the Practical Farmer

Practical Farmers of Iowa Newsletter

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PFI SUSTAINABLE AGRICULTURE EDUCATION INITIATIVE ANNOUNCED

Practical Farmers of Iowa has initiated a statewide program of sustainable agriculture education. The Educational Foundation of America has funded year one of the proposed three-year effort.

The project was designed with help from the Iowa Future Farmers of America (FFA) Foundation, the FFA Association, the Iowa State University Extension 4-H and Youth Program, and the ISU Department of Agricultural Education and Studies. It will involve close cooperation between PFI and these organizations. Students and members of FFA and 4-H will have opportunities to learn about sustainable agricultural practices firsthand: by visiting farms where these practices are in use; by doing special projects with "mentor" farmers; and by learning to conduct their own replicated on-farm trials. PFI will also work with instructors to include sustainable agricultural practices and concepts in teaching materials.

Practical Farmers of Iowa

PFI will subcontract to the Iowa State University Extension Service to employ an education coordinator to carry out this project. That person will work alongside the PFI on-farm trials coordinator at ISU and will hold the position of Extension Associate. This model for cooperative staffing was

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initiated with the creation of the Extension PFI on-farm trials coordinator position in 1988, and it has paid dividends in improved communication, coordination, and collaboration between the university and Practical Farmers of Iowa. A position announcement will be released as soon as paperwork can be completed, with hiring this summer.

The education initiative grew from the longstanding feeling of PFI directors and members that young people represent the future of sustainable agriculture. Members of the PFI board of directors have spoken in schools and for FFA and 4-H clubs, and over 100 high school agriculture teachers toured the Farm of PFI cooperators Dick and Sharon Thompson in 1990. In addition, Practical Farmers of Iowa is now sponsoring a sustainable agriculture award through the Future Farmers of America. (See page 9.)

The proposal to the Educational Foundation of America was written by past PFI President Ron Rosmann, Harlan. Linda Wilson, ISU Extension, provided technical assistance. The $49,100 grant will allow PFI to follow through on many of the educational efforts already begun, and will allow farmers using sustainable practices to make a greater contribution to Iowa students, teachers, and youth leaders.

CROP PRODUCTION EFFICIENCY IN THE NEWS

Call it sustainable agriculture or call it something else; the bottom line in crop production is – the bottom line. Now that the myth of reduced yields in sustainable agriculture has been laid to rest, the question remains: "How *profitable* is it?" In 1991, PFI members will have an opportunity to provide the answer in a new program called *MAX*, sponsored by *Successful Farming Magazine*. But first some background.

There have always been a few snickers at contests that measure only bushels, but it has been difficult to break out of that mentality and create an alternative. *The Practical Farmer* of spring 1989, reported on the PEPS program in Wisconsin as an example of an alternative to yield contests. PEPS (Profits through Efficient Production Systems) evaluates cost of production for different crops, different regions of the state, and different rotations. Land costs are based on soil type and local cash rents, with other costs of production estimated by the producer. Conservation practices appropriate to the field must be used.

In Iowa, several groups are working to get the same kind of information. Farm 2000, of Poweshiek County, was recently in the news for its Gross Margin and Energy Use Contest. Nine Farm 2000 cooperators entered a total of 15 fields in the program in 1990. Jeff Heil, a PFI member who farms near Haverhill, won the gross margin category for corn production, with $260 per acre. "Gross margin" is the difference between gross income and variable costs of production. It does not include fixed costs such as land and machinery overhead. Of course, those fixed costs figure into the net profit, but using gross margin makes it easier to compare across different farms.

Barney Bahrenfuse, Grinnell, won the Farm 2000 crown for the least energy consumed per acre, with a corn field that followed clover. His energy input, converted to diesel equivalent, came to 9.15 gallons, or .103 gallons per bushel. Elements going into the energy total included fertilizers, pesticides, tillage operations, harvest, and drying.

Practical Farmers of Iowa cooperators have gathered detailed information about *relative* costs of

practices. For example, in 14 trials in 1990, the return to management averaged $6.12 per acre greater, and cooperators saved an average 46 lbs of fertilizer nitrogen, where the late spring soil nitrate test was used to adjust nitrogen rates. But what was the total cost of production? PFI cooperator Don Davidson, from Grundy County, is working with all of last year's PFI data to derive per-bushel and per-acre economics. He will be reporting in coming newsletters.

Cooperator Vic Madsen has recently started a production efficiency club in Audubon County. Members will use record keeping to track their costs – but *not* as a competition.

The competitive element is something that the Iowa Crop Improvement Association has wrestled with as well. This group, which sponsors the annual Master Growers contests, has examined the possibility of a cropping efficiency contest. They felt that if it became as competitive as the yield contests, there would be too many opportunities for stretching the truth. How do you verify an herbicide rate, for example? How do you handle a field that was manured for the last 10 years but received no fertilizer in the year of the contest? Of course, this nutrient management would be an example of the very kind of "systems efficiency" that sustainable farming seeks to utilize.

