

the Practical Farmer

Practical Farmers of Iowa newsletter

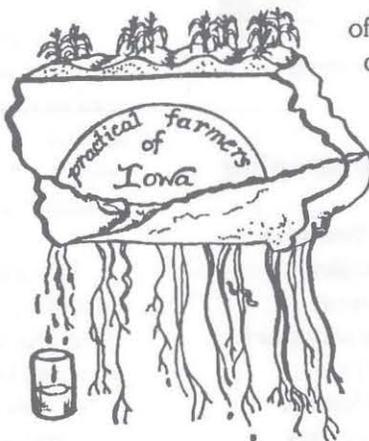
Volume 3, #2
Summer, 1988

Board of Directors Meets

The PFI board of directors met on Saturday, July 9. One of the more important topics on the agenda was a report on the progress toward hiring a full-time coordinator for PFI. As you remember, PFI now has the money available to hire a coordinator. The position was advertised, and late in June, three of the applicants were interviewed in Ames. Each applicant presented a one-hour seminar and also talked individually with people from PFI and Iowa State Extension. As a result of the interviews, the board decided to advertise the position again. During the interim until a new coordinator would be hired the PFI directors, especially Dick Thompson, will still be coordinating the experiments and field days.

The PFI directors also talked about ways to assure the quality of stops on tours and of experimental plots. Both should be easily accessible. Also reasonable records should be maintained for experimental plots.

PFI director Mark Mays will represent PFI at the international conference "Agricultural occupational and environmental health: policy strategies for the future," to be held in Iowa City in September. The conference will include in a farm advisory panel, many influential groups from around Iowa such as commodity organizations, the Farm Bureau, and Prairie Fire, in addition to Practical Farmers. The conference is sponsored by the University of Iowa and Iowa State.



Board members discussed the value of results of experiments performed under unusual circumstance like this year's weather. They decided that although all results should be recorded, the value of the results depends on the experiment. Results should never be discarded just for convenience. Scientific integrity requires honesty in the recording of results. At the same time results from a highly irregular year need careful interpretation before they can be used for making future decisions.

The board also discussed publicity for the PFI farm tours this summer.

Cooperators Make Plans

The PFI cooperators met in Ames on Tuesday, April 12 to plan for the 1988 crop year. Whereas in 1987 there were 11 cooperators, this year we have a full two dozen. President Dick Thompson brought these 24 families together to let them hear about some new options and to get commitments for field days and field trials.

Tom Morris, a graduate student under Fred Blackmer, explained the soil nitrate test. Mike Duffy, Extension economist, explained what he would like from cooperators in the way of time keeping. Dick reemphasized the importance of randomization and replication — and handed out field flags.

There are enough cooperators around the state this year that it will be quite easy for you to attend a PFI field day. Bring a neighbor!



Discussion at the close of the cooperators meeting.

Relationship With Extension is Developing

By mid-March, we had thrashed our way through a mountain of paperwork connected to PFI's project funding and the subcontract with the Cooperative Extension Service. Those very helpful people who saw it through include: George Hallberg, of the DNR's Geologival Services; Jerry DeWitt, Associate Dean of Extension; Linda Wilson, a writer for Extension; and Gerry Miller and Steve Barnhardt, ISU Extension agronomists.

With that behind us — and a little money starting to ooze through the pipeline — attention turned to choosing the PFI-Extension Coordinator. It begins to look as if no one will be hired in time to be much help this cropping year. There have been many applicant inquiries, but so far the search committee has not been able to offer the job to someone who would take it.

Cover Crop Field Day Held

Dick and Sharon Thompson, of Boone, held a spring field day April 26 that featured winter cover crops. Sure enough, it rained. In spite of — or because of — the weather, some 140 people attended. There were a lot of new faces in the crowd, too, including Doug Carlin, a

USDA scientist who has come to the Tilt Lab to work with cover crops.

Sharon and Dick narrated a slide show about how and why they seed cover crop mixtures like hairy vetch/oats/rye. Not only do these ground covers keep the soil's biological fires stoked-up, they also keep nutrients near the soil surface in a form that later crops can use. Then, of course, there is the soil conservation aspect. Many local SCS agents are giving credit for winter cover crops in farm conservation plans.

