1983

CONSERVATION TILLAGE

TEST RESULTS

ALLEN COUNTY, OHIO

ALLEN SOIL & WATER
CONSERVATION DISTRICT

U.S. ENVIRONMENTAL
PROTECTION AGENCY

SOIL CONSERVATION SERVICE

ALLEN COUNTY COOPERATIVE
EXTENSION SERVICE, OSU

ALLEN SOIL & WATER CONSERVATION DISTRICT

219 W. Northern Ave. **Lima, Ohio 45801** **Phone 223-0(**

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To Allen County Residents:

The Allen Soil and Water Conservation District proudly presents these 1983 Conservation Tillage Results. The information in this booklet is compiled from hundreds of plots scattered throughout Allen County, many from you neighbor's farms. This booklet represents the sixth year of our on-going program of testing and applying conservation tillage systems

The 1983 growing season was recorded as one of the dryest in many years resulting in greatl reduced crop yields countywide. The yields collected were very irregular because of the drought and variations in rainfall patterns. Yields varied greatly within fields and between fields. These factors should be considered when evaluating this years results. Possibly a better indicator of the conservation tillage performance is the trend developed over several years of testing as explained in this booklet.

Conservation tillage has proved itself in Allen County against the moldboard plow. With the latest technical information plus improved minimum tillage tools and no-till planters, conservation tillage does save you time, fuel, and soil without sacrificing yields. With the addition of no-till wheat in the District program this year, we are now able to demonstrate successful results in growing the three major crops; corn, soybeans, and wheat. The results enclosed proves you have the option of successfully producing these crops with conservation tillage methods.

A special thanks is extended to all the participating farmers in this program. This information provided us with a broad spectrum of data from all areas of the county. Without the donation of their time and land, this program would not have been possible. Also, thanks is extended to all the agricultural chemical and seed companies who donated time, materials and technical assistance for many of our plots.

The data in this publication does not intend to represent research but rather observations and judgements on what we've seen in Allen County. We attempt to present the information unbiased and include all participants in the program. Understand that our tests are field size and many are not replicated. Finally the use of certain products or brand names is not meant to be an endorsement of their use by the Allen SWCD but only given to document the experiences of our demonstrations.

This years program was made possible through a grant supplied by the United State Environmental Protection Agency. This grant is used to promote conservation tillage on the land by providing assistance to area farmers. The goal is to reduce soil erosion, thereby improving stream and lake water quality. The Allen SWCD is very appreciative of the funds received to sponsor our program. The grant has enabled us to make much more equipment and manpower available to you than we could have with our own resources. We would hope that after reviewing this publication you are motivated to try a test on your farm. Our goal is for all cropland to be farmed using the best conservation methods available. Will you help us reach it?

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Cover Photo: Wintertime soil erosion between a fall plow and a no-till plot. Once the soil particles are detached from the soil surface as in the fall plow plot, they are very easily transported by wind and water to our streams and lakes.

THE ALLEN SWCD DEMONSTRATION PROJECT

This report marks the sixth of a series of reports published by the Allen SWCD. This report has been expanded as a result of a grant from the United States Environmental Protection Agency. In July of 1980 the Allen Soil and Water Conservation District was awarded $496,884 from the U.S. EPA to conduct a Water Quality Demonstration Project. This grant was issued to promote ways of reducing sediment and nutrients from entering area streams and thereby being transported to Lake Erie. Methods that are being promoted to reduce sediment and nutrient losses are improvement of residential sewage systems and adoption of conservation tillage farming practices.

A total of $132,000 of the EPA grant is set aside for the residential sewage program and the remaining $364,884 is devoted to the conservation tillage promotional program. The residential sewage improvements are being coordinated thru the Allen County General Health District by an agreement signed with the Allen SWCD. The Districts main responsibility is administering the conservation tillage portion of the program to which this publication is devoted.

The Allen SWCD Conservation Tillage Program involves four different promotional aspects. They are as follows:

1. Providing technical assistance to farmers to improve their skills in conservation tillage management.
2. Providing conservation tillage equipment for farmers to use in a hands-on approach. The proper use and operation of this equipment is stressed.
3. Conducting tours, training meetings, and field days to exhibit and explain the status of the conservation tillage plots.
4. Recording and publicizing the results and observations of those involved in the project.

A key element of the project is that participation from farmers is sought on a voluntary basis. Incentives used are equipment and technical help, rather than financial payments to carry out the practice. In order to determine the workability of this approach both current and future conservation tillage acreage within the county is being monitored, to determine changes over the life of the program.

Status Report

This year was the third year of grant monies used. This money was used basically for acquiring equipment, office supplies and salaries. The equipment that was available in 1983 was as follow:

1. Two coulter-chisels and two offset discs for fall tillage work
2. Four no-till planters for corn and soybeans
3. Two no-till grain drills for soybeans
4. Four weigh wagons for plot checks

This equipment was available to any area farmer as long as they followed the quidelines set by the Allen Soil and Water Conservation District Board of Supervisors.

Below are the accomplishments of the project for 1983. The conservation tillage figures represent only the farmers that participated in our program and do not include farmers using conservation tillage on their own. The no-till figures represent, to the best of our knowledge, the total acres of no-till for 1983 in Allen County.

1983 CONSERVATION TILLAGE PLOTS ACCOMPLISHED

TYPE OF PLOT	ACRES WITH DISTRICT EQUIPMENT	ACRES WITH FARMERS EQUIPMENT	#FARMS PARTICIPATING
No-Till Corn	465	464	50
No-Till Beans	683	55	45
No-Till Wheat	219	--	19
Coulter Chisel	422	47	27
Offset Disc	196	88	16

Number of Conservation Tillage Plots	185
Total acreage in Conservation Tillage Plots	2,618
Total acreage no-tilled in Allen County	2,706
Total number of landowners no-tilling	108

Observations

The interest in conservation tillage is greatly increasing. Publicizing conservation tillage in both the area and on a nationwide scale is a very important tool in promoting this idea. Possibly, the most effective method is continued good results by area farmers. Word of mouth is a very strong communication tool.