Fayette County is in its fifth year of a program called the *Maximum Economic Yield Contest*, which is sponsored by the Fayette County Conservation Tillage Club, Fayette County Extension Service, and the Soil Conservation Service. The objective is educational, not competition, according to Fayette County Extension Director Dan Burkhart. The project grew from a desire to document the economics of reduced tillage systems.

The Fayette County contest estimates land costs for each field from its corn suitability rating (CSR). Annual soil loss is calculated by the SCS, and the amount over the regeneration rate ("T") is charged to the crop at $5 per ton. Phosphate and potash are charged at the rate of crop removal. Nitrogen fertilizer is charged as reported. Uniform input prices are used.

The information is plugged into a Lotus 123 spreadsheet developed by Jim Graham, of Hawkeye. Graham, who now farms part-time and works in the Farm Management Department of the Waterloo Savings Bank, created the computer program in working for his Masters of Agriculture degree.

There is a new player on the scene this year. It is called *MAX*, for Maximum Production Efficiency. The sponsors are the Conservation Tillage Information Center (CTIC), of West Lafayette, Indiana, and *Successful Farming Magazine*. Producers may enter two fields (either corn or beans) in the program. The word "competition" is not being used. Individual entries will be confidential, and all field results will be published anonymously.

The MAX program builds on projects like the Fayette County *Maximum Economic Yield Contest*. In fact, Jim Graham is consulting with Purdue University on development of computer software that will eventually be released for *MAX*.

☐ YES, I want more information on the MAX Program.

Name _____

Address _____

_____ Zip _____

Telephone (_____)_____ County _____

Number of fields to be entered: _____ corn _____ soybean
(Maximum of 2 fields) (Entries must be received by June 1.)

As those involved in these programs often admit, there is no perfect solution to many of the questions that arise in cropping efficiency contests. However, the MAX program should help to raise the issue of efficiency on a national level – and change the way people think about the bottom line. PFI members have been invited by CTIC to try their own hand with MAX. For detailed information, see the April issue of *Successful Farming*, or send the above form by June 1 to The MAX, Successful Farming, 1716 Locust St., Des Moines, IA, 50036.

PFI 1991 FARM FIELD DAYS

PFI cooperators got together March 18 and 19 to plan on-farm trials and field days. They also met formally and informally with ISU researchers who are conducting their own research on PFI farms. On-farm trials and demonstrations for this year will include the old and the new. Weed management trials will continue to evaluate ridge-till with and without herbicides, but cooperators will also test a variety of other practices and technologies, from adjuvants to banding to double rotary hoeing.

The most unusual technologies may be demonstrated on the field day in Delta, where new cooperator Jim Striegel will use banders built by his neighbor, Larry Conrad. Conrad's banders are designed to maintain an even distribution of dry material on side slopes.

Larry Conrad is also developing a wireless check planter. He has received a small grant from Pioneer, which is interested in check planting for its Better Life program of herbicide-free grain. Hilled corn could be cross cultivated, and it could be rotary hoed more aggressively. In a conventional system, hilled corn would save on herbicide and insecticide costs. The check planter will also be featured at the field day.

Nitrogen rate trials remain popular. This year farmers have a new set of guidelines for interpreting the late spring soil nitrate test. Many cooperators will compare a rate based on the soil test to a rate determined by the traditional factors of yield goal and yield potential.

More cooperators than ever are planning demonstrations of narrow strip intercropping. They have been listening and learning from some of the "old pros" like Tom Frantzen and Mike Reicherts, and from ISU agronomy professor Rick Cruse, who is researching the practice around the state with support from the Leopold Center for Sustainable Agriculture.

Intensive grazing is another practice on the increase. New cooperators Tom and Kathy Curl, Ionia, are enthusiastic controlled grazers. Dave and

Lisa Lubben, also new cooperators, have used intensive grazing for several years. John and Pam Cowles, Bloomfield, have added a new pasture with a new water system to their intensive grazing setup. Other cooperators are refining their systems or are just getting into intensive grazing this year.

The field days remain the most popular PFI events, with total attendance in 1990 in excess of 1,300. Field days are the best way to keep up on the "state of the art," and they provide an opportunity to visit with interesting people. PFI members will receive a complete booklet of field day events as the time approaches. In the meantime, here are the field day dates.

JUNE 17, 1 PM CENTRAL IOWA

Richard and Sharon Thompson, RR 2, Box 132, Boone 50036 (515) 432-1560

Demonstrations: Row crop cultivation – first pass through soybeans, layby cultivation for corn

Hwy. 30 to Hwy. 17. Take Hwy. 17 N. about 4 miles to Hwy. E-26. Go E. 1½ miles, N. side. Two silos.

