, but the ARF18 fungus has also been isolated in soil from North Carolina and Maryland. It has not been found to infect or cause injury to rice, cotton, soybean, or wheat. Trials are under way to learn if the fungus damages other plants. It is known to grow well on nutrient media, which can be processed into granules for storage and application of viable fungus to crop fields. The two researchers have sought a patent on a granular formulation used to apply the fungus.

TESTIMONY ON *ALTERNATIVE AGRICULTURE*

The National Academy of Sciences (NAS) report, *Alternative Agriculture*, has given rise to much debate. The report suggested that there are benefits to the model currently known as sustainable agriculture, and it offered several farm case studies as examples of the creative management that can move a farm in the direction of sustainability. John Pesek, Iowa State University Agronomy Department, chaired the committee that produced the report. In this position he has frequently been called on to justify the findings reached in the book.

In early June, Pesek testified in Washington, D.C., before the Joint Economic Committee on Alternative Agriculture. The full testimony makes for interesting reading, and can be obtained through your senators or congressperson. The event in D.C. really represents an exchange between the NAS Board on Agriculture and CAST, the Council for Agricultural Science and Technology. However, some of the comments presented by Pesek stand on their own as observations on farming. A few of these follow:

- We agree that it is a complex task to compare the performance of different agricultural systems, because so many factors must be taken into account. Moreover, we agree with several CAST reviewers, and we had stated clearly in our report, that alternative or conventional is not one distinct set of practices that comprise a unique system. Rather, conventional and alternative agriculture can be thought of as representing two points on a spectrum of practices, that arise from and reflect different approaches to management....

- Farming is, after all, an inherently biological process. Farmers who practice alternative agriculture are striving through management and the careful selection of agronomic and pest control practices to turn biological processes and interactions into assets rather than liabilities. Alternative agriculture relies upon an ecological approach to evaluate both the near-term and long-run consequences of farm management decisions so that the overall performance of a farming system can be more thoroughly understood and made more assuredly sustainable. To quote the report, alternative agriculture strives to "sustain and enhance rather than reduce and simplify biological interactions upon which production systems depend."

The degree of concern and attention to the long-term sustainability and performance of farming systems is central to the distinction between alternative and conventional agriculture. Farmers who have pioneered alternative agriculture systems tend to evaluate farm profitability over at least a few multi-year rotational cycles. They are inclined to ask questions about the impact of current production practices on the longer-term sustainability and profitability of production practices measured in terms of human health and impacts on wildlife, from the perspective of food safety, and relating to natural resource and environmental quality. Such a long-run view will be needed for agriculture to respond to society's growing concern about the environment, yet a farmer's time horizon is, as a practical matter, becoming progressively shorter, collapsed by the need to assure economic survival, comply with government program rules, and meet community norms and expectations. Farmers utilizing conventional systems share these same concerns, but tend to evaluate the performance of a farming system more narrowly in terms of per acre yields and profits in a given year. Also, they tend not to consider such a wide range of off-farm consequences or alternative cropping patterns, agronomic practices, and technologies in the

design of farming systems. A practitioner of alternative agriculture would readily consider a change in crop rotation patterns on a given field to bring a particular pest under control, or to lessen reliance on a purchased input that is becoming more expensive. A conventional producer would tend to stick with the same cropping pattern, and seek some other solution or a new production input to solve problems that arise....

- Most conventional farming systems have become very specialized. In such systems, farmers exercise management discretion over the selection of tillage and planting systems, the selection of plant varieties; levels, sources, rates, and timing of application of plant nutrients purchased off the farm; and crop protection methods, typically herbicides for weeds, insecticides for insects, and fungicides for plant diseases. Even specialized, single crop cropping systems, which include vineyards and orchards, are very complex, and confront farmers with unique difficulties and many critical choices each season.

ISU agronomy professor John Pesek

A practitioner of sustainable agriculture, on the other hand, must generally develop and apply an even more diverse set of skills.

Many of the most critical management decisions in alternative systems occur before a farmer decides what to grow on a particular acre of land. For example, the decision whether to specialize only in crop production or diversify by including a livestock enterprise on a farm is of enormous consequence in determining the practicality of many other practices.