The availability of tillage tools and planters to farmers has been a useful incentive in promoting conservation tillage. The availability of equipment lets the farmer try this different method of farming without having the need to first make an investment in equipment he has never tried. This reduces the initial risk in making a change.

Soil erosion is becoming an important issue in many people's minds. In a survey of area farmers conducted two years ago, practically all realized the neccesity to use conservation tillage to reduce and minimize soil erosion. The realization that the soil is a valuable resource is an obstacle that is slowly being attained.

Future Plans

This coming year marks the final season for assistance from the U.S. EPA for conservation tillage. The District plans to continue its conservation tillage program for 1984, similar to past year's programs. It is anticipated that the amount of equipment available will remain the same. Farmers who have been in our program for several years will be phased out of the equipment availability, and encouraged to purchase their own.

Training sessions have proven to be very useful and will be continued. Corn hyrbid selection and no-till soybean and wheat production will receive more emphasis than in the past. One of our goals is to effectively produce all the major crop grown in Allen County with the no-till method.

Proper selection of herbicides is very critical, but as we gain experience this is becoming less of a problem. We may not test herbicides as extensively as in the past, but will continue to work towards management expertise in this area. Several new herbicides are coming on the market and we will continue some no-till testing to see how they fit into no-till crop production.

Although 1984 will be the final year of our expanded conservation tillage project with the help from the U.S. EPA, the District will continue to encourage the application of conservation tillage on the farm. Some equipment will be available for demonstration plots, thereafter. Technical and educational programs will also be emphasized.

It is the hope of the District and U.S. Environmental Protection Agency that after several years of promoting conservation tillage in the area, it will be a common and accepted practice among county farmers. However, we don't expect to get this job done overnight. Many years of effort will be needed.

ALLEN SOIL & WATER CONSERVATION DISTRICT
WATER QUALITY DEMONSTRATION PROJECT

GRANT PERIOD JULY 1980 - SEPTEMBER 1984

Amount of EPA GRANT:	
Conservation Tillage Program	$364,884
Rural Sewage Program	132,000
	$496,884
Amount of Districts Matching Needed	
In-Kind Contribution - 25%	165,628
	$662,512

FISCAL YEAR 1983 - FINANCIAL STATEMENT

FY-83 Receipts	
1982 Carryover	$ 58,158
Drawn Against EPA Grant	123,364
	$181,522
FY-83 Expenses	
Salaries and Benefits	43,227
Office Supplies and Rent	5,520
Demonstration Plot Supplies and Parts	6,039
Tillage Equipment Rental	21,678
Tillage Equipment Purchases	32,327
Rural Sewage Program	60,339
Other	4,332
	$173,461
Balance - October 1, 1983	$ 8,061

THE 1983 GROWING SEASON

The 1983 growing season was one many of us will remember for a long time. Most of the County was plagued with a severe drought during the critical part of the growing season. This weather resulted in county average yields of corn being reduced to less than one-half of the normal and soybean yields reduced by one-third.

Table 2 shows rainfall records for 1983 from three reporting stations across Allen County. The rainfall for the entire year was very close to normal. However, for growing crops, rainfall must come during the critical growing season of the plant. This was not the case in 1983. Rainfall records show that the winter of 1983 was very dry. Rains did help replenish some soil moisture during April and May. Actually the rains even held up planting operations with most of the corn planted during the middle of May, with soybeans shortly afterwards. Some fields were planted slightly wet, but the crops emerged very well and showed lots of promise through the middle of June. The idea of another successful year was soon diminished as the rainfall all but ceased. Most areas of Allen County reported little or no rainfall for most of July and all of August, the most critical period for crop pollination and grain fill. Also corn and beans were severely stressed during the pollination period. It should be noted that a select few areas of the county did receive occasional rains and produced fair crops. Two areas noted were a streak north of Spencerville and another by Bluffton.

TABLE 2. 1983 ALLEN COUNTY RAINFALL
(Average of 3 locations)

	Jan-Mar	April	May	June	July	Aug.	Sept.	Oct-Dec.	Total
Rainfall	3.6	3.8	4.0	3.0	1.8	0.8	2.2	16.7	35.9
Normal	7.8	3.6	3.6	4.0	3.3	2.9	2.9	7.4	35.5
% of Normal	46%	106%	111%	75%	55%	28%	76%	226%	101%

Barren stalk counts at harvest showed that some fields had close to half of the standing population without any ears. The crop matured and the grain was nearly "dry" at harvest, but then the rains came. October and November experienced better than twice as much rainfall as normal. This resulted in some crops harvested wetter than desired and harvest had to be coordinated between the heavy rains.

Growing Degree Days affects soil warming, crop growth, and grain dry-down. The seasonal total from April 1 to November 1 was 69 degree days above normal. What this means is that it was slightly warmer than normal during this period. The crops had long matured and dried before a late killing frost did occur.

In summary, 1983 was a record setter and one of the droughtiest we've seen in many years. The weather for the past year is also important in comparing this year to prior year's data in this booklet. 1982 was a very good year with adequate rainfall and heat units. 1981 was wet with very poor planting conditions and late planted crops. 1980 was warm and wet with ideal planting and harvesting conditions, but hot and dry during pollination. 1979 was cool and wet with a late spring and late fall. 1978 had a cold and wet spring, but a hot and dry early summer. Corn was stressed in 1978 but a late frost and good harvesting conditions were beneficial.