JULY 18 EAST CENTRAL IOWA

David and Lisa Lubben, RR 3, Monticello, 52310 (319) 465-4717

JULY 31 SOUTHWEST IOWA

Ronald and Maria Rosmann, RR 1, Box 177, Harlan, 51537 (712) 627-4653

AUG 1 NORTHWEST IOWA

Todd and Linda Hartsock, RR, Box 47, Rolfe, 50581 (712) 857-3426

Bob and Diane Graaf, RR 1, Palmer, 50571 (712) 359-7787

PFI cooperators met in March to plan 1991 on-farm trials and field days.

Harlan and Sharon Grau, RR 2, Newell, 50568 (712) 272-3692

AUG 6 NORTHEAST IOWA

Mike and Jamie Reicherts, RR 1, Box 32, New Hampton, 50659 (515) 364-6776

Tom and Irene Frantzen, RR 2, New Hampton, 50659 (515) 364-6426

AUG 7 NORTHEAST IOWA

Lynn Stock, RR 2, Box 12, Waukon, 52172 (319) 568-3211

Brian and Michele Houlihan, RR 1, Box 84, Harper's Ferry, 52146 (319) 586-2639

AUG 8 NORTHEAST IOWA

Ray and Marj Stonecypher, RR 1, Box 127, Floyd, 50435 (515) 398-2417

Tom and Kathy Curl, RR 2, Box 173, Ionia, 50645 (515) 228-2089

AUG 12 SOUTHEAST IOWA

Jim and Vickie Striegel, RR 1, Box 109, Delta IA 52550 (515) 634-2896

Larry Conrad
RR1, Box 103, Delta, IA, 52550 (515) 624-2380

AUG 14 NORTH CENTRAL IOWA

Allyn and Laura Hagensick, RR 4, Box 50, Hampton, 50441 (515) 456-2945

Doug Alert, RR 2, Sheffield, 50475 (515) 579-6183

AUG 16 NORTH CENTRAL IOWA

Don and Sharon Davidson, Box 424, Holland, 50624 (319) 824-6347

Jerry and Jill Carlson, 1527 South Union Road, Cedar Falls, 50613 (319) 277-1904

Dick and Mary Jane Svoboda, RR 1, Box 130, Aurora, 50607 (319) 935-3966

AUG 21 SOUTHEAST IOWA (In cooperation with Davis County Extension)

John and Pam Cowles, RR 2, Box 90, Bloomfield, 52537 (515) 675-3414

AUG 23 SOUTHWEST IOWA

Ted and Donna Bauer, RR 1, Audubon, 50025 (712) 563-4084

Vic and Cindy Madsen, RR 3, Audubon, 50025 (712) 563-3044

AUG 30 NORTHWEST IOWA

Paul and Karen Mugge, RR 2, Sutherland, 51058 (712) 446-2414

Lowell and Eunice Wilson, Doyle and Sheryl Wilson, RR 1, Box 54, Primghar, 51245 (712) 757-1874

Ag. Stewardship Center, Dordt College Sioux Center, 51250 (712) 722-3771, ext. 6285

SEPT. 2 SOUTHEAST IOWA

Jeff and Gayle Olson, RR 2, Box 147, Winfield, 52659 (319) 257-6967

SEPT. 3 SOUTHEAST IOWA

Steve and Gloria Leazer, RR 2, Wilton, 52778 (319) 785-4577

Mark and Rita Mays, RR 2, Box 45, Wilton, 52778 (319) 732-2040

SEPT. 5, 6, CENTRAL IOWA

Richard and Sharon Thompson, RR 2, Box 132, Boone 50036 (515) 432-1560

NOTES AND NOTICES

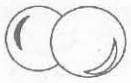
♪ Marketing Update

The market for specialty soybeans continues to develop. As spring planting gets underway, some farmers are making arrangements to grow for the specialty markets.

Pioneer Hi-Bred International is looking for producers to grow a high protein variety developed by Iowa State University, HP 204. It yielded 48 bushels per acre in tests at three Iowa locations in 1990. Pioneer furnishes seed ($12 per 60 lb bag). The beans will be picked up at the farm by Pioneer, as will all grain grown for *Better Life* this year. The company offers a 1991 premium of $0.80 per bushel if pesticides are used, or $1.75 per bushel if no herbicide or insecticide is used on the crop. Contracts must be signed before the growing season. Contact Ruth Hein at Pioneer, (515) 824-3272.

The startup date for the Nichii Company processing plant at Jefferson has been put back to June 1. According to Larry Tomsen, who is with West Central Co-op, the Nichii Company has been losing interest in organic or pesticide-free soybeans, although preferences and premiums are difficult to forecast beyond the short term. West Central is

paying a $0.15 premium on a high-protein soybean that they have developed. Contact Tomsen at (515) 386-4144.



♪ Herb Production Update

Following up on the herb conference cosponsored last September by PFI and the Kirkwood Rural Development Center, 15-to-20 serious potential growers from eastern Iowa have met another six times over the winter. One inducement has been that Tone's Spices, the international company based in Des Moines, has agreed to buy Iowa-grown seed crop spices if they are of good quality. The Kirkwood Rural Development Center has been helping these growers gather information on production and processing techniques. Kirkwood is seeking funds to hire a coordinator for a year to work with these growers in getting the project started.

