

Indiana
On-farm Demonstration
and
Research Project

1991 Results

A cooperative project of
The Indiana Sustainable Agriculture Association
and
The American Farmland Trust



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1991 Results

Farmers taking the lead in the development of practical, profitable and environmentally sound farming systems.

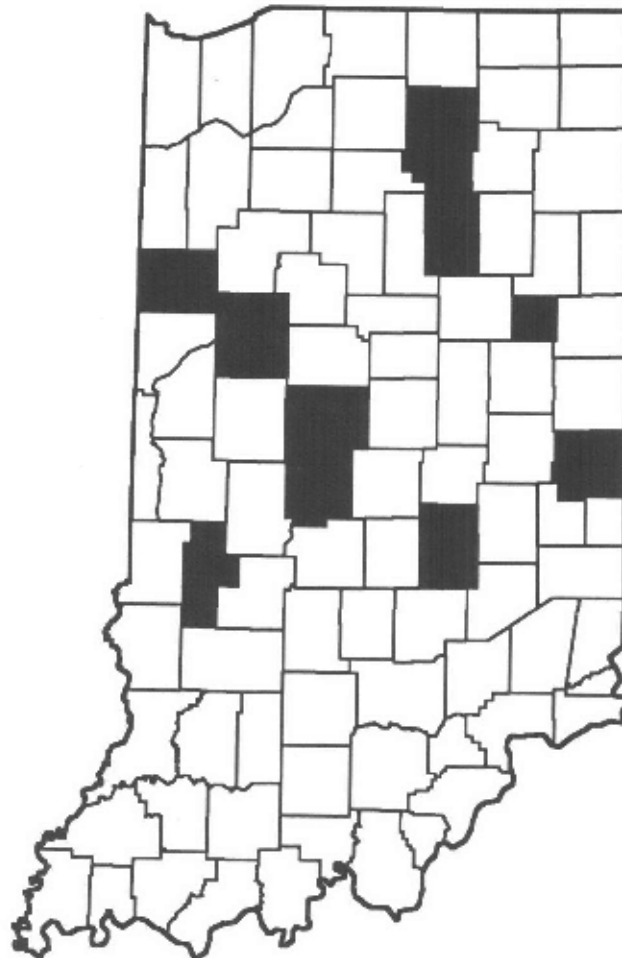


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Introduction

Each year, more and more agricultural producers are beginning to question the safety and efficiency of conventional farming practices. They are concerned about ground and surface water pollution, and how it will effect their families. They will no longer tolerate erosion, and are determined to protect the soil and restore it to health. Many wonder if all of cropping inputs used to grow crops are really necessary, and they are reducing their reliance on purchased nutrients and chemical pesticides. Most of all, these farmers want to make a living by working with, and caring for the land. They are searching for viable crop and livestock management alternatives that promote stewardship and resource conservation.

Practical information about the use of alternative farming practices has been hard to find. Many of the sources that farmers have traditionally relied on for information about growing crops and raising livestock have been slow to embrace the concept of sustainable agriculture. As a result, grassroots farmer organizations promoting the development and use of sustainable agriculture have sprung up around the country. With a strong emphasis on farmer-to-farmer networking and hands on experience, these groups are often the single best source of information about alternative farming practices.

The 1991 Indiana On-Farm Demonstration and Research Project was started as a way to help Indiana farmers answer their own questions about sustainable agriculture. A cooperative effort of the Indiana Sustainable Agriculture Association (ISAA) and the American Farmland Trust (AFT), the project established twelve on-farm research and demonstration sites around the state. Each compared conventional and alternative farming practices in an on-farm setting with cooperating producers providing the land, labor and know-how.

Demonstration plots were laid out in side-by-side treatments or alternating, field length strips. Research plots were replicated six times and randomized for statistical validity. Project cooperators planted and managed their own plots throughout the growing season. Careful records were kept of all agronomic inputs and field operations, with yields carefully checked at harvest. In exchange for their cooperation, participants received a small cost-share payment, free soil testing services, and limited technical assistance.

This report is a compilation of the project results as they were recorded by participating producers during the 1991 growing season. AFT and ISAA have tried to provide complete agronomic information for each demonstration/research plot. A simple economic summary of expense and income for each plot has also been included.

Readers should decide for themselves the effectiveness of the techniques demonstrated by the farmers who participated in this project. Remember, it often takes several years of experimentation before a new cropping practice produces good results. Net returns can also be highly variable when you are trying to correct for past management mistakes.

Also remember that no two operations are alike. What works on one farm might cause a total failure on another. Producers interested in adopting any of the alternative farming techniques highlighted in this report are advised to establish their own on-farm test plots before making any major management changes. Start out small, adopt the practice to fit your individual operation and expand as your skills increase.

Farmers with an interest in learning more about sustainable agriculture, or any of the practices presented in this report, are encouraged to contact the Indiana Sustainable Agriculture Association or the American Farmland Trust.

Participants in the 1991 On-farm Demonstration and Research Project

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Project Results

Scott Brunner Shelby County



Scott farms approximately 1000 acres in Shelby County with his wife and two children. Almost the entire operation is devoted to corn production under a ridge-till system. He is a member of the Indiana Sustainable Agriculture Association and has previously served on the President's Advisory Board of the National Corn Growers' Association.

"I was originally motivated to look at sustainable agriculture practices for two reasons— profitability and the environment. I needed the economic side to stay in business. I figured that if I could reduce diesel and chemical costs by half, my profitability would increase and at the same time I would be helping the environment."

Project Comments

"I was pleased that the plot turned out again this year and felt that we were headed in the right direction in terms of nitrogen placement and reduction. We had a 3.3 bushel per acre yield response. At \$2.55 per bushel that gives an \$8.50 per acre advantage to row placement of 28%. So, although approximately the same amount of nitrogen was applied, we got better usage from the 28%.

"There are several things that I want to do in the future. I'd like to look at root worm insecticides. I'm happy that AFT is able work with us and help us. At planting, it is time consuming to set up all the trials and anything AFT does to help us organize and set it up offsets costs. That really helps. In a wet spring, planting time is worth \$2400.00 an hour or \$40.00 per minute. It is also good to have a group (ISAA) where we can get organized, plan ahead and know exactly where we're going. That has been real beneficial."