SOIL EROSION AND WATER QUALITY

Conservation tillage does reduce soil erosion and the control of soil erosion leads to a reduction of sediment entering streams and the associated pollutants which are attached to sediment, including phosphorous and herbicides.

In Table 3 , the tons of soil saved under different conservation tillage treatments are compared to fall plowing. The table is based on the Universal Soil Loss Equation for the acres involved in the Districts conservation tillage program for 1982. It was determined that the soil loss for fall plowing a Blount soil of 2.5% slope and 250' length, 'typical' of Allen County, to be 5.4 tons/acre. As a result of the work done in the project this year nearly 15,000 tons of soil was prevented from being eroded. If all the acres in the conservation tillage program were fall plowed this year, the resulting erosion would have stripped 15 acres of all its topsoil to a depth of seven inches.

TABLE 3. TONS OF SOIL SAVED AS COMPARED TO FALL PLOWING

TREATMENT	SOIL SAVED PER ACRE	WITH DISTRICT EQUIPMENT ACRES	WITH DISTRICT EQUIPMENT TONS SAVED	WITH FARMERS EQUIPMENT ACRES	WITH FARMERS EQUIPMENT TONS SAVED	TOTAL TONS SAVED
No-Till	4.7 tons	1367	6,425	1339	6,293	12,718
Offset Disc	2.9	196	568	88	255	823
Coulter-Chisel	2.9	422	1,224	47	136	1,360

Erosion can be controlled by managing the previous crop's residues after harvest, over winter, and thru the time of planting. The amount of crop residue on the surface can be estimated from crop yields (Table 4) and reductions from tillage and decomposition estimated by using factors from Table 5.

TABLE 4. ESTIMATING QUANTITIES OF RESIDUE

CROP	RESIDUE PRODUCED PER BUSHELS OF GRAIN (LB.)	FACTOR TO CONVERT TO CORN EQUIVALENT
Corn	60	X1
Soybeans	50	X2
Wheat	100	X2

TABLE 5. RESIDUE REDUCTION FACTORS

Decomposition Loss Over Winter	25%
Offset Disc (Fall)	50%
Chisel Plow - Straight Shovels (Fall)	25%
Chisel Plow - Twisted Shovels (Fall)	50%
Tandem Disc (Spring)	30%
Field Cultivator (Spring)	30%
Coulter-Chisel (Fall)	50%

These factors can be used individually or in succession to reflect various combinations of tillage practices. These factors were used to develop the chart below.

The following definitions and assumptions were made:

1. Offset Disc is used in the Fall. Conditions permit amount of residue buried to be 50% or less.

2. Chisel Plow used in Fall. Conditions and type of tool limit amount of residue buried to be 25% or less. "Soil Saver" type chisels equipped with discs and twisted shovels may incorporate up to 50% of the crop residue.

3. Tandem disc is used in the Spring. Conditions and size of the disc permit amount of residue to be 30%.

4. Spring tillage for Fall offset disced or Fall chiseled fields is limited to two trips with a field cultivator or disc.

5. Previous crop residue in terms of corn equivalent:

Soybean Stubble:	40 bu. x 50 lb./bu. x 2=	4,000 lbs./ac.
Corn Stubble:	133 bu. x 60 lb./bu. x 1=	8,000 lbs./ac.
Wheat Stubble:	60 bu. x100 lb./bu. x 2=	12,000 lbs./ac.