On May 11, the growers group visited the Iowa State University Seed Science Center to learn about state-of-the art seed cleaning technology. They have determined that eastern Iowa already has almost all the seed processing equipment necessary for the group to go into commercial production. Things are progressing steadily, and new people interested in herb growing are invited to get involved. PFI member Jean Smith has kindly agreed to be the group's correspondent to *the Practical Farmer*, keeping the membership informed of herb growing news.

♪ Herbicide and Water pH

Editor's note: The following article appeared in the April 5, 1991 edition of the ISU Extension newsletter *Crops, Soils, and Pests*.

R.G. Hartzler

Several products are being promoted as spray additives in order to protect herbicides from alkaline hydrolysis (splitting of the molecule at high pH). It has been proposed that certain herbicides break down very rapidly in the spray tank if water with a high pH is used as a carrier. Proponents of this theory state that by reducing the pH of the water, alkaline hydrolysis can be prevented, and, therefore, lower rates of herbicide can be used.

There is no evidence to indicate that alkaline hydrolysis is a problem with any of the herbicides commonly used in Iowa. Thus, there is no benefit in using an acidifier as a spray additive or to use carriers other than water in order to eliminate alkaline hydrolysis.

♪ Frantzen Named to Experiment Station Advisory Council

PFI President and cooperator Tom Frantzen has been invited to represent Practical Farmers of Iowa on the Advisory Council, a new committee to examine the long-term direction of the Iowa Agriculture and Home Economics Experiment Station. Dean of the Experiment Station Thomas Fretz selected Frantzen and 16 other individuals representing a broad range of Iowa agriculture and rural life. Other organizations on the Advisory Council include commodity organizations, the Iowa Fertilizer and Chemical Association, the Iowa Farm Bureau Federation, Prairiefire, and the Sierra Club. The Advisory Council is scheduled to hold its first meeting in June.

♪ ATTRA Seeks Assistant Program Manager

The Appropriate Technology Transfer for Rural Areas (ATTRA) program requests resumes from qualified people for the position of assistant program manager. ATTRA is a project of the National Center for Appropriate Technology (NCAT) and is located on the University of Arkansas campus in Fayetteville, Arkansas. ATTRA gives free information to farmers and others on sustainable agriculture production systems designed to reduce environmental damage, agricultural production costs, and dependence on nonrenewable resources. ATTRA is funded by the U.S. Fish and Wildlife Service.

Varied duties of the assistant program manager include supervising the 22-member ATTRA staff, making presentations at workshops and conferences, producing written publications and reports, and developing complementary project activities.

This position requires a highly motivated and creative person with a background knowledge of sustainable agriculture issues as well as experience in program development. The position calls for a person with skills in communication, and an understanding of agricultural research and agroecological principles. Experience in proposal/grant writing and technical writing is preferred. The knowledge, skills, and abilities required to perform this work are generally acquired through the combination of an advanced degree (MS/PhD) in an agriculture-related field and experience in management and problem-solving at all levels of a program's life cycle. Salary is commensurate with experience and comprehensive fringe benefits are offered including health, dental, and disability insurance, paid vacation, and pension plan.

For more information and an application form contact NCAT, Personnel Specialist, P.O. Box 3838, Butte, MT 59702, (406) 494-4572. Or you may call the ATTRA Program Manager at (501) 442-9824 in Fayetteville, AR, before the July 1, 1991, application deadline.

♪ Iowa CCI Seeks Farmers Reducing Chemicals

Ann Krush, CCI Sustainable Ag Coordinator

Farmers who have either reduced or eliminated their use of chemicals are being encouraged to contact Iowa Citizens for Community Improvement (Iowa CCI), a Des Moines-based, non-profit organization that has been working with family farmers since 1981. The group wants to expand its sustainable agriculture information network and is looking for farmers who want to share their experiences.

In 1988, Iowa CCI began gathering information and ideas from over 100 Iowa farmers who are farming with fewer chemicals. This practical knowledge and experience has been shared in various ways with other farmers who are interested in reducing their chemical use. During the past three years, Iowa CCI has helped plan, sponsor, and conduct farm tours, informational workshops, and other activities to promote the idea of farming with fewer chemicals. Over 2,000 people have attended these events.

If you're a farmer who has either cut back on chemicals or eliminated them altogether from your operation, and you want to share your experiences with other people, call Iowa CCI in Des Moines at (515) 266-5213. Iowa CCI can also be reached by writing to: 1607 E. Grand Ave., Des Moines, IA, 50316.

♪ *Take Charge* Workshop Features Genetic Conservation

The Rodale Institute will host another in the series of *Take Charge* meetings beginning at 9 am, Saturday, June 29, at Heritage Farm, north of Decorah. This program will touch on the connection between agricultural sustainability and preservation of genetic resources. Speakers will include Kent Whealy and David Cavagnaro of the Seed Savers Exchange, and Skip Kauffman of the Accokeek Foundation, an organization that deals with genetic preservation of food plant varieties. PFI cooperators Mike Reicherts, Tom Frantzen, and Dick and Sharon Thompson are also on the program.