Nitrogen Placement Demonstration in Continuous Ridge-till Corn

Site Information

- Normal Rotation: Continuous corn • 1990 Crop: Corn
- Yield Goal for 1991: 180 bu./ac. • 1990 yield: 160 bu./ac.
- Field Size: Treatment #1- Ten acres Treatment #2- Ten acres
- Soil types: Brookston, Crosby
- Soil test: pH- 6.2 OM%- 3.4 P- 88 lbs./ac. K- 370 lbs./ac. CEC- 11.9

Management and Inputs

Date	Treatment #1 No N in row	Treatment #2 N placed in row
Feb '91		Chain harrow old stalks Broadcast dry fertilizer 250 lbs./ac. 0-18-36
April 7		Sprayed 1 pt./ac. 2,4-D (Hi-Dep)
April 30	No N applied	Planted corn on ridges Fischer's FX75 Pop: 26,200 with 55 lbs./ac. 6-24-6 starter fertilizer & 7.6 gal./ac. 28% N (23.6 lbs./ac. actual N) Applied in the row 2"x1" and 2.0 pts./ac. Lasso MicroTek banded over ridges
May 8		Spray herbicides 1.25 lbs./ac. Aatrex 9-0 & .33 pt./ac. 2,4-D (Hi-Dep)
June 1		First cultivation
June 2	213 lbs./ac. 82% N (175 lbs./ac. actual N)	Sidedress nitrogen 183 lbs./ac. 82% N (150 lbs./ac. actual N)
June 10		Second cultivation and build ridges
Oct 9	181.93 bu./ac.	Harvest* 185.27 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$17.00	\$17.00
Pesticides/acre	11.91	11.91
Fertilizer/acre	51.40	52.38
Machinery & labor/acre	74.63	74.63
Total expenses/acre	\$154.94	\$155.92
Gross income/acre	\$455.73	\$464.10
(-) Expenses/acre	154.94	155.92
Net return/acre	\$300.79	\$308.18

Dave Williamson
Wayne County



Dave runs a 738 acre cash grain operation in Wayne County. His crops include ridge-till corn and soybeans with some wheat mixed into the rotation. He is married and has one daughter.

Dave is a Board member of the Indiana Soybean Association, the Wayne County SWCD and the Indiana Sustainable Agriculture Association.

“I have a lot of interests in alternative practices but issues involving nutrients, herbicide reduction on ridges and soil conservation are on the top of the list. I have been experimenting in these areas for the last four years. I had been thinking for the last 25 years, ever since beginning farming, that there needed to be some change. Four years ago, I came to the conclusion that things like this couldn’t go on forever but, the change would need to be a gradual thing. It wasn’t something that I decided to try overnight.”

Project Comments

“The reason that I did this plot was because I had some neighbors that said they always used starter fertilizer on beans and thought that they got better results. Well, I wanted to prove whether they did or not, so I did this demonstration to see whether a small amount of directly applied fertilizer could make a difference in yield. The test plot was done on fairly high soil test ground. The beans all grew great. No difference in growth or yield. The demonstration showed that this practice is probably not feasible at my soil test level and I don’t intend to do it again.

“Next year I want to try ridge-till versus no-till drilled beans on a replicated plot to determine the bottom line dollars.”

Starter Fertilizer Demonstration in Ridge-till Soybeans

Site Information

- Normal Rotation: Corn-soybeans
- Yield Goal for 1991: 40 bu./ac.
- Field Size: Eight acres total
- Soil types: Celina, Crosby
- Soil test: pH- 6.6 OM%- 3.3 P- 122 lbs./ac. K- 204 lbs./ac. CEC- 12.8
- 1990 Crop: Corn
- 1990 yield: 135 bu./ac.

• Treatments were replicated three times in twelve row strips of 1.36 acres each.

Management and Inputs

Date	Treatment #1 With starter fertilizer	Treatment #2 Without starter fertilizer
Feb '91	Chop corn stalks	
May 3	156 lbs./ac. 2-6-12 liquid starter fertilizer	No starter applied
	Plant beans on ridges Asgrow 3322 Pop: 160,000 with and .75 pt./ac. Dual & .37 lbs./ac. Lorox banded over row	
June 3	First cultivation	
June 15	Second cultivation and build ridges	
Sept 20	47.3 bu./ac.	47.8 bu./ac.
	Harvest*	

* Harvested at 13% moisture.

Economic Results

	# 1	# 2
Seed/acre	\$11.00	\$11.00
Pesticides/acre	5.40	5.40
Fertilizer/acre	9.76	0
Machinery & labor/acre	55.78	55.78
Total expenses/acre	\$81.94	\$72.18
Gross income/acre	\$260.27	\$263.02
(-) Expenses/acre	81.94	72.18
Net return/acre	\$178.33	\$190.84

Jeff Maddux Tippecanoe County



Jeff and his wife, Areaka, run an 1100 acre cash crop operation. Their primary crops have been corn and soybeans, but they are also working to put wheat back into the rotation. Jeff uses a no-till/minimum-till system to control erosion. In addition to his work with the Indiana Sustainable Agriculture Association, Jeff has been a cooperator with the Rodale Institute for the last five years.

“My primary interest in looking at alternative farming practices was caused by concern over the safety of using some herbicides. Also I felt that we need to do something to control erosion. We’ve experimented with a lot of things. This year we looked at nitrogen reduction. We have experimented with cover crops, rye and vetch, in the past but have had some problems with them. It seems like in dry springs like we’ve had in the past, the cover crops dried out the soil too much. So we’ve gotten away from them. Right now, I’m primarily trying to reduce fertilizer so we’ve been experimenting with different nitrogen rates. We have also been moving to a total no-till system to control erosion.”

Project Comments

“In terms of this year’s plot we were in a drought stricken area. This was the driest summer in anyone’s memory so we really didn’t feel that the experience gave us any definitive results. But even under these conditions

we didn’t see much benefit from the extra \$11.60 in nitrogen per acre. Our farm got approximately ten to fifteen bushels more per acre than some nearby fields. I’d like to think that that was because of better soil structure due to a long history of conservation tillage and a reluctance to work fields that were wet.



We will want to continue with this in the future. I’ll be looking at the same type of project for the next couple of years to see what results I get in a more normal year in terms of rainfall.”

Nitrogen Reduction in Corn Following Soybeans

Site Information

- Normal Rotation: Corn-soybeans
 - Yield Goal for 1991: 170 bu./ac.
 - Field Size: Twenty-four acres total
 - Soil types: Drummer, Throckmorton, Octagon
 - Soil test: pH- 6.0-6.9 OM%- 2.2-4.6 P- 36-76 lbs./ac. K- 164-328 lbs./ac. CEC- 10-17
 - 1990 Crop: Soybeans
 - 1990 yield: 45 bu./ac.
- Two different N rates were replicated and randomized six times. Each treatment was approximately two acres in size.