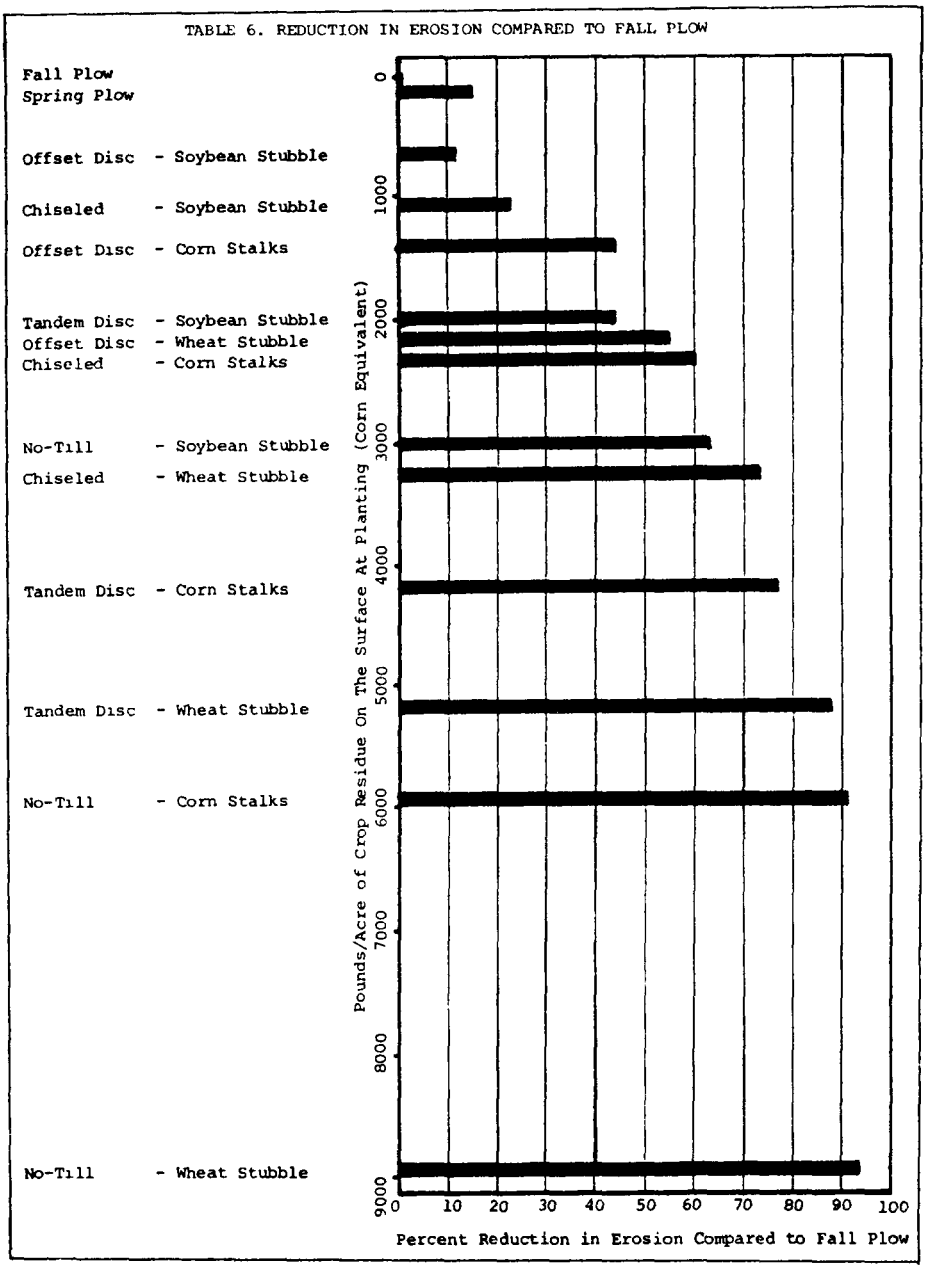


Table 6 does show the percent reduction of several conservation tillage practices as compared to fall plowing. One thing to note is that discing and chiseling soybean stubble does not significantly reduce soil erosoion and therefore is not a recommended conservation practice. This chart can be very useful in comparing the amount of reduction of soil erosion on your farm based upon the assumptions given.

ECONOMIC COMPARISON GUIDELINES

The costs of production were compared for each no-till plot as well as each tillage comparison plot. Participants reported the quantities of materials used such as fertilizer, herbicides, and insecticides, and listed the number and type of machine operations performed on the field. Table 7 and 8 list the unit prices and custom machine rate charges used to determine production costs. Corn value was determined by dividing wet weights per acre by 56 pounds per dry bushel and multiplying by $3.40/bushel less 2.5% price discount for each half point of moisture over 15.5%. (local elevator schedule) Soybeans were valued at a straight $8.50/bushel. Net return was then calculated as the difference between crop value and production costs. Prices used for materials were local elevator prices in season and rates for custom machine work was adopted from the 1983 Farm Custom Rates Bulletin published by the Cooperative Extension Service. A set charge of $40.00/acre for corn, $30.00/acre for soybeans, and $25.00/acre for wheat was used to include the cost of seed, lime, interest, and other incidental costs. No land charge was included in the calculations. Wheat was valued at a straight price of $3.25/bushel.

TABLE 7. MACHINE CUSTOM RATES

Operation	Implement	Custom Rate	Fuel Used (Gal/Acre)	Time Spent (Minute/Acre)
Primary Tillage	Plow	$10.00/Acre	1.85	19
	Offset Disc	8.50	1.15	15
	Chisel Plow	9.00	1.15	15
Secondary Tillage	Tandem Disc	6.50	.65	8
	Field Cultivator	7.00	.65	8
	Harrow	6.00	.45	6
	Cultimulcher	5.00	.45	6
	Roterra	5.00	.65	8
Planting	No-till Planter	11.00	.75	15
	(Double Planted)	16.00	1.50	30
	Conventional	8.00	.65	10
	(Double Planted)	11.75	1.30	20
	No-Till Drill	8.00	.75	12
	Conventional Drill	7.00	.65	8
Rotary hoeing		3.00	.30	6
Cultivate Row Crops		5.00	.45	11
Apply Anhydrous Ammonia		6.50		
Spray Liquids		3.50		
Spread Dry Fertilizer		3.50		
Inject 28%		5.00		
Aerial Applications		5.00		
Harvest Corn		20.00		
Harvest Soybeans		18.50		
Harvest Wheat		17.00		
Haul Grain (300 bu loads, 10 miles)		.08/bu.		

TABLE 8. UNIT PRICES OF MATERIALS

Fertilizer

Nitrogen Solution (28%)	$.245/lb. actual N
Anhydrous Ammonia (82%)	.15 /lb. actual N
Urea (46%)	.23 /lb. actual N
Ammonium Sulfate (21%)	.32 /lb. actual N
Ammonium Nitrate (33%)	.265/lb. actual N
0-44-0	.224/lb. actual P
0-0-60	.12 /lb. actual K
18-46-0	$241.66/Ton
10-34-0	234.00/Ton
Zinc Sulfate	625.83/Ton
Borate	768.33/Ton

Herbicides

Amiben Granules	$ .97/lb	Lorox	$ 5.55/lb
Amiben Liquid	16.44/gal	Lexone DF	17.77/lb
Atrazine 80W	1.92/lb	Lexone 4L	93.48/gal
Atrazine 4L	9.98/gal	Hoelon	50.43/gal
Atrazine 9-0	2.34/lb	Paraquat	44.03/gal
Banvel	50.95/gal	Poast	118.25/gal
Banvel II	30.56/gal	Princep 80W	3.16/lb
Basagran	81.00/gal	Princep 9-0	3.43/lb
Bicep	21.11/gal	Princep 4L	15.63/gal
Bladex 80W	3.39/lb	Prowl	32.12/gal
Bladex 4L	18.31/gal	Roundup	81.02/gal
Bladex Granules	.85/lb	Sencor 50W	11.55/lb
Blazer	73.64/gal	Sencor 4L	94.88/gal
Bronco	31.80/gal	Sencor DF	17.55/lb
Crop Oil	6.16/gal	Surflan WP	10.28/lb
Dual 8E	50.08/gal	Surflan 11G	52.00/gal
Dynap	10.90/gal	Sutan	23.54/gal
Lasso Granules	.79/lb	Treflan	32.97/gal
Lasso	20.51/gal	X-77 Surfactant	14.80/gal
Lorox	46.40/gal	2,4-D Amine	11.05/gal