The $15 attendance charge includes lunch. Preregistration is encouraged. Contact: "attention

Take Charge workshop," Barbara Bruno, Rodale Institute, 222 Main St., Emmaus, PA, 18098, or call Barbara at (215) 683-6383.

FFA SUSTAINABLE AGRICULTURE WINNERS SELECTED

How do you reach young people with the sustainable agriculture "message?" In the fall of last year, the PFI Board of Directors asked the same question. The directors decided to sponsor a sustainable agriculture award through the Future Farmers of America. The FFA conducts competitions in many categories, so it was not difficult to include a sustainable agriculture competition to their program.

PFI felt from the beginning that the competition should look for creativity rather than activity that conformed to a set formula or required a large financial investment. This reflects the reality that the path toward agricultural sustainability must be practical and is different for each operation.

The first place winner was Alan Spencer, of Villisca. Second place went to Doug Reynolds, of Redfield. First prize was a plaque and $100, and the second prize was a plaque and $50.

The contestants each presented a chronology of projects they had carried out. Alan Spencer's projects included soil testing, use of conservation tillage and no-till, use of postemerge herbicides with less potential degradation of water quality than preemerge materials, connecting a hydrant by gravity-feed pipeline to a farm pond, and improvement of a farm windbreak. Doug Reynolds' activities included repair of farm ponds, building a dike between a steam and a field, putting in retainers to stop erosion and the movement of water and manure around the homestead, and reducing the number of passes across the field by building a spray rig and buying a *Row Zone* planter.

Vic Madsen (center) presented the PFI-sponsored sustainable agriculture awards to Alan Spencer (left) and Doug Reynolds.

Vic Madsen, Audubon County PFI cooperator, worked with FFA officials to set up the award. The category was added just in time to be included in this year's competition. It's likely that many FFA members and leaders were not even aware of the new award. Vic represented PFI at the awards ceremony in April, and he reports the exposure there should help build interest for next year.

EVOLVING WEED CONTROL STRATEGIES

Tom Frantzen, New Hampton

My first experience in controlling weeds occurred when I was an 11-year-old farm boy. My father showed me how to operate the two-row, front-mounted cultivator on our Farmall "H." This cultivator, a crosscheck wire, and a diverse crop rotation provided most of the weed control. Spot spraying of 2,4-D to control stubborn patches of Canadian thistle in corn and oats was begun in 1954. This combination proved successful on my dad's 240 acres. We never grew more than 75 acres of corn, so our crop rotation was pretty good.

In 1966, weed control methods changed drastically. At the suggestion of my vo-ag teacher,

Weed control on the Frantzen farm.

we began banding atrazine. It was a miracle product, killing every weed in the field. Soon we added crop oil. This was even better! The crosscheck wire was happily discarded, and our corn acreage expanded to 90 to 100 acres yearly. Some corn followed previous corn. We began to sidedress nitrogen and noticed that atrazine and crop oil would fail on occasion. I recall weather conditions being tied to these nonperformances.

In some places, we began to split-apply atrazine. The rates escalated from ½ lb banded in 1966, to as much as 5 lb split-applied by 1973. Carryover problems drove some land into continuous corn production. Foxtail, unheard of in the '50s and '60s, became the predominant weed problem. Lasso, a new herbicide, was my choice in 1974 to control increasing weed problems. These were my beginning years as a farmer. Lasso worked well until the dry spring of 1976. Weed control was a disaster that year.

1977 found me using preplant incorporation of Sutan. In 1978 it was Sutan and atrazine; by 1979, Sutan plus atrazine plus Bladex. In 1982, my herbicide bill approached $25 per acre, but the incredibly cold spring weather prompted a Sutan failure. I salvaged my 160 acres of corn with a rear-mount Oliver cultivator.

In 1983, the farm economy worsened, and I was determined to do something to reduce herbicide costs and improve control. I ridged my row crops and purchased a new Buffalo planter. Ridge-till, banding Lasso with 28 percent N carrier, and cultivation gave excellent control in 1984. My Lasso rate was 2 quarts in an 18" band. Sometimes I added Bladex. My cost fell to $13 per acre. "Cheap!" I thought.

In 1985, I used 1½ quarts in a 15" band. This, plus spot broadleaf spraying, worked well. Along with a burndown, my control program was the same for corn or soybeans.

In 1988, my fields enjoyed excellent weed control, while nearby conventional programs were a total disaster. I even grew a small acreage of corn without herbicides that year, with the encouragement of PFI cooperator Dick Thompson.

In 1989 and 1990 my Lasso rate fell to 24 oz. in a 10" band. This, plus spot broadleaf control cost less than $7.50 an acre. Ten acres of corn and soybeans were grown without herbicides.