Management and Inputs

Date	Treatment #1 High N rate	Treatment #2 Low N rate
Nov '90	Spread fertilizer 100 lbs./ac. 18-46-0 & 200 lbs./ac. 0-0-60	
April 15	Sprayed pre-plant herbicides 2.5 pts./ac. Dual & 2 pts./ac. 2,4-D	
May 10	Tillage pass with field cultivator	
May 11	Plant corn in 30" rows Great Lakes 582 Pop: 27,000 w/ 16.4 gal./ac. 25-0-0-3 as liquid starter fertilizer (44 lbs./ac. actual N)	
June 4	Sprayed post-emerge herbicides 1 pt./ac. Buctril & 1 pt./ac. Aatrex 4L	
June 9	38 gal./ac. (25-0-0-3) (100 lbs./ac. actual N)	Sidedress liquid nitrogen 16 gal./ac. (25-0-0-3) (42 lbs./ac. actual N)
Sept 19	105.45 bu./ac.	Harvest* 103.48 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$20.00	\$20.00
Pesticides/acre	26.00	26.00
Fertilizer/acre	54.30	42.70
Machinery & labor/acre	58.27	58.27
Total expenses/acre	\$158.57	\$146.97
Gross income/acre	\$264.15	\$259.22
(-) Expenses/acre	158.57	146.97
Net return/acre	\$105.58	\$112.25

Stan Moore Kosciusko County



Stan farms 400 acres in Kosciusko County. He is married and has two children. His crops include corn, soybeans, wheat and hairy vetch, with 32 sows in a farrow-to-finish operation. Stan has been using a no-till system for ten years and has been experimenting with cover crops for the last three. He is on the Board of Directors of the Indiana Sustainable Agriculture Association and a member of the Indiana Farmers Union.

“My primary interest in alternative farming practices involves the use of rotations and cover crops to reduce the amount of herbicide and fertilizer necessary for satisfactory yields.”

Project Comments

“I had two plots this year. On my cover crop demonstration in corn I think that I may have let the rye get too tall. I should have killed it back much earlier. I think that this hurt my corn emergence and tied up nitrogen. In the future, I intend to watch the growth of the rye more closely and kill it with either chemicals or tillage when it gets about ankle high. I also observed a definitely lower corn population in the fields where the rye and vetch mixture had been. I attribute this to getting toxicity from the rye on my corn leaves.

“As to the hairy vetch, I’m still not sure. It requires a lot of management. Being a southern-type crop, I’ve noticed that it doesn’t over-winter unless I seed it with rye before the first of October. I would like to try seeding it with oats because I think it has some promise in terms of soil tilth if nothing else. I’m still undecided about whether it is going to cut down my fertilizer use or not. I’m still hopeful, but I haven’t seen it yet.

“In the herbicide demonstration in soybeans planted into rye, I did not have a good enough stand of rye to hold back the weeds, and there was a lot of burdock that had to be sprayed. The mowing did do a good job of killing the rye, though.”

Cover Crop Demonstration in No-till Soybeans

Site Information

- Normal Rotation: Corn-soybeans-wheat
- Yield Goal for 1991: 50 bu./ac.
- Field Size: Treatment #1- Five acres
- Soil types: Morley-Glenwood, Kosiusko
- Soil test: pH- 6.5 OM%- 2.5 P- 82 lbs./ac. K- 306 lbs./ac. CEC- 9.3
- 1990 Crop: Corn
- 1990 yield: 100 bu./ac.
- Treatment #2- Five acres

Management and Inputs

Date	Treatment #1 Burndown herbicides only	Treatment #2 Post-emerge herbicides & mowing
Sept '90	Rye cover crop flown on to field 100 lbs./ac. rye seed	
May 8	Burndown herbicides applied 20 oz./ac. Roundup & 7 oz./ac. Preview	No burndown treatment applied
May 15	No-till drilled soybeans DeKalb 366 Pop: 85 lbs./ac.	
May 20	No mowing	Mowed rye cover
June 13	No additional herbicides	Applied post-emerge herbicides 4 oz./ac. Pursuit .125 oz./ac. Pinnacle
Oct 2	Harvest 44.42 bu./ac. 11.2% Moisture	Harvest 38.38 bu./ac. 11.4% Moisture

Economic Results

	#1	#2
Seed/acre	\$16.00	\$16.00
Pesticides/acre	20.70	19.19
Fertilizer/acre	0	0
Machinery & labor/acre	43.57	50.47
Total expenses/acre	\$80.27	\$85.66
Gross income/acre	\$244.42	\$211.19
(-) Expenses/acre	80.27	85.66
Net return/acre	\$164.15	\$125.53

Hal Truax Hendricks County



Hal runs a 1000 acre cash grain operation in Hendricks County, with a rotation of no-till corn, soybeans and wheat. He is married and has two children, and is assisted by his father in the day-to-day operation of the farm. In addition to being a member of the Indiana Sustainable Agriculture Association, he chairs the Hendricks County SWCD, is a member of the Hendricks County Farm Bureau Board and is the Chairman of his township board.

“My primary motivation for being involved in sustainable agriculture comes from my desire to stay in farming, together with being a good steward of the soil. I am interested in lowering inputs relating to fertility, labor and chemicals—essentially all areas of my cropping system. Under this system, I am now seeing a reduced necessity for fertilization and chemical inputs to control weeds. I intend to continue the experiments I’m doing now. I have also closely watched the things that the other members of ISAA have been experimenting with. I’d like to take what they’re doing and incorporate it into my operation. That’s the real benefit of the on-farm demonstration program—to see what other cooperators have done and what their reactions have been to it, so I can use the information myself.”

Project Comments

“This year the limiting factor on this plot was rain. The difference in the yields was not enough to say that more nitrogen is better. I think that this needs more study to see if there is a consistent difference.”

Nitrogen Reduction in No-till Corn

Site Information

- Normal Rotation: Corn-soybeans
- 1990 Crop: Soybeans
- Yield Goal for 1991: 150 bu./ac.
- 1990 yield: 50 bu./ac.
- Field Size: Treatment #1- Ten acres Treatment #2- Ten acres
- Soil types: Crosby, Brookston, Miami
- Soil test: pH- 6.9 OM%- 1.6-3.9 P- 11-92 lbs./ac. K- 93-212 lbs./ac. CEC- 7.6-24.8

Management and Inputs

Date	Treatment #1 High N rate	Treatment #2 Reduced N rate
April 23	Spray pre-plant herbicides 1.7 lbs./ac. Aatrex 9.0, 2.7 lbs./ac. Extrazine DF and 14 oz./ac. 2,4-D Ester	
April 30	Plant no-till corn Beck's 81x Pop: 28,000 w/ 180 lbs./ac. 19-17-0 starter fertilizer	
May 17	40 gal./ac. 28% N (120 lbs./ac. actual N)	Sidedress nitrogen 32 gal./ac. 28% N (95 lbs./ac. actual N)
Sept 21	89.36 bu./ac.	Harvest* 85.3 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$17.06	\$17.06
Pesticides/acre	15.16	15.16
Fertilizer/acre	36.16	31.64
Machinery & labor/acre	47.62	47.62
Total expenses/acre	\$116.00	\$111.48
Gross income/acre	\$223.85	\$213.68
(-) Expenses/acre	116.00	111.48
Net return/acre	\$107.85	\$102.20

Alan Yegerlehner Clay County



Alan manages a diversified farming operation in Clay County with the help of his father, his wife, Mary, and their three children. The farm integrates dairying with ridge-till corn, soybeans and wheat production on approximately 500 acres. Alan is past President of Indiana Sustainable Agriculture Association, a member of the Indiana Farm Bureau and an Advisory Board member of Farm Credit Services.