Insecticides

Amaze	$ 2.01/lb	Lorsban	1.36/lb
Counter 15G	1.39/lb	Lorsban	33.93/gal
Dyfonate 20G	1.69/lb	Mocap	.83/lb
Dylox 80W	5.15/lb	Sevin 80W	3.27/lb
Furadan 10G	1.00/lb	Sevin XLR	20.12/gal
Furadan 4L	49.44/gal	Toxaphene	10.57/gal
Furadan 15G	1.47/lb	Thimet	1.41/lb
Isotox	9.18/lb		

CONSERVATION TILLAGE CORN PLOTS

GENERAL CONDITIONS

This field trial program was developed to help Allen County farmers evaluate the performance of conservation tillage on their farms. It was designed to help farmers collect data necessary to judge their success at useing conservation tillage methods.

The tillage field trials compared two or more of the following tillage practices: fall chisel plowing, fall discing, no-till planting, spring plowing (done after March 1) and fall plowing.

GUIDELINES

Procedures were followed to insure that tillage was the only variable Both agency personnel and farmers made observations and kept records throughout the growing season. Responsibility of each was as follows.

Farmers:

1. Used one or more conservation tillage systems adjacent to a check plot. Established plots wide enough to allow normal operations for tillage, planting and harvesting.
2. Selected trial locations that were reasonably similar in soils. fertility, drainage, and productivity.
3. Kept reliable records on rainfall, planting dates, tillage operations and fertilizer and pesticides used.
4. Harvested and weighed plots with the help from sponsors.

Agency Personnel:

1. Measured field area, population at emergence, barren stalks, and final harvest population.
2. Determined amount of surface residue retained and estimated annual soil erosion for each system.
3. Provided a weigh wagon, moisture tester, and scale operator to assist at harvest.
4. Calculated yields, expenses, and profitability of the various systems.

Miscellaneous Items:

1. All check and test strips had same prior year residue before primary tillage. No-till plantings were made directly into residue without seedbed preparation.
2. Corn hybrid and total N, P, & K were the same across all tillage plots.
3. Residual type herbicides and insecticides were the same across all plots. Contact type herbicides were used or omitted depending upon vegetation existing at planting time. Rates were adjusted according to residue.
4. Cultivators, rotary hoes, and/or post-emergent herbicides were used as necessary to prevent crusting and weed infestations.
5. Each strip was machine harvested for grain with a minimum of one pass across entire field.

CORN PLOTS PLANTED IN WHEAT STUBBLE

Norm Capp, Breese Road, Perry Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	N.K.Px-39	18,000	18.0%	35.0	$118.23	$63.99

Planted on June 1 with the White planter at a seed drop of 23,200. Sprayed with 1 qt. Paraquat plus Surfactant and 3.2 qt. Bicep with 25 gal. of 28% and 15 gal. of water as a carrier. Fertilization included 200# 0-0-60 broadcast in the spring 250# 18-46-0 in the row, and 268# 28% for a total of 120-115-120. 10# Furadan used for insect control. Soil type is Morley and Pewamo... Broadleaf control was good, grass control fair. Field suffered moderate damage from cutworm and armyworm. Barren stalk count was 35%.

Bob Ernest, Napoleon Rd., Jackson Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Offset Disc	Funks 4438	--	19.3%	41.1	$137.92	$ -32.75
2.	Coulter-Chisel	Funks 4438	--	19.0%	36.7	123.84	-49.82
3.	Fall Plow	Funks 4438	--	18.7	36.0	120.62	-53.98
4.	Spring Plow	Funks 4438	--	19.8	25.4	85.09	-92.27

1. Fall offset disc, Spring disc, field cultivate
2. Fall coulter-chisel, Spring disc, field cultivate, plant, rotary hoe
3. Fall plow, Spring disc, field cultivate, plant, rotary hoe
4. Spring plow, Spring disc twice, plant, cultivate

Plant all plots on May 21 with a seed drop of 24,000. Sprayed 2.0 qt. Lasso and 1.75 lb. Aatrex 9-0 with 20 gal. of water as a carrier. Fertilization included 250# of 21-0-0, 100# of 0-0-60, 10# of Borate, and 10# of zinc broadcast in Spring, 100# of 10-34-0 in the row, and 110# of 82-0-0 sidedressed for a total of 153-34-60. Soil types are Blount with Pewamo. . . . Weed control was good in all plots.

Dave Ernest, N. Phillips Road, Jackson Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-chisel	Crows HY 6438	--	23.7%	29.8	$98.18	$50.00
2.	Fall Plow	Crows HY 6438	--	23.2%	32.6	$107.70	$41.71

1. Fall coulter chisel, field cultivate twice, plant
2. Fall plow, field cultivate twice, plant

Planted on May 14 at a seed drop of 26,100. Sprayed with 2 qt. Lasso and 2# Atrazine with 20 gal. of water as a carrier. Fertilization included 200# 21-0-0 and 15# Zinc broadcast in spring and 110# Anhydrous sidedressed for a total of 132-0-0. Field was also spread with hog manure. Soil type is Morley with Blount... Broadleaf and grass control was good.