Perhaps another example will help explain this key point. Consider two neighbors - a conventional and alternative farmer - who for some reason moved into another county and happened to settle on adjoining farms where they decided to grow the same crop in their first season. In the first year of field work, the practices they would choose to employ might differ only marginally.

Important differences between the two farmers, however, would become increasingly evident over the years, reflecting the outcome of major decisions including what crops to grow in what order, or whether to integrate crop and livestock enterprises; the crops, tillage systems, and conservation practices applied on each field in response to its topography, soil type, or other natural resource limitations; and the level of dependence on inputs purchased off the farm per unit of production (that is, the percent of gross farm income per unit of output required to pay for the principal inputs - fuel, seed, fertilizer, pesticides, and animal drugs)....

- For centuries, our ability to survive has rested upon the inclination of farmers to experiment, and in times of adversity, adapt to conditions threatening their capacity to produce enough food and fiber to sustain life. Throughout the 1970s and 1980s, innovative farmers were far ahead of most agricultural scientists in designing on-farm systems and methods to reduce cash costs, control soil erosion, limit chemical and energy dependence, and protect water quality.

Some farmers sought change to improve economic performance, others were more concerned with the environmental consequences of certain practices. Regardless of their motivation, farmers have historically proven very adept at innovation, both by trial-and-error and, in many instances, through more structured forms of on-farm experimentation. It would be a great loss indeed if we were now to

discourage farmers from trying the unproven because science has yet to document carefully all possible consequences.

It is for this reason that *Alternative Agriculture*, in its research recommendations, places considerable importance on an expansion of applied, field-level research that includes farmers as active participants in the design and conduct of research activities, and in the communication of research results. We view this as absolutely vital because the science and art of farm management has for too long been one of the major missing ingredients in the agricultural science equation. We can think of no better way to overcome this historical shortcoming than by bringing the real managers directly into the research process.

Al Hagensick was one of the PFI members to discuss sustainable farming methods in the Iowa Dept. of Ag. and Land Stewardship tent at the Farm Progress Expo.

"TRANSITION" STUDY RELEASES FIRST RESULTS

– Rick Exner, Extension PFI coordinator

For the past year Practical Farmers of Iowa and Iowa State University have been cooperating in a study of farmers entitled, "Transition to Sustainable Farming Practices in Iowa." The project was undertaken with funding from the Northwest Area Foundation, which is sponsoring similar work in Minnesota, North Dakota, Montana, and Oregon.

In the first phase of the study a telephone interview and written questionnaire were administered to both a cross section of Iowa farmers and to farmers who were members of groups specifically identified with sustainable agriculture. As a PFI member, you may have participated in this phase of the investigation.

Some of the more interesting data to come from the first part of the study relate to attitudes expressed and practices used by the cross section group ("population sample") and the "supplementary sample" composed of members of sustainable farming organizations. For example, respondents were asked to choose which one of three statements best described their farming. Results are shown in Table 1.

Farmers were asked about their use of or plans to use a variety of practices. The responses of the population sample and supplementary sample were often similar. Table 2 shows some of the items on which these two groups differ. Farmers in the supplementary group were also more likely to have reduced expenditures on purchased nitrogen (69% vs. 29%), synthetic insecticides (46% vs. 18%), and herbicides (64% vs. 15%) compared to five years ago.

Farmers in the supplementary sample responded similarly to farmers in the population sample about a number of the impacts of sustainable farming practices: production costs would decrease (87% vs. 69%), availability of production credit would decrease (17% vs. 22%), labor needs would increase (66% vs. 65%), complexity of management decisions would increase (74% vs. 68%), soil erosion would decrease (82% vs. 68%), and safer food would be produced (78% vs. 56%).

Farmers in the sustainable groups disagreed with the population sample on some of the broader outcomes of these specific impacts – that: crop yields would decrease (23% vs. 61%), net profit would increase (65% vs. 21%), financial risk would decrease (53% vs. 19%), and that rural communities would benefit (66% vs. 22%).