“My main area of interest and motivation in sustainable agriculture is in keeping the soil in place, ensuring water quality and improving soil life. What I mean by that is not just sustaining the soil but regenerating it. I want to make it better. I began experimenting with alternative practices with these goals in mind, about 1979. At that time, we were having some mastitis problems in our cows that we couldn’t get straightened out with antibiotics. We got on a program called ‘Impro’ which is an antibody type of system. Through working with them we got interested in the relationship between soil health, animal health and people’s health. Since then we have started getting into all aspects of it.”

Project Comments

“In terms of this year’s plot, the way I look at it, buying a little extra nitrogen paid, but not much. The higher rate definitely did not pay. The plot was set up to see how much nitrogen I could grow using hairy vetch and how far I could cut back on my outside inputs. The root systems of the vetch helped to loosen up the top four to six inches of soil.

The top growth when tilled under with the cultivator created a nice mulch to hold soil moisture. On the economic side, the cost of the vetch plus the additional N may not have been any cheaper than purchasing all my N, but I also received the additional organic matter, improvement in soil structure, tilth and increased water infiltration that I wouldn’t have gotten if I’d purchased all my N in liquid or pellet form. I plan on continuing this project with vetch. Two or three more years of data will give me more established information to go by.

“We also had a herbicide plot this last year. The ridge-till system lends itself well to reduced herbicide usage, so there were no herbicides used on this plot, and I wanted to look at whether I could get better weed control by spring seeding a cover crop. I really couldn’t tell much difference in weed pressure between the two plots. We had a little cultivator blight, and by not using herbicides we did have some pigweed and lambsquarter bushing out on the bare spots, but it wasn’t yield limiting. I do, however, have a concern regarding future weed pressure. I still believe that the mow and sow beans could work with a better stand of rye. We probably should have done some weed counts to get a better handle on this, but we really didn’t have the time to do it. This method may lend itself better as a smother crop ahead of no-till rather than ridge-till.”



Nitrogen Reduction Demonstration in Ridge-till Corn Following a Hairy Vetch Cover Crop

Economic Results

- Normal Rotation: Corn-soybeans-corn-soybeans-wheat
- Yield Goal for 1991: 135-140 bu./ac.
- Field Size: Seven acres total.
- Soil types: Vigo silt loam, Ava silt loam
- Soil test: pH- 6.5-6.6 OM%- 2.8-3.3 P- 321-388 lbs./ac. K- 328-378 lbs./ac. CEC- 9.3-10.4
- 1990 Crop: Wheat
- 1990 yield: 45 bu./ac.

• This plot compared the use of hairy vetch as a cover crop to supplement nitrogen inputs. Three treatments, each representing a different rate of 28% nitrogen, were replicated six times in six row strips across the test field. To simplify the plot, Alan chose not to randomize the treatments.

Management and Inputs

Date	Treatment #1 No sidedress N	Treatment #2 50% rate N	Treatment #3 Full rate N
Sept 10, '90	Plant vetch on ridges after wheat harvest 25 lbs./ac. vetch planted with conventional drill		
May 2	Mow vetch with rotary mower		
May 3	Planted corn on ridges Moews 3860 Pop: 26,000 w/ 85 lbs./ac. 28 % N band applied behind planter (24 lbs./ac. actual N)		
May 24	First cultivation		
June 7	Second cultivation, rebuild ridges & sidedress nitrogen		
	No additional N applied	138 lbs./ac. 28% N (39 lbs./ac. actual N)	325 lbs./ac. 28% N (91 lbs./ac. actual N)
Oct 19	Harvest*		
	126.5 bu./ac.	133.3 bu./ac.	131.6 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2	#3
Seed/acre	\$38.88	\$38.88	\$38.88
Pesticides/acre	0	0	0
Fertilizer/acre	4.25	11.15	20.50
Machinery & labor/acre	69.98	69.98	69.98
Total expenses/acre	\$113.11	\$120.01	\$129.36
Gross income/acre	\$316.88	\$333.92	\$329.66
(-) Expenses/acre	113.88	120.01	129.36
Net return/acre	\$203.77	\$213.91	\$200.30

John Mercer Boone County



John Mercer farms 840 acres with his father near Jamestown. He is married and has one daughter. His cropping system includes chisel plowing and residue management with a rotation of corn, beans and wheat. John also raises hogs and serves on the Board of Directors of his local pork producers cooperative.

“My basic interest regarding sustainable agriculture and alternative farming practices is to look at the economics, while trying to improve the land by increasing or maintaining yields with fewer inputs. Right now we’re just looking at it. I’m not sure yet that the economics are such that we’re saving too much with sustainable practices, but I think we’ve got to look that way.”

Project Comments

“I think we’ve learned quite a bit with this year’s plot. We cut our nitrogen use by roughly 50 units from what we would normally use in a corn/bean rotation after soybeans. The 50 units didn’t quite come out economically to offset the vetch. I think that we did improve the land some with it. That will probably bear itself out more in the future. We might have been able to save a little more than we did. I don’t know how much. We were pretty dry here, and I don’t know how much it effected our plot. We’re going to continue to look at it. Also with the dryness, and the vetch we sowed last August, I’m not sure that we’re going to have as good a crop going into the spring as we did last year. That might have an effect on what we do in the future.”

Nitrogen Reduction Demonstration in Corn Following a Hairy Vetch Cover Crop

Economic Results

- Normal Rotation: Corn-soybeans-wheat
- Yield Goal for 1991: 160 bu./ac.
- Field Size: Twenty-five acres total.
- Soil types: Fincastle, Brookston, Ragsdale
- Soil test: pH- 6.6-7.1 OM%- 2.5-1.9 P- 52-34 lbs./ac. K- 166-202 lbs./ac. CEC- 9.5-14.8
- 1990 Crop: Wheat/hairy vetch
- 1990 yield: 81 bu./ac.

- These plots were laid out in alternating six row strips across the field.

Management and Inputs

Date	Treatment #1 Reduced N at sidedress	Treatment #2 No N at sidedress
Aug '90		Drilled hairy vetch 25 lbs./ac.
Nov '90		Spread fertilizer: 100 lbs./ac. 18-46-0 & 200 lbs./ac. 0-0-60
April 30		Moldboard plowed hairy vetch 98% stand, 18"-30" tall
May 2		Disked field
May 3		Spray herbicides and incorporate 2.4 qts./ac. Bicep Planted corn Pioneer 3379 Pop: 27,700 w/ 80 lbs./ac. 10-34-0 starter fertilizer 2"x2" & 60 lbs./ac. 28% N band applied (25 lbs./ac. actual N)
June 3	Sidedress 25 gal./ac. 28% N (75 lbs./ac. actual N)	No additional N applied
July 6		Tissue tests taken
Oct 18	124.6 bu./ac.	Harvest* 113.0 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$37.50	\$37.50
Pesticides/acre	16.27	16.27
Fertilizer/acre	54.58	37.44
Machinery & labor/acre	75.06	68.46
Total expenses/acre	\$183.41	\$159.67
Gross income/acre	\$312.12	\$283.07
(-) Expenses/acre	183.41	159.67
Net return/acre	\$128.71	\$123.40

Perry Clamme Blackford County



Perry and his wife, Sandy, farm 2000 acres in Blackford County. The operation is all no-till cash grain with 25 head of beef cattle. Perry is assisted on the farm by his brother-in-law who is a full-time employee. He is a member of the Indiana Sustainable Agriculture Association and serves as Vice-Chair of the Blackford County SWCD Board.