Since 1983, banding Lasso preemergence has worked well. But in 1991 my strategy will change again. On the 240 acres that I own, my corn acreage is now the same as when my father grew crops without herbicides. This diverse crop rotation has lessened foxtail pressure. Most of the time I cannot even find the row band in my young crops. I see an opportunity to reduce costs further, lessen chemical use, and improve performance. Why band Lasso on the entire field if I only see occasional grass pressure?

A new grass herbicide, Accent, has been cleared for corn. This product is used postemergence to control grasses, even quackgrass. Quackgrass has been a persistent weed for as long as I can trace the weed history on our farm. Quackgrass thrives in crop

rotations and is little affected by tillage. To control it in ridge-till, I usually rotate to soybeans, ridge plant in late May, and broadcast Roundup just before planting. This works well, but broadcasting is expensive.

Banding Accent in a directed postemerge application in wide rows costs one-third as much as broadcasting. If I find no weeds, I will shut off the bander altogether. Broadcasting this product would cost $17 per acre. A one-third band will cost $5.70. If I only spot-treat half the field, the cost will be lowered to an average of $2.85. I cultivate twice. My bander is mounted on the tractor I use to cultivate. I plan to band the grass control on one cultivation, and the broadleaf control (usually 2,4-D) on the other pass. I am not sure which product I will use on what pass.

When Dick Thompson talked me into one acre of ridge-till without herbicides, I had severe reservations. The field lay along the road and I did not want any weeds there for sure! I was amazed at the weed control in that acre in 1988. In 1989, I had a PFI-sponsored corn and soybean plot comparison, with and without herbicides. There was little, if any difference in the replicated plots. This experience proved valuable in 1990, when an opportunity to grow an alternative crop arose. I could contract to grow grain amaranth, but no chemicals are cleared for weed control in that crop. Ridge-till without herbicides provided excellent weed control as I grew my first alternative crop.

When my dad farmed, he used what technical means were available to suppress weeds. As the years passed, weed control strategies changed. Rotation and cultivation, and eventually ridge-till cultivation, were the principal means of weed control. Chemical weed control played a role since the 1950s. The greatest failures occurred when herbicides were the *only* methods of control used. These failures were usually weather related. Prolonged wet weather could have also prevented cultivation, although I don't recall this happening.

Will Accent improve control? Is it environmentally better? The effective rate of one-ninth oz. per acre is a lot less than 24-32 oz. of Lasso. I make no claim as to its safety, although its manufacturer does. My weed control strategies today are like my crop rotation – diverse. I intend to keep them that way in the future.

PLANTING IN THE DUST PRESENTED IN DURANT

Rita Mays, Wilton

Planting in the Dust, a one-woman, one-act drama was movingly performed by actress Jody Hovland at the Durant Community School Sunday, April 21. More than 50 people attended the presentation. The tone for the afternoon was set by an opening prayer delivered by Pastor David Lawson, Durant Gloria Dei Lutheran Church. "When the whole earth has been bled until the earth will bleed no more. . . . even the stones will cry out for justice, even the trees will sing out for peace. . . . fire and water, earth and sky, all of Creation will cry out."

The 30-minute play looks at rural life through the eyes of a farm woman thinking back to her mother's and grandmother's life on the farm, but the lessons it conveys are contemporary. "Everything, I used to think, was forever eroding. Foreclosures every week. Soon there won't be enough people out here to hold a square dance." "The land belongs to itself. If anything, we belong to it. . . . as much as earthworms or corn plants. We rise up awhile and sink back in. We borrow our lives from it."

The play, sponsored by the southwest district of Practical Farmers of Iowa through a *Sustainable Projects* grant, is produced by the Land Stewardship

Jody Hovland in *Planting in the Dust*.

Project (LSP), a nonprofit Minnesota organization dedicated to fostering an ethic of stewardship toward our nation's farmlands and to developing a sustainable agriculture. LSP believes that the problems of soil and water degradation, the loss of family farms, and the decline of rural communities are not just the problems of the farmer but should be of concern to everyone.

Planting in the Dust was written by Nancy Paddock, who farms with her husband Joe in Minnesota. Jody Hovland, the actress, was born and raised in the farming community of Ada, Minnesota. She is currently the managing director of Riverside Theater, a professional company in Iowa City.

A discussion following the play brought out many good feelings, concerns, and beliefs. The audience included members of Eastern Iowa Hay Producers, the Soil Conservation Service, and the local high school agriculture program. On display for the event were over 50 posters created by Durant 4th graders for Earth Week. Subjects portrayed ranged from recycling, to planting trees, to "not using farm chemicals and letting Mother Nature take its course." The posters provided an appropriate backdrop for consideration of the play's message and of the future of farming.