Ken MacNamara, Rodale extension agronomist, continued the program, discussing what he sees farmers doing with cover crops around the midwest. There was a free exchange of views and questions, with evident interest in the subject.

A farmer who uses conventional tillage wanted to know if winter cover crops are only for those who don't need to plow. The consensus was that he can use a grass such as oats or rye to achieve a fine ground cover. Spring primary tillage would eliminate rye, which can get to be a problem for ridge tillers.

The cold front came through just about the time everyone went outdoors to see the field plots, so that part of the tour went by in a flash! There was hairy vetch out there, but because of the dry spring it hadn't grown much. In fact, this spring illustrates the "flip side" of the cover crop story — that is the moisture cover crops can steal from the following crop. In a dry spring, a farmer should seriously consider killing or setting-back the ground cover early. This spring the green manure gained was probably not worth the soil moisture lost.

PFI Cooperators Test N Test

At last winter's annual meeting there was strong interest in the soil nitrogen test for corn presented by Dr. Fred Blackmer, of Iowa State. This summer PFI cooperators were among the first farmers in the state to put the soil nitrogen test to the test.

The test actually measures soil nitrates in the upper 12 inches of soil when corn is 6-12" tall. Farmers can take the soil samples and run their own analysis using a test kit. Assuming enough nitrogen has been applied earlier in the year to get "within the ballpark" of the

crop's needs, the test will give a farmer an idea how much additional nitrogen to side dress at the second cultivation. Presently the rule of thumb is 7-15 pounds of nitrogen for every "part per million" (ppm) less than 20 in the test result. In the future, this rule will have to be refined with calibration studies for different situations and forms of nitrogen.

Thirteen cooperators have sent soil samples to Blackmer to check their results against the lab's. Some cooperator results agreed almost exactly with the laboratory, and most were within 2-4 ppm of the lab value. Most results were in the range of 15-30 ppm. Those fields over 30 had usually had manure applied. Graduate student Tom Morris says the numbers tell him these PFI farmers are already using nitrogen fertilizer fairly efficiently. Last year a group of farmers in northeast Iowa submitted samples, and half of them were over 40 ppm.

Cooperators have commented about the time it takes to collect and dry samples and run the test. In some cases, spouses wound up doing the work. One cooperator was able to double his extraction speed by simply using a second funnel and running two samples at once. Tom Morris thinks the process will go quite a lot faster for people after the first time through.

The Field Day Calender!



Here it is, in living color and suitable for framing. But don't frame it yet. Take it, instead, to your co-op, supermart, church, school or truck stop bulletin board and post it!

These field days are clustered, so people will be able to see two or three farms in a single day. That allows the cooperators to work together on arrangements, too.

Hope to see you there!

Sustainable Agriculture in Other States

Iowa is not alone in developing research programs for alternative and sustainable agriculture. Other states are also involved, but each program is different. In Wisconsin, a Sustainable Agriculture Demonstration Grant Program funds grants up to \$50,000. Michigan State University received \$2 million from the National Science Foundation to study alternatives to farm chemicals. This research will also consider interactions among soil organisms. Ohio is developing a research center at its experiment station in Wooster for basic research into the relations among soil organisms. In California and New England, teaching and research programs have also appeared.

Although federal programs such as the Agricultural Productivity Act are vitally important, individual states must also be involved. The research that leads to a more sustainable agriculture often is specific to regions. Individual climatic, soil, cropping system, and economic variables may determine whether any new technology will be successful. Also, new technologies may require adaptation to particular circumstances.

Iowa is unique in its combination of an ambitious research program like the Aldo Leopold Center with a non-confrontational group like Practical Farmers. This cooperation between Practical Farmers and Iowa State will lead to benefits for farmers and researchers.

— Rick Volland

Leopold Center Director Named

Dennis R. Keeney will become director of the Aldo Leopold Center for Sustainable Agriculture at ISU on Sept. 15. Keeney is a professor of soil science and heads the land resources program in the Institute for Environmental Studies at the University of Wisconsin, Madison. Keeney was selected over two other finalists, David Bezdicek, who is a soil scientist at the University of Washington, and George Hallberg, chief of the Geological Studies Division of the Iowa Department of Natural Resources.