“My primary motivation in getting involved in sustainable agriculture comes out of a desire to be on the leading wagon. I think there needs to be a vehicle which fuses the past to the present. We’re in contact with the group here, ISAA, and with other visionaries who are slugging it out the hard way to explore sustainable farming situations. I am also interested in the input of the home gardener and the organic farmer. I realize that the goals are probably not the same, but how we get there may be beneficial to each other. I also want to be liked by the people who live around me and I want to enjoy the same standard of living. That’s why I want to farm the same number of acres as my neighbors, but do it in

a way that’s environmentally aware. I don’t like waste and I don’t like pollution and I see sustainable agriculture as being on the forefront, and that’s where I want to be.”

Project Comments

“In terms of this year’s plot, I have a landowner who doesn’t like the use of anhydrous. He believes that you can use the same dollar amount of 28% and come out with the same yield. I decided to test out that belief by using equivalent dollar amounts of 28% and the lower priced NH_3 . This was a particularly dry year and in these circumstances the old guys say that corn lives on nitrogen. This plot shows that it does. So at least for 1991, the higher application rates of N were needed to achieve a realistic yield. On another field using similar management, 150 units of N yielded 126 bushels per acre. I wish that some year we’d have a normal weather pattern to see if we’d get the same results.”



Nitrogen Reduction Demonstration in No-till Corn

Site Information

- Normal Rotation: Corn-soybeans-wheat
- Yield Goal for 1991: 150 bu./ac.
- Field Size: Treatment #1- 6.2 acres
- Soil types: Glynwood, Eldean
- Soil test: pH- 6.6 OM%- 2.5 P- 66 lbs./ac. K- 335 lbs./ac. CEC- 15
- 1990 Crop: Corn
- 1990 yield: 136 bu./ac.
- Treatment #2- 6.2 acres

• This plot was laid out in alternating, planter width strips across the field.

Management and Inputs

Date	Treatment #1 82% N	Treatment #2 28% N
April 12		Broadcast dry fertilizer 188 lbs./ac. 0-0-60
May 2		Plant no-till corn Crows 498 Pop: 26,600 with 96 lbs./ac. 10-36-0 starter & 6.2 lbs./ac Lorsban
May 3		Spray pre-emerge herbicides 1 gal./ac. Extrazine 4L
May 26		Spray post-emerge herbicides 10 oz./ac. Banvel
June 9	96 lbs./ac. 82% N (78.7 lbs./ac. actual N)	Sidedress nitrogen 19.5 gal./ac. 28% N (57.4 lbs./ac. actual N)
Sept 14	112 bu./ac.	Harvest* 96.8 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$16.53	\$16.53
Pesticides/acre	28.64	28.64
Fertilizer/acre	36.01	36.93
Machinery & labor/acre	55.20	55.20
Total expenses/acre	\$136.38	\$137.30
Gross income/acre	\$280.56	\$242.48
(-) Expenses/acre	136.38	137.30
Net return/acre	\$144.18	\$105.18

Herb Fields Benton County



Herb farms 351 acres in Benton County. His rotation consists of corn, soybeans and wheat with clover, which is used for a spring plow-down. Herb is married, has four children, and is a member of the Indiana Sustainable Agriculture Association.

“I am primarily interested in sustainable agriculture because I know it works. From my experiences and what I have read, I know that I’m on the right track in my thinking that a healthy soil doesn’t really have all that much to do with purchased N, P and K. I believe that there is a way to farm the soil that will produce good crops and regenerate itself without buying a lot of inputs. I think that if you have a healthy, biologically balanced soil, the nutrients in the ground are more readily available to the crop. That’s why organic matter is so very important and why I feel some of these things on fertilizers are just a little bit overrated.”

Project Comments

“This year was a rough one in terms of dryness, but it is something that you don’t have any control of. It changes things that you just can’t do anything about. One thing though that I intend to look at more closely, is reducing nitrogen application by planting clover in the fall. I’m also working on a contract with the town of Audubon to utilize sludge. Besides that, I’m interested in buckwheat. I’ve read that it acts as a phosphorous pump, bringing it up and making it more available to the crop. I’m going to try a little of that. I’m also interested in using hairy vetch not only as a cover crop, but as a source of nitrogen. I thought I might run some soil tests and plant vetch and see how it effects nitrogen availability. I guess I’m just more interested in farming like that. I’m not really knocking fertilizer, but I just don’t think we need as much as we’ve been using. Of course, if you’re not willing to use rotations, leave some ground idle and use cover crops, then you might as well be a good buddy to your fertilizer and chemical dealers.”

Nitrogen Reduction Demonstration in Corn Following a Clover Cover Crop

Site Information

- Normal Rotation: Corn-soybeans-wheat/clover
- Yield Goal for 1991: 125 bu./ac.
- Field Size: Twenty-two acres total
- Soil types: Chalmers
- Soil test: pH- 6.1 OM%- 3.4 P- 30 lbs./ac. K- 172 lbs./ac. CEC- 18.7
- 1990 Crop: wheat
- 1990 yield: 77 bu./ac.

• Two nitrogen rates were replicated six times in alternating strips across the test plot.

Management and Inputs

Date	Treatment #1 Full N rate	Treatment #2 Reduced N rate
Nov '90	Fall plow clover cover crop	
April 24	Field cultivate	
May 8	Field cultivate	
May 14	Field cultivate & plant corn Battle Ground 3355 Pop: 22,000 with 130 lbs./ac. 4-10-10 liquid starter	
June 3	Aerial apply post-emergence herbicides 2.0 lbs./ac. Aatrex and 1.0 qt./ac crop oil	
June 7	(103 lbs./ac. actual N)	(61 lbs./ac. actual N)
June 12	Cultivate	
Nov 6-8	57.5 bu./ac.	57.3 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$12.00	\$12.00
Pesticide/acre	7.87	7.87
Fertilizer/acre	33.17	23.09
Machinery & labor/acre	77.55	77.55
Total expenses/acre	\$130.59	\$120.51
Gross income/acre	\$144.04	\$143.54
(-) Expenses/acre	130.59	120.51
Net return/acre	\$13.45	\$23.03

Rod Isfalt Boone County



Rod farms approximately 850 acres in Boone County with the assistance of one full-time hired hand. His farming operation integrates cash grain crops with a farrow-to-finish hog operation. He has been working toward a modified no-till system, but he feels he will probably need to do some cultivation to control weeds. Rod is married and has four children.