TIPS ON CONTROLLED GRAZING

James Gerrish

Editor's note: Gerrish is a research assistant professor at the University of Missouri Forage Systems Research Center, Linneus. Last winter he spoke to several groups of Iowa producers, including the Rodale *Take Charge* workshop in Des Moines, where the following comments were made. The full text, *Intensive Grazing Management: Principles and Techniques*, appears in the booklet *1991 Controlled Grazing Clinics*, which ISU Extension assembled for its controlled grazing sessions last winter. The 121-page booklet includes information on getting started, economics, pasture establishment, summer grazing, stockpiling, fencing, and worksheets for calculating stocking rates, stock density, and animal numbers for controlled grazing systems. It is available for $5 (which includes mailing) from Extension Animal Science, 109 Kildee Hall, ISU, Ames, IA, 50011.

The Linneus, Missouri research center holds three-day intensive grazing schools each summer for interested farmers. This year the schools will take place May 22-24, June 26-28, and Aug 14-16. For information, call (816) 895-5121.

Commonly heard terms today are "controlled grazing," "rotational grazing," "short duration grazing," and "intensive grazing," among others. A number of different management techniques are included, but the best overall name is probably "controlled grazing." The main point of these systems is the imposition of management practices that put the producer in control of what his or her livestock are consuming. In many producer-stock relationships, the cow, steer, or ewe is making an awful lot of decisions about the grazing management that the producer could be making to his or her advantage. Remember, your stock don't care whether you make a dime!

All of the currently discussed controlled grazing systems initially require both increased capital input and management expertise. I say "initially" for capital inputs because many producers find that as they move to improved grazing management, other inputs they previously considered to be necessary were really no more than a coverup for deficient pasture

management. Grain supplementation and excessive fertilization are typical examples.

A sound controlled grazing system is built around three key factors: 1) meeting the nutrient needs of whatever class of livestock is involved; 2) optimizing forage yield, quality, and persistence; and, 3) using appropriate technology to develop a practical and economically viable management system. All factors are closely interrelated and should be considered from a total systems approach.

Meeting the Nutrient Needs of Livestock

There is no class of ruminant livestock that cannot be raised or maintained on a 100 percent forage diet, with the exception of "corn-fed beef." We often use grain supplementation as a substitute for good forage management or even to remedy poor forage management. . . . In the past, cow genetics has frequently been a limiting factor in terms of calf weaning weights, but now we commonly see the forage base as limiting cow production. When faced with this situation, the producer has two options: grain supplementation or improvement of the forage base.

There are very real differences in the nutritional requirements of different classes of livestock, and these must be taken into consideration when setting up a grazing and wintering program. . . . In a cow-calf system, the dam acts as a buffer between calf growth and low quality forages. Usually a cow/calf operator ends up paying for low quality forages with poor cow reproductive performance as either open cows or extended calving intervals. . . . This clearly shows the sensitivity of young growing steers and heifers to changes in forage quality. The same comparison can be drawn between smaller, low producing cows and larger, high producing cows.

DEFINITIONS:

Stocking rate: The actual number of animal units or total animal liveweight assigned to a pasture unit area for the entire season. Expressed as either animal units/acre or pounds liveweight/acre.

Stock density: The number of animal units or total animal liveweight present on a given unit of pasture area at any point in time. Sometimes called "instantaneous stocking rate." Control of stock density is the main driving force in controlled grazing systems.

Optimizing the Forage Base

When selecting the plant species to use in a forage system, we try to arrive at an optimal compromise of the factors of yield, quality, and persistence. We commonly think of different forages as having particular attributes. . . . Thus, we must recognize the strengths and weaknesses of our players in order to combine them into a balanced team.

To meet these particular animal needs, we must have forages of the appropriate quality growing or stockpiled throughout the grazing season. The very good producer should consider the grazing season to be any time other than snow cover. Forage species should be selected on the basis of regional and site adaptation, seasonal distribution, as well as total yield potential, and ability to meet the nutritional needs of the livestock involved. Usually a combination of several species will give the best overall availability and quality profile for the season; however, simplicity has a lot going for it, too! A combination of two or three base pasture types can generally be managed to provide adequate forage availability and quality throughout the grazing season. Neither fescue nor alfalfa is the universal forage.

Selection of forage species

Which particular species are chosen depends on several factors. . . . The first consideration to make is what species are best adapted to the soil resource of your farm. There is no point in planting alfalfa when the land will only support lespedeza. . . . Secondly, is the level of management you are willing to provide

James (Jim) Gerrish offered intensive grazing pointers at the Rodale *Take Charge* workshop in Des Moines.

adequate for the survival and persistence of the species. Grazing, fertility, and insect management come under this heading. . . . Thirdly, acceptability and appropriateness to the type of livestock you wish to produce. If a plant is unpalatable to a particular type of livestock it isn't going to contribute very much to their output. The argument can also be made that the animal type should be adapted to the grass resource already in place.

Species response to grazing management

Upright growing legumes, such as alfalfa and red clover, and grasses that elevate growing points early in development, such as bromegrass and indiangrass, are more likely to respond dramatically to controlled grazing. This difference is due to two factors: 1) carbohydrate (CHO) balance in the plant, and 2) location of the developing seedhead (meristem) relative to grazing height.