Dave Ernest, N. Phillips Road, Jackson Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Test plots (F)	--	20.2	49.4	$164.75	$13.03

Planted on May 13 with a John Deere Planter at a seed drop of 26,100. Sprayed with 1 qt. Paraquat, plus Surfactant. 1# Atrazine, 1# Princep, and 1.5 qt. Bladex with 20 gal. of water as a carrier. Fertilization included 200# 21-0-0, 100# 0-0-60, 10# Borate and 15# Zinc. Broadcast in the spring, 110# of Anhydrous, and 110# of 28%. For a total of 163-0-6-. Soil type is Blount with Morley... Broadleaf and grass control was excellent.

CORN PLOTS PLANTED IN WHEAT STUBBLE CONTINUED

Dave Ernest, State Route 81, Jackson Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Paraplow	Pioneer 3780	--	28.7	33.9	$109.27	$76.32
2.	Offset disc	Pioneer 3780	--	28.2	27.9	90.20	89.91

1. Fall paraplow, disc twice, plant
2. Fall offset disc, disc twice, plant

Planted on May 27 with a John Deere no-till planter at a seed drop of 24,000. Sprayed with 1.5# Atrazine and 1.5# Princep with 20 gal of water as a carrier. Also sprayed 2# Bladex and crop oil later in the spring. Fertilization included 200# 21-0-0 ,100# 18-46-0 and 250# 0-0-60 all broadcast in the spring, and 98# side-dressed for a total of 140-46-150. Soil type is Blount and Pewamo... Broadleaf and grass control is good. Paraplow plot was disced to smooth out the field.

LaMar Evans, Sandy Point Rd., Sugar Creek Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Leader 555	19,300	20.3%	67.0	$223.97	$ 22.66

Planted on May 27 with a seed drop of 27,100. Sprayed with 1.0 qt. Paraquat with 1.0 qt. Surfactant, 0.4 gal. Aatrex, and 0.36 gal. Dual 8E with 15 gal of 28% as a carrier. Fertilization included 50# of 18-46-0 and 150# of 0-0-60 broadcast, 190# of 82-0-0 applied preplant, 135# of 8-32-16 in the row, and 160# of 28-0-0 sprayed with chemicals for a total of 221-66-102. 6# of Counter 15G applied for insect control. Seed corn beetle damaged 8% of seed. Percent barren stalk count was 7%.

Melvin Gable, Kiggins Rd., Marion Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Fall Plow	Crows SL-35	22.331	22.2%	89.2	$329.36	$109.07
2.	Offset Disc	Crows SL-35	19,998	21.8%	65.6	241.40	17.58

1. Fall plow, field cultivate twice, plant, cultivate twice
2. Fall offset disc, field cultivate three times, plant, cultivate once

Planted on May 21 with a seed drop of 24,000. Sprayed with 2# Bladex plus 2# Aatrex with 12 gal. of 28% as a weed and feed application. Field was also sprayed later with an over the top application of .25 pt. of Banvel and .5 pt. 2-4D as clean up. Fertilization include 280#, 18-46-60 broadcast in the Spring and worked in 200# 10-34-0 as starter at planting and 12 gal. (130#) of 28% sprayed with herbicides. For a total of 200-196-168. Soil type is Blount. . . . Weed control was rated good for both broadleaves and grasses.

Greg Herron, Thayer Rd., Monroe Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Hybrid Plots	20,660	21.2%	26.9	$ 89.59	$ -76.11

Planted on May 13 with a White planter at a seed drop of 25,800. Sprayed with 1.0 qt. Paraquat plus Surfactant, 0.8 gal. Bicep, and 1.0 pt. Banvel with 10 gal of 28% as a carrier Fertilization included 100# of 0-0-60 broadcast prior to planting, 120# of 11-53-0 in the row, 100# of 28-0-0 sprayed with chemicals, and 100# of 82-0-0 sidedressed for a total of 123-64-60, 0.75 pt. Toxaphene 6EC sprayed with chemicals for insect control. Soil type is Blount with Pewamo. . . . Weed control was excellent except for Quackgrass.

Harold Hutchinson, Sugar Creek Rd., Jackson Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Fall Plow	Sohigro 48	--	24.3%	53.6	$176.41	$ +0.55
2.	Inject-Chisel	Sohigro 48	--	20.5%	45.7	153.28	-20.72
3.	Offset Disc	Sohigro 48	--	22.0%	44.3	147.57	-25.85
4.	Coulter Chisel	Sohigro 48	--	21.0%	47.1	157.67	-16.49
5.	No-Till	Sohigro 48	--	25.3%	38.8	127.31	-37.28

1. Fall plow, field cultivated twice, plant
2. Injected liquid hog manure in fall, field cultivate twice, plant
3. Fall offset disc, field cultivate twice, plant
4. Fall coulter chisel, field cultivate twice, plant
5. No-till planted with White no-till planter.

Planted on May 18 in 30" rows with a seed drop of 25,800. Sprayed with 2.0 lb. of Aatrex 9-0 with 20 gal. of water as a carrier. No-till also received 1.0 qt. Paraquat with Surfactant. Fertilizer included 320# of 9-23-30 in the row and 130# of 82-0-0 sidedressed for a total of 136-73-96. 10# of Counter 15G applied for insect control. Soil type is Blount and Morley. . . . Broadleaf control was good, grass control was excellent.

Greg Knotts, Slabtown Rd., Bath Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Cargill 921	20,000	18.0%	50.0	$168.66	$-23.19

Planted on April 27 with the Kinze planter at a seed drop of 24,600. Sprayed with 1 qt. Paraquat plus Surfactant, 1 pt. Banvel, and 3.2 qt. Bicep with 20 gal of 28% as a carrier. Four weeks after planting sprayed with an additional 1 pt. Banvel. Fertilization included 20# 18-46-0 and 80# 0-0-60 broadcast in the Spring, 125# 8-33-17 in the row, 214# 28% with the herbicide and 342# of 28% injected (sidedressed) for a total of 172-50-69. Soil type is Blount with Morley. . . . Broadleaf and grass control was good. Barren stalk count was 15%. This field had some armyworm and slug damage.