"I am looking at alternative practices out of a desire to improve the quality of the soil, to promote biological activity and to try to work with natural processes rather than to work against them. I would rather let nature do everything it can for us, and then fill in the gaps. I think conventional,

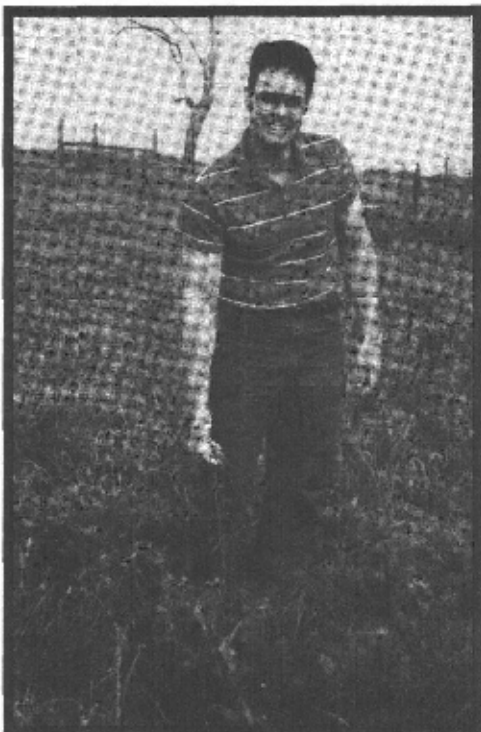
higher input farming is trying to do everything artificially. Because of this, I'm interested in cover crops, rotations, less cultivation and trying to improve the natural activities within the soil."

Project Comments

"In this year's plot, I experienced no apparent difference in yield resulting from different N rates, however, rainfall was probably more of a limiting factor than nitrogen supply.

"I also had a plot that was planted to hairy vetch after the wheat crop last fall. We let it go this spring until May 10th when it was 18 to 30 inches tall. Then we disked it down and planted. I had a hard time getting the vetch worked down, but the corn population looked very good. At sidedress, we applied 70 pounds of N. The corn in this plot yielded approximately 20 bushels per acre less than the higher N rate plots. This was probably due to limited organic N conversion caused by the drought conditions.

"I intend to continue experimenting with cover crops. I am very interested in trying some interseeding at last cultivation with different crops. I will also be looking at tillage practices. We will probably leave some areas straight no-till and do no-till planting combined with some cultivation and compare that with our conventional practices. We will need to get some experience with this and see if we can draw some conclusions over the next few years."



Nitrogen Reduction in Corn Following Wheat

Site Information

- Normal Rotation: 2Corn-soybeans-2corn-soybeans-wheat
- Yield Goal for 1991: 150 bu./ac.
- Field Size: Twenty acres total
- Soil types: Mahalassville, Whitaker, Fincastle
- Soil test: pH-5.8-6.7 OM%- 2.4-4.6 P- 38-122 lbs./ac. K- 91-170 lbs./ac. CEC- 9.6-20.6

- 1990 Crop: wheat
- 1990 yield: 77 bu./ac.

• Two nitrogen rates were replicated and randomized nine times across the twenty acre test plot.

Management and Inputs

Date	Treatment #1 Full N rate	Treatment #2 Reduced N rate
Aug-90	Chisel plow	
May 10	Disk field and plant corn FFR 660 Pop: 25,000 with 100 lbs./ac. 10-34-0 starter fertilizer & 3.5 qts./ac Extrazine II & .5 lbs./ac. Aatrex banded through the planter	
June 1	195 lbs./ac. 82% N (160 lbs./ac. actual N)	159 lbs./ac. 82% N (130 lbs./ac. actual N)
	Cultivate and sidedress nitrogen w/ 1.0 qts./ac. N-serve	
Oct 10	99.0 bu./ac. Average of yields from 9 replicated treatments	99.78 bu./ac. Average of yields from 9 replicated treatments

* All yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$20.00	\$20.00
Pesticides/acre	5.04	5.04
Fertilizer/acre	40.21	36.00
Machinery & labor/acre	52.06	52.06
Total expenses/acre	\$117.31	\$113.10
Gross income/acre	\$248.00	\$249.95
(-) Expenses/acre	117.31	113.10
Net return/acre	\$130.69	\$136.85

Joe Rund Tippecanoe County



Joe farms 850 acres in Tippecanoe County with his son, Pat, and his wife, Lorraine. Although having run a beef/cash grain operation in the past, Joe now devotes all his efforts to raising corn and soybeans, occasionally working wheat into the rotation. Besides being a member of the Indiana Sustainable Agriculture Association, Joe serves on the Board of the Tippecanoe County SWCD and was a member of the Indiana Conservation Tillage Association while it was in existence.

“My primary motivation for becoming active in sustainable agriculture evolved out of a concern for the soil. I was an agronomy and soils major in college and was mainly interested in soil erosion on rolling ground. I’ve been at it for the last 40 years and it’s been an on-going education. The most significant thing that I have learned was that if you keep the ground covered it won’t move away. In our area raindrop impact is crucial as we frequently experience violent downpours. If you reduce the raindrop impact you greatly reduce erosion.”



Project Comments

“In terms of this year’s plot, I was really surprised that there was a difference because of the dryness and the thickness of the population. I had some problems with the planter and found out later that I had planted at a population of about 35,000 plants per acre, and I thought that there might be some penalty for the high population rate. Luckily this still worked out okay because there is a higher percentage of Drummer soil than the other two which have a lower water holding capacity. Those two soils had 11,000 barren stalks per acre compared with only 4000 barren stalks on the Drummer soil. The extra 7000 ears per acre on the drummer held the average up. I really wish that we could see the results of this plot done in a year with normal rainfall in order to confirm our results.

“As far as the future is concerned I would like to start experimenting with some better hybrids. It seems to me that we are increasingly experiencing more hot/dry weather and I would like to look at some of the hybrids from the SW gene pool to see whether we can better coordinate the silking/pollination process with some varieties that are hearty in that climate.”

Nitrogen Reduction in Ridge-till Corn

Site Information

- Normal Rotation: Corn-soybeans
- Yield Goal for 1991: 180 bu./ac.
- Field Size: Treatment #1- Ten acres
- Soil types: Drummer, Lauramie, Octagon
- Soil test: pH- 5.3-6.0 OM%- 3.2-4.9 P- 72-128 lbs./ac. K- 192-316 lbs./ac. CEC- 16.9-24.7
- 1990 Crop: Soybeans
- 1990 yield: 40 bu./ac.
- Treatment #2- Ten acres

• Two nitrogen rates were laid out in alternating strips across the twenty acre test plot.