TABLE 1. RESPONSES TO SELF-DESCRIPTION QUESTION

Item #1:
"My farm relies on purchased inputs for profitability, and I am receptive to new technologies that can help me increase my production levels."

Item #2:
"My farm must remain profitable, and I'm consciously trying to reduce my fertilizer, pesticide, and/or energy inputs."

Item #3:
"My farm has been using sustainable farming practices for some time, and I will continue to experiment with techniques that are both profitable and reduce my dependence on purchased inputs."

Self-Rating Item	Population Sample	Supplementary Sample
	-Percent-	
#1	21	4
#2	55	35
#3	24	61
	100	100

TABLE 2. FARMERS INDICATING PRESENT USE OF PRACTICES

Practice	Population Sample	Supplementary Sample
	-Percent-	
No-till, ridge-till, or strip till	18	47
Late spring soil nitrate test	4	29
Most N for nonlegumes is provided by commercial fertilizer	88	56
Regularly use hormones and/or antibiotics on cattle	64	38
Regularly use antibiotic feed additives on hogs	79	56

A more detailed summary of these results may be obtained by contacting Gordon Bultena, Dept. of Sociology, at ISU. The next phase of the study calls for personal interviews and on-farm agronomic evaluation on a selected group of about 120 farms. These farms will be chosen to represent "sustainable," "conventional," and various kinds of transitional operations. Iowa State University researchers are presently working to select the farms. Personal interviews will begin this winter, and agronomic field observations will get underway next spring.

PFI Membership Application and Renewal Form

Name _____

Address _____

City _____

County _____

State _____

Zip Code _____

Phone # ( ) –

This is a ___ new membership
___ renewal

Do you derive a significant part of your income directly from farming?
Yes ___ No ___

Please enclose check or money order for $10.00 payable to "Practical Farmers of Iowa" and mail to:

Practical Farmers of Iowa
RR 2, Box 132
Boone, Iowa 50036

CORRESPONDENCE

Correspondence to the PFI directors' addresses is always welcome. Member contributions to *the Practical Farmer* are also welcome and will be reviewed by the PFI board of directors.

District 1 (Northwest): Bob Graaf, RR 1, Palmer, 50571. (712) 359-7787.

Associate board member for District 1: Paul Mugge, RR 2, Box 48, Sutherland, 51058. (712) 446-2414.

District 2 (North Central): Dick Thompson, RR 2, Box 132, Boone, 50036. (515) 432-1560.

Associate board member for District 2: Allyn Hagensick, RR 4, Box 57, Hampton, 50441. (515) 456-2945.

District 3 (Northeast): Tom Frantzen, RR 2, New Hampton, 50659. (515) 364-6426.

District 4 (Southwest): Ron Rosmann, RR 1, Box 177, Harlan, 51537. (712) 627-4653.

Associate board member for District 4: Vic Madsen, RR 3, Audubon, 50025. (712) 563-3044.

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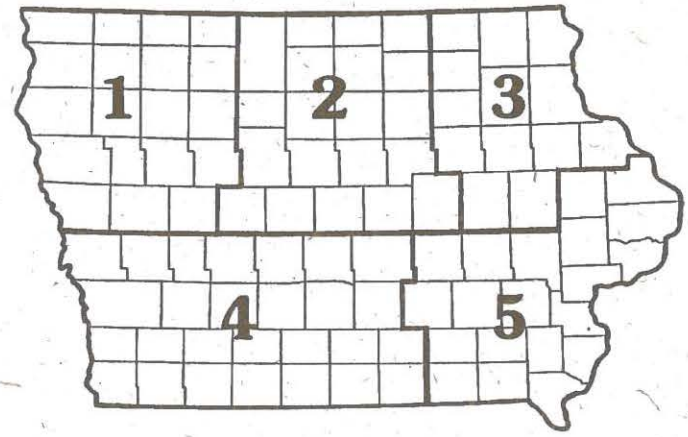
Coordinator: Rick Exner, Room 2104, Agronomy Hall, ISU, Ames, Iowa, 50011. (515) 294-1923.

PRACTICAL FARMERS OF IOWA
MEMBERSHIP DISTRICTS



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