Luke Lugibihl, Augsburger Rd., Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Hybrid Plots	25,600	22.5%	70.4	$234.16	$ 41.12

Planted on April 26 with John Deere planter with a seed drop of 27,000. Sprayed with 1.0 qt. Paraquat with Surfactant, 1.0 lb. of Princep 80W, 1.0 qt. of Aatrex 4L, 2.0 qt. of Bladex 4L, and 0.5 pt. of Banvel with 30 gal. of water as a carrier. Fertilizer included 350# of 3-10-30 sprayed preplant, 120# of 10-34-0 in the row, and 220# of 82-0-0 sidedressed for a total of 203-76-105. 1 pt. of Furadan 4L used for insect control. . . . Weed control was good. For more information on each hybrid, see the hybrid plot section later in this booklet.

Bill Meyers, Stewart Rd., Bath Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Asgrow 610	20,700	17.0%	30.0	$101.41	$-50.38

Planted on May 12 with the Kinze planter at a seed drop of 27,000. Sprayed with 1 qt. Paraquat plus Surfactant, and 1 pt. Banvel with 20 gal. of 28% as a carrier. Fertilization included 77# 18-46-0 and 116# 00-0-60 broadcast in the Spring, 150# 11-53-0 in the row and 212# of 28% for a total analysis of 90-115-70. Soil type is Morley. . . . Broadleaf and grass control was fair. Percent barren stalks was 12%.

Charles Miller, Ada Road, Jackson Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Pioneer 3518	21,300	28.0%	40.7	$124.04	$-70.01

Planted on May 20 with the White planter at a seed drop of 24,000. Sprayed with 1 qt of Paraquat with surfactant, 1.0 lb Atrazine 80W, 2.0 qt Bladex 4L, and 2.2 lb Princep 80W with 20 gal of water as a carrier. Fertilization included 200# of 9-23-30 broadcast in the fall, 280# of 9-23-30 in the row, and 190# of Anhydrous ammonia sidedressed for a total of 199-110-144. Soil type is Morley. . . Broadleaf and grass control was good. Armyworms did damage some of the crop in the early season.

Harold Pohlman, St. Mary's Rd., Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Plots E	27,200	18.3%	87.6	$294.13	$ 65.89
No-Till	Plots F	25,200	21.0%	87.6	293.13	64.63

Planted on May 12 with an A.C. planter at a seed drop of 24,000. Sprayed with 1 qt. Paraquat plus surfactant, 2# Princep, 3# Bladex, .8 pt. 2,4-D and .5 pt. Banvel with 21 gal. of 28% as a carrier applied one day before planting. Fertilization included 150# 0-0-60, 50# 0-46-0 and 100 # 21-0-0 broadcast in the Fall, 171# anhydrous with N-Serve in the Fall, 250# 13-32-18 in the row, and 220# of 28% for a total of 256-103-135. 8# Furadan 15G used for insect control. Soil type is Blount with Pewamo. . . . Broadleaf control excellent, grass control was good. Planter seemed to plant heavy on these plots.

Tom Schumacher, N. Phillips Rd., Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Funks 4323 & Dekalb TX1000	23,700	16.6%	79.8	$268.33	$ 65.55

Planted on May 14 with a John Deere planter at a seed drop of 26,200. Sprayed with 1 qt. Paraquat plus surfactant, 2.5 pt. Dual, and 2# Atrazine 9-0 with 50 gal. of water as a carrier. Fertilization included 200# 21-0-0 and 200# 0-0-60 broadcast in the Spring, 170# 8-38-18 in the row, and 145# Anhydrous sidedressed for a total of 175-64-150. 9# Counter used for insect control. Soil type is Blount and Pewamo. . . . Broadleaf control good, grass control was fair. Nutsedge was not controlled. There was some armyworm damage.

Glen Troyer, Grubb Road, Marion Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Crows 444	18,300	22.2%	43.1	$142.74	$-55.46

Planted on May 31 with the John Deere planter at a seed drop of 26,100. Sprayed with .5 pt Banvel and 1 pt 2,4D ahead of planting. Also sprayed with 1 qt Paraquat plus surfactant, 2.0 lb Princep, and 2.0 lb Atrazine with 22 gal of 18-18-0 as a carrier. Fertilization included 130# 21-0-0 and 285# 0-0-62 broadcast in the Spring; 188# 15-15-15 in the row; 236# 18-18-0 and 118# anhydrous sidedressed for a total of 195-71-205. Soil type is Pewamo, Blount and Hoytville. . . Broadleaf and grass control was considered good. Barren stalk count was 30%.

CORN PLOTS PLANTED IN WHEAT STUBBLE CONTINUED

Vance Weaver, Sugar Creek Rd., Bath Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Bayless 627	19,700	19.5%	40.4	$135.68	$-17.64

Planted on April 28 with an AC planter at a seed drop of 21,800. Sprayed with 1 pt. Banvel, 1.1# Princep 9-0, and 1.1# Atrazine 9-0 with 20 gal. of 28% as a carrier. Also sprayed an additional 1 pt. Banvel after corn was up. Fertilization included 85# 0-0-60 broadcast, 200# 6-24-24 in the row, 214# 28% with the herbicides and 321# 28% injected (sidedressed) for a total of 162-48-100. 8.7# Counter used for insect control. Soil type is Blount and Belmore. . . . Broadleaf and grass control excellent. Barren stalk count was 37%.