Management and Inputs

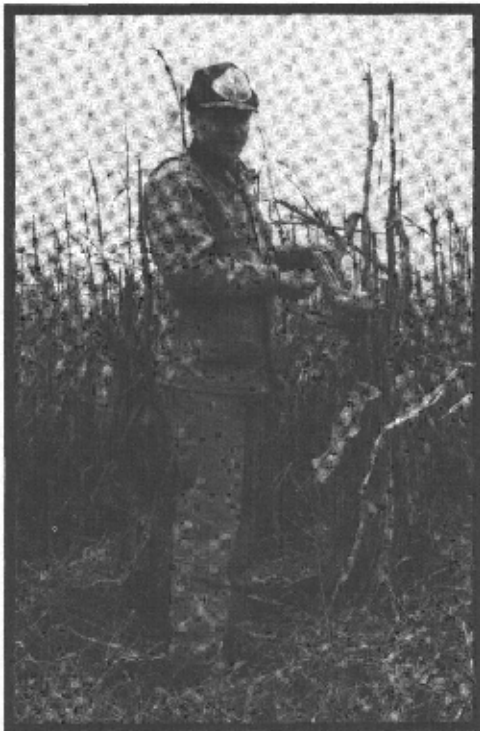
Date	Treatment #1 Full N rate	Treatment #2 Reduced N rate
April 14		Spot spray burn-down herbicides 1 qt./ac. Bladex 4L
April 24		Plant ridge-till corn & band herbicides Prairie Stream Farm 704 Pop: 35,000 w/ 115 lbs./ac. 7-22-5 starter fertilizer & 1.5 qts./ac. Bicep w/ 10 gal./ac. 28% N (30 lbs./ac. N) & 7 lbs./ac. Dyfonate II on outer 2 rows
May 18	208 lbs./ac. 82% N (171 lbs./ac. actual N)	163 lbs./ac. 82% N (134 lbs./ac. actual N)
May 29		Cultivate and build ridges
Oct 1	132 bu./ac.	136 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$27.13	\$27.13
Pesticides/acre	20.08	20.08
Fertilizer/acre	30.98	27.35
Machinery & labor/acre	58.98	58.98
Total expenses/acre	\$137.17	\$133.54
Gross income/acre	\$330.66	\$340.68
(-) Expenses/acre	137.17	133.54
Net return/acre	\$193.49	\$207.14

Barry Eppley Wabash County



Barry and his family farm 2100 acres in Wabash County. The operation is dedicated to cash grain production under a modified ridge-till/zone-till system that uses three Rawson colters ahead of the planting units. Barry feels that this approach has the advantages of both the ridge and minimum till systems.

Barry is a member of the Indiana Sustainable Agriculture Association, and has been a cooperator for the Rodale Institute for the last three years. He is also a Supervisor for the Wabash County SWCD.

“My motivation for looking at alternative practices has been essentially economic — trying to improve the bottom line. It has been hard to maintain productivity in the ‘80s, and throughout that time period we have been looking at ways to reduce expenses while maintaining income. This has been the driving force behind all of the things we’ve looked into.”

Project Comments

“This was the third year in a row that we found N not to be a yield limiting factor. 1991 had wet weather in May, followed by dry weather in July and August.

“The main thing that we learned from this year’s plot is that we need to continue looking at the same set of criteria until we begin to see some years of data with more normal weather conditions.”

Nitrogen Reduction in Ridge-till Corn

Site Information

- Normal Rotation: Corn-soybeans
- Yield Goal for 1991: 150 bu./ac.
- Field Size: 4.62 acres total
- Soil types: Cyclone, Fincastle
- Soil test: pH-5.8 OM%- 2.8 P- 73 lbs./ac. K- 172 lbs./ac. CEC- 11.0
- 1990 Crop: Soybeans
- 1990 yield: 45 bu./ac.

• Two nitrogen rates were each replicated and randomized six times across the test plot.

Management and Inputs

Date	Treatment #1 Full N rate	Treatment #2 Reduced N rate
April 29	Spray herbicides 3.3 lbs./ac. Extrazine & 2 pts./ac. 2,4-D	
April 30	Plant corn on ridges M&O 521 Pop: 26,000	
May 29	Test soil for nitrates 25 ppt ₁ (NO ₃ -N) nitrate nitrogen present	
June 7	40 gal./ac. 28% N (120 lbs./ac. actual N)	Sidedress nitrogen & cultivate 20 gal./ac. 28% N (60 lbs./ac. actual N)
Oct 22	107.42 bu./ac. Average of 6 replications	Harvest* 102.05 bu./ac. Average of 6 replications

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$17.88	\$17.88
Pesticide/acre	27.26	27.26
Fertilizer/acre	25.49	12.74
Machinery & labor/acre	48.90	48.90
Total expenses/acre	\$119.53	\$106.78
Gross income/acre	\$269.09	\$255.64
(-) Expenses/acre	119.53	106.78
Net return/acre	\$149.53	\$148.86

Additional Project Results

Stan Moore — Kosciusko County Cover Crop Demonstration in Corn

Site Information

- Normal Rotation: Corn-soybeans-wheat
- Yield Goal for 1991: 110 bu./ac.
- Field Size: Treatment #1 - Five acres
- Soil types: Kosciusko
- Soil test: pH- 6.5 OM%- 2.5 P- 82 lbs./ac. K- 306 lbs./ac. CEC- 9.3
- 1990 Crop: Soybeans
- 1990 yield: 45 bu./ac.
- Treatment #2 - Five acres

Management and Inputs

Date	Treatment #1	Treatment #2
Sept '90	No cover crop established	Aerial seeded rye/vetch cover crop 80 lbs./ac.
April 8	Spread fertilizer 100 lbs./ac. 0-0-60	
May 2	Colter-chisle plow	
May 8	Disk	
May 9	Plant no-till corn in 30" rows Champion 3630 Pop: 24,500 w/ 80 lbs./ac. 10-34-0 starter fertilizer & 5 lbs./ac. Lasso IIG in a 7" band over the row.	
June 6	First cultivation	
June 8	Sidedress nitrogen 122 lbs./ac. 82% N (100 lbs./ac. actual N)	
June 25	Second cultivation	
Sept 25	123.44 bu./ac.	100.82 bu./ac.

* Yields corrected to 15.5% moisture.

Economic Results

	#1	#2
Seed/acre	\$12.60	\$36.60
Pesticides/acre	7.25	7.25
Fertilizer/acre	29.15	29.15
Machinery & labor/acre	77.10	82.60
Total expenses/acre	\$126.10	\$155.60
Gross income/acre	\$309.22	\$252.55
(-) Expenses/acre	126.10	155.60
Net return/acre	\$183.12	\$96.95

Hal Truax — Hendricks County

Herbicide Reduction in No-till Soybeans Planted into a Wheat Cover Crop

Site Information

- Normal Rotation: Corn-soybeans
- Yield Goal for 1991: 50-60 bu./ac.
- Field Size: Treatment #1 - Ten acres Treatment #2 - Ten acres
- Soil types: Crosby, Brookston, Miami
- Soil test: pH- 6.9 OM%- 2-6.8 P- 13-72 lbs./ac. K- 81-225 lbs./ac. CEC- 8.8-23.6
- 1990 Crop: Corn
- 1990 yield: 160 bu./ac.