Low growing or prostrate species maintain a fairly substantial leaf area below grazing height and subsequently maintain a positive CHO balance even under heavy grazing. The upright growing species maintain very little area below grazing height, unless lightly grazed, and must rely upon stored CHO for regrowth following grazing. . . . With controlled grazing, cattle can be managed to leave meristems intact or remove all growth, depending upon what plant response is desired.

To alter quality of the sward enough to impact animal performance positively through controlled grazing, stock density must exceed about 10-12 (cattle) animal units/acre, or 15,000+ lbs total animal liveweight/acre. The pastures must also be grazed according to forage availability and growth rate in each individual paddock and not by set calender days.

Specific adaptation considerations

As general rules, good characteristics for mud adaptation are sod formation and extensive fibrous root systems (e.g., fescue, bromegrass, reed canarygrass, switchgrass). Poor characteristics are open swards and tap roots (eg. orchardgrass, timothy, most legumes). For drought situations, deep rooted legumes and warm season grasses are the best hedge for maintaining growing pastures.

In both drought and wet situations, it is advisable to shorten the grazing period and extend the rest interval if at all possible. The idea of opening up the entire acreage during droughts to spread out grazing pressure is flawed in the sense that all acres are being damaged, whereas if animals are kept within paddocks, the extent of damage can be better controlled, and subsequent management of these particular paddocks can be geared toward recovery when conditions improve.

Summary

Design of a grazing system is a complex management exercise and should include consideration of several factors. Ensuring that forage availability and quality will be adequate for the livestock involved is the most critical factor as profitable livestock production is the end goal of all forage management. Reducing the time period that harvested, stored feed is required can be accomplished through improved pasture management. Improvement of the pasture system includes establishment of productive, high quality forages, fertility to maintain a productive stand, and grazing management to efficiently harvest the forage. As all

of these factors are interrelated, intensive grazing management must include consideration of all aspects of the soil-plant-animal-environment complex.

AGRICULTURAL SAFETY PROGRAM UNDERWAY

Gayle Olson, Winfield

Many people join PFI because of their concerns about health and environmental issues relating to agriculture. There are many other organizations in Iowa that share those concerns from a variety of perspectives. In 1991, a pilot project called SPRAINS was conducted by the Iowa Department of Public Health to find out exactly how many farm related deaths and injuries were occurring. The results were much higher figures than had previously been estimated.

The Iowa Legislature has responded by creating a center that will coordinate efforts of key organizations in order to have a greater impact on solutions to agricultural health and safety problems. The center is called the Iowa Center for Agricultural Safety and Health (I-CASH). It is housed at the University of Iowa and coordinates programs of the University Iowa, Iowa State University, the Department of Health, and the Iowa Department of Ag and Land Stewardship, as well as several external organizations such as the American Lung Association and the FARM program of the Easter Seals. I-CASH is the first such formal effort by any state. It has already resulted in millions of dollars in federal grants coming into Iowa.

Five major program areas have been identified for the next three years. They are:

1) expansion of a hospital-based network of ag health and safety services throughout the state (IA-HASSP). Pilot projects have been underway at Marshalltown and Cedar Falls for several years.
2) prevention of illness and injury among swine confinement workers,
3) prevention of illness and injury among youth,
4) prevention of traumatic injuries from tractors, and
5) collaboration on surveillance of ag workers' illnesses and injuries.

I-CASH is in the process of hiring staff and moving forward toward its goals. If you have specific concerns or wish to be involved, please contact me, I-CASH advisory committee member, Gayle Olson. I can be reached at RR 2, Box 147, Winfield, IA, 52659, phone (319) 257-6967. I would be particularly interested in anyone wishing to incorporate ag health and safety displays or presentations into their field days this year.

PFI Membership Application and Renewal Form

Name _____

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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:

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RR 2, Box 132
Boone, Iowa 50036

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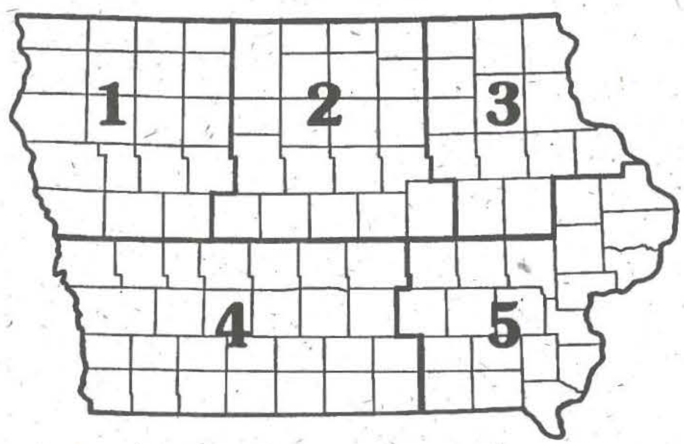

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