The Leopold Center was created by the Iowa Groundwater Protection Act passed by the Iowa legislature in 1987. Its mission is to develop farming

systems that combine responsible stewardship of natural resources with farm profitability.

Keeney grew up on a 200-acre crop and livestock farm in Runnells, Iowa. He received his B.S. in agronomy and his Ph.D. in soil science from ISU. His M.S. in soil science is from the University of Wisconsin. Keeney was the chairperson of the soil science department at Wisconsin from 1979 to 1984. He is president of the Soil Science Society of America and has served on numerous regional and national environmental committees. He spent 1976-77 in New Zealand doing research on nitrogen use in pastures. His research interests include groundwater quality, nitrogen use in agriculture and interdisciplinary studies on topics related to environmental issues.

Robert W. Jolly, interim director of the Leopold Center, noted that Keeney has devoted "an entire career to the interface between production agriculture and the environment." He praised Keeney's strong science background, his commitment to the mission of the center and his experience in the administration and direction of research programs.

(Large portions of the above article were taken from the official ISU press release.)

No Time to Rest on Our Laurels

Sustainable modes of agriculture are becoming more prevalent in Iowa. The passage of the Groundwater Protection Act in 1987 and the establishment of the Leopold Center for Sustainable Agriculture has given credibility and a means of support for those who are interested in this method of farming. Sustainable agriculturalists and researchers can take satisfaction in their initial successes. However, these practices are not yet the common mode of agricultural production in Iowa. A broad-based, integrated effort is needed to substantially increase the number of Iowa farmers using sustainable modes of production. This article will address some of the issue areas where work needs to be done to enable these practices to become generalized throughout the state. These issues are interrelated, but they are addressed separately here for the purpose of discussion and to highlight their individual importance.

Some farmers may not have the information or management skills they need to adopt sustainable practices. These farmers need education and support. Other farmers may be content with the status quo and unconvinced of the need to change practices. Patience and creative ways to motivate them need to be found.

Currently the main impetus for sustainable agriculture research and program implementation comes from a relatively few dedicated farmers and individuals in positions of influence and power. Unless this support can be expanded to include a broader range of individuals both within the agricultural community and among the general public, sustainable agriculture will remain a fringe movement with minimal influence on the future direction of agriculture in Iowa.

A constituency of concerned citizens should be developed to lobby the state and federal governments for continued financial and moral support for sustainable agriculture. As well, other sources of funds need to be cultivated. Money is necessary for research, education, and communication campaigns. Agribusiness has traditionally been a major source of funds. If reduced-input systems become more common, support from industry could diminish. Hence, a strong commitment of public funds as well as funding from private sources is needed.

An ideological struggle is brewing within the state's academic community. High-input factions, reduced-input factions, and biotechnology factions each are attempting to shape the future direction of agriculture in Iowa. The stakes are high because university resources will be allocated in concert with the chosen direction. The high-



The crowd at the April 26th field day.

input and biotechnology factions bring large sums of money into the universities for research and program development. Recognition and influence come with this money. Supporters of reduced-input technologies need to be assertive in gaining recognition for their point of view and in claiming their share of university resources.

Agribusiness companies contribute some \$65 billion annually to the gross national product. With this much money at stake, agribusiness will use its considerable economic power and influence to shape a mode of agricultural production that is economically favorable to them. Without proper attention to this reality, reduced-input systems will continue to lose out in the competition, just as they have for the past 30 years.

For many farmers, the incentive to adopt a sustainable mode of agriculture is primarily economic. Because economic fortunes shift, the incentive to adopt this mode of production needs to be grounded in something more stable than shifting economic fortunes. The Groundwater Protection Act calls on the people of Iowa to develop a conservation ethic. The spread of such an ethic among the population can provide a stable foundation and serve to influence farm management decisions that are supportive of a sustainable agriculture.