Management and Inputs

Date	Treatment #1	Treatment #2
March 11	No cover crop	Plant wheat cover crop two bu./ac.
May 8	Spray burndown herbicides 8 oz./ac. Roundup, 8 oz./ac. 2,4-D ester & 1.5 lbs./ac. Ammonia Sulf.	No burndown application
May 9	Plant no-till soybeans Resnick Variety Pop: 230,000	
May 20	Spray post-emerge herbicides .25 oz./ac. Pinnacle, .25 oz./ac. Classic and .92 pt./ac. Option w/ .75 qt./ac. crop oil and .75 gal./ac. 28% N	
Sept 13	44.8 bu./ac. 9% Moisture	Harvest 22.57 bu./ac. 11% Moisture

Economic Results

	#1	#2
Seed/acre	\$16.81	\$25.81
Pesticides/acre	25.94	21.95
Fertilizer/acre	0	0
Machinery & labor/acre	42.05	41.93
Total expenses/acre	\$84.80	\$89.69
Gross income/acre	\$246.51	\$124.19
(-) Expenses/acre	84.80	89.69
Net return/acre	\$161.71	\$34.50

Alan Yeagerlehner — Clay County

Spring Seeded Rye for Weed Control in Ridge-till Soybeans

Site Information

- Normal Rotation: Corn-soybeans-corn-soybeans-wheat-2hay
- Yield Goal for 1991: 45-50 bu./ac.
- Field Size: Ten acres total.
- Soil types: Ava, Stendal
- Soil test: pH- 6.5-6.6 OM%- 3.1-3.6 P- 380-481 lbs./ac. K- 230-306 lbs./ac. CEC-11.5-12.3
- 1990 Crop: Corn
- 1990 yield: 125 bu./ac.

• This plot compared the allelopathic qualities of spring seeded rye for weed control. Two treatments, one with rye and one without, were each replicated six times in twelve row strips across the test field. To simplify the plot, Alan chose not to randomize the treatments.

Management and Inputs

Date	Treatment #1 No cover crop	Treatment #2 With cover crop
Jan* 91		Drag corn stalks
April 3	No rye cover planted	Plant rye cover on ridges with conventional grain drill two bu./ac.
May 1		Mow weeds on ridges
May 11		Plant soybeans on ridges FFR 339 Pop: 60 lbs./ac. No herbicides applied
May 20		Rotary Hoe
May 22		Rotary Hoe
May 28		First cultivation
June 3		Second cultivation
June 25		Final cultivation and build ridges
Sept 23	49.7 bu./ac.	Harvest* 47.5 bu./ac.

* Harvested at 12% moisture.

Economic Results

	#1	#2
Seed/acre	\$15.00	\$25.00
Pesticides/acre	0	0
Fertilizer/acre	0	0
Machinery & labor/acre	71.75	71.75
Total expenses/acre	\$86.75	\$104.97
Gross income/acre	\$273.47	\$261.39
(-) Expenses/acre	86.75	104.97
Net return/acre	\$186.73	\$156.42

Notes



American Farmland Trust
Sustainable Agriculture Program

"Land," said Aldo Leopold, "is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants and animals."

Unfortunately, many of the farming practices commonly used by agricultural producers over the last few decades have severely altered this biological "circuit." Soil erosion and sedimentation, the widespread contamination of ground and surface waters, and the loss of wildlife habitat . . . all are serious problems that, in part, stem from man's agricultural activities.

Sustainable agriculture is an alternative approach to crop and livestock production that encourages the use of practices that do not degrade land or water resources. Sustainable farming methods make better use of biological assets and reduce overall reliance on purchased agricultural inputs.

On-farm research and demonstration projects conducted in recent years throughout the U.S. have proven that sustainable farming systems work, and that they are as productive and profitable as conventional systems.

The American Farmland Trust Sustainable Agriculture Program works with agricultural producers to promote alternative farming systems which are practical, profitable and environmentally sound. To accomplish this, staff work in three program areas:

- Assistance to grassroots organizations: AFT assists in the establishment of farmer-directed groups which play a fundamental role in promoting sustainable agriculture.
- Advocacy: AFT promotes the development of public policy and programs that support alternative farming systems at the local, state, and federal levels.
- On-farm demonstration and research projects: AFT makes financial and technical assistance available for farmers to experiment with alternative production techniques.

In addition, the Sustainable Agriculture Program provides educational opportunities for farmers. Workshops, field days, conferences, and publications are all part of this effort.

As we advance into the future, so must we increase our efforts to become better stewards of the land. The American Farmland Trust is committed to this philosophy. The Sustainable Agriculture Program will continue its efforts to promote alternative farming systems, so the resource base that supports us all can remain productive for many generations to come.

Indiana Sustainable Agriculture Association

The Indiana Sustainable Agriculture Association (ISAA) is a statewide, not-for-profit educational organization committed to the development and use of sustainable farming systems.

Formed in 1988 by a group of innovative farmers and agricultural professionals, ISAA works to;

- Increase awareness and educate the public on sustainable agriculture issues,
- Promote research that will determine the sustainability of alternative farming systems,
- Aid in the development of sustainable agriculture techniques suitable for use on Indiana farms, and assist in their adoption by the state's farmers, and
- Encourage cooperation between producers, agribusiness, researchers and government agencies for the development of sustainable farming systems.

Soil conservation, water quality and wildlife issues are also concerns of ISAA members.

ISAA believes that Indiana producers need access to practical, readily usable information on sustainable farming systems.

The organization holds field days, workshops and farmer meetings throughout the year to educate its members on ways to reduce the negative ecological impact of production practices and to farm more profitably.

The organization participates in the establishment of on-farm demonstration plots designed by farmers and agricultural professionals to compare conventional and alternative production methods.

Members of ISAA receive newsletters and special mailings on sustainable agriculture issues and events.

ISAA Membership Application

Name _____ \$25 — Individual or Family Membership

Address _____ Other (Contributions welcome)

City _____ State _____ Zip _____

Phone _____ Please make check payable to ISAA.

Mail your completed membership form and check to:

ISAA/Craig Dobbins, Department of Agricultural Economics, Purdue University,
1145 Krannert Bldg., Room 621, West Lafayette, IN 47907-1145

The **Indiana Sustainable Agriculture Association (ISAA)** is a statewide, not-for-profit educational organization committed to the development and use of sustainable farming systems.

Indiana Sustainable Agriculture Association
c/o Craig Dobbins
Department of Agricultural Economics
Purdue University
1145 Krannert Bldg., Room 621
West Lafayette, IN 47907-1145

The **American Farmland Trust (AFT)** is a private, non-profit, membership organization founded in 1980 to protect our nation's farmland. AFT works to stop the loss of productive farmland and to promote farming practices that lead to a healthy environment. Annual membership is \$20.00.



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