— Jim Malia

The Man who Predicted the Drought

Last fall I attended a seminar given by Louis Thompson, Emeritus Dean of Agriculture at Iowa State. Dr. Thompson was the bearer of grim tidings that day. He predicted that the northern hemisphere will enter a period of hot, dry weather, and he showed some mysterious wavy lines as proof. I've been thinking about that talk lately. Recently I dropped in on Louis Thompson to refresh my memory and to get his perspective on this summer.

As I understand it, there are several factors at work: global warming due to the "greenhouse" effect; sunspot cycles; "el Niño" events; and lunar cycles.

Our dry years are usually also warmer than usual. There is concern among some that a global warming trend would make the midwest a drier place. The phenomenon called the greenhouse effect may bring this

about. Carbon dioxide in the atmosphere lets sunlight reach earth but absorbs the heat radiation given back from the surface. By burning fossil fuels, our cars, homes and factories are increasing the atmospheric carbon dioxide. A warming trend has already been noted in the southern hemisphere.

Sunspots go through a 10-or 11-year fluctuation, but Louis Thompson explains that it is *pairs* of these cycles that are important for our weather. The polarity of the sunspots reverses after ten years or so. It is the point at the end of a negative cycle and the beginning of a positive cycle that is associated with drought. This point occurred in the mid-1930s, the mid-1950s and the mid-1970s. That should leave us, here in the late 1980s, off the hook, but Dr. Thompson points out that there can be droughts at other times as well.

You may have heard about el Niño events. Their cause is not known, but one result is a reversal of easterly trade winds in the Pacific Ocean off South America. When this event takes place, pressure systems change all over the Pacific. In the U.S. the jet stream can be pushed so far north that a high pressure system becomes stationary over the Corn Belt in July and August. Sound familiar?

Perhaps the strangest-sounding of Dr. Thompson's theories is the lunar cycle, though the idea is not his own. R. G. Currie was the first to show that midwestern corn and soybean yields follow an 18.6-year cycle. Every 18.6 years the moon, at its closest approach to earth, lines up with the sun. No one knows what connection this may have with the weather. It could be that the resulting tides affect ocean surface temperatures.

Dr. Thompson is betting that this summer's drought will end by late July. The last el Niño event was in 1986/1987. Droughts have usually happened the year after such events. By now we should be far enough past the danger time that this event will soon lose its effect on us.

The bad news from Louis Thompson is that we are just entering the drought part of the 18.6-year lunar cycle. This dry period should be most severe in 1991-1992. Although the 1988 cropping season has been very dry, most areas at least began the season with adequate subsoil moisture. If several of the next years are dry, farmers may face summer droughts without the benefit of soil moisture reserves.

— Rick Exner

Correspondence

Correspondence to the PFI directors' addresses is always welcome.

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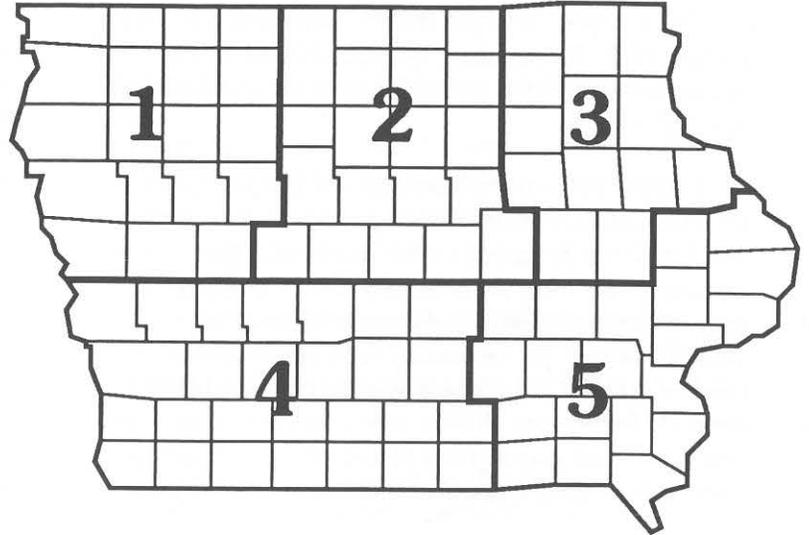
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**PRACTICAL FARMERS OF IOWA
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Practical Farmers of Iowa

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Address correction requested