Ray Whetstone, State Route 501, Shawnee Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Bayless 637 &	--	24.1%	79.0	$259.60	$ 90.93
2.	Paraplow	Pioneer 3389 &	--	23.1%	77.1	254.40	75.99
3.	Offset Disc	Bayless 622 &	--	19.0%	71.0	239.30	61.39
1A.	No-Till	Pioneer 3307	--	20.6%	76.7	255.31	81.84
2A.	Paraplow		--	21.0%	80.3	269.38	85.55
3A.	Offset Disc		--	19.8%	86.5	289.24	101.68

1. No-till planted with a John Deere planter
2. Fall Paraplow, planted no-till
3. Fall offset disc, disc, field cultivate, plant

Planted on May 11 with a seed drop of 26,100. Sprayed with 2 qt. Lasso, 2# Atrazine and .5 pt. Banvel. No-till and paraplow also received 1.5 pt. Paraquat plus Surfactant. Plot above with letter "A" afterwards received an additional 2.5# Atrazine applied in the Fall. Fertilization included 134# 0-0-60 in the Fall, 65# 8-8-8 sidedressed in the row with the planter, 140# 22-10-0 in near the seed at planting and 133# Anhydrous sidedressed for a total of 144-19-85. 9# Lorsban used for insect control. Soil type is Haney, Digby, Millgrove and Pewamo. . . . Broadleaf and grass control was basically good in all plots. The Fall applied Atrazine was effective in the Paraplow plot only, where no noticeable weeds were present at planting time. Paraquat may have been omitted from this plot. Hybrids for each plot was two rows harvested of each of the four hybrids listed above. Variation of soil type may have a slight influence on crop yields.

CORN PLOTS PLANTED IN CORN STALKS

Apollo FFA, Shawnee Rd., Shawnee Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Hybrid Plots	20,000	27.5%	43.6	$141.96	$-53.18
2.	Coulter-Chisel	Hybrid Plots	18,750	24.0%	25.4	83.90	117.03
3.	Tandem Disc	Hybrid Plots	19,250	25.6%	40.6	132.54	-60.82

1. No-till planted with a John Deere planter.
2. Fall coulter-chisel, disc twice, plant.
3. Spring tandem disc twice,

Planted on May 28 with a seed drop of 26,000. Sprayed with 1.5# Princep 80W and 2.5 qts. Lasso with 34 gal. of 28% as a carrier. No-till also received 1 qt. Paraquat with Surfactant. Fertilization included 316# 19-19-19 broadcast in the Spring, 200# 15-15-15 in the row, and 358# of 28% for a total of 190-90-90. 8.3# Furadan 10G used for insect control. Soil type is Blount with Pewamo and Haney. . . . Broadleaf and grass control good on all plots. Percent barren stalks: No-till 28%, chisel 23% and disc 22%.

Don Davis, Boundary Rd., Union Township, Auglaize County

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Hybrid Plots	18,700	19.1%	38.5	$128.64	$ -7.26
2.	Offset Disc	NK PX9527	19,600	19.0%	24.2	81.59	-48.62
3.	Coulter-Chisel	NX PX9527	20,300	20.0%	20.7	69.53	-60.91

1. No-till planted with Allis Chalmers planter
2. Fall offset disc, field cultivate, plant
3. Fall coulter-chisel, field cultivate, plant

Planted May 21 with a seed drop of 25,800. Sprayed with 2# of Princep 80W and 1.5# of Aatrex 80W. The no-till plot also had 1 pt. of Paraquat plus Surfactant. With 20 gal of 28% as a carrier. Fertilization included 100# of 0-0-60 Spring broadcast, 90# of 9-18-9 in the row and 214# of 28-0-0. 8# of Furadan was used for insect control. Soil type is Blount. . . . Broadleaf weed control was good, grass control was fair. No-till had Foxtail, Nutsedge, Velvetleaf and Smartweed. The other two plots were cleaner. Percent barren stalks across all plots were about the same as 30%.

Jeff Hager, S.R. 117, Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Cargill 921	25,000	26.2%	40.0	$130.53	$-155.96

Planted on May 18 with the John Deere planter at a seed drop of 26,100. Sprayed with 1.0 qt Paraquat with Surfactant, 2.7 pt. Dual, 2.6 lb. of Aatrex 9-0 with 56 gal. of 28% as a carrier. Fertilization included 80 lb. of 18-46-0 and 500# of 0-0-60 broadcast, 407# of 8-32-16 in the row, 600# of 28-0-0 with chemicals, and 140# of 82-0-0 sidedressed for a total of 330-174-365. 10.7 lb. of Furadan was used for insect control. Soil type is Shoal and Morley. . . . Broadleaf control was good, grass control was fair. This field looked good all year. Soils and fertility was ideal for a high yield but moisture just wasn't there.

Robert Hasson, Defiance Trail Rd., Amanda Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	Migro SPX49	24,600	30.0%	22.0	$ 70.89	$-117.69
2.	Fall Plow	Migro SPX49	23,600	30.0%	21.0	67.68	-121.80

1. Fall coulter-chisel, field cultivate, plant
2. Fall plow, field cultivate, plant

Planted on May 13 with International air planter with a seed drop of 28,000. Sprayed with 1.5 lb. of Aatrex 9-0, 2.0 qt. of Lasso with 20 gal. of water as a carrier. Fertilization included 55# of 18-46-0 and 270# of 0-0-60 broadcast, 200# of 8-25-3 in the row and 177 lb. of 82-0-0 sidedress for a total of 171-75-168, 12# of Furadan used for insect control. Soil type is Blount with Morley and Pewamo. . . . Weed control was good. Percent barren stalk count was 45% on both fields.

Kenneth Miller, Zion Church Road, Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Migro HP470	22,300	17.6%	45.7	$153.27	$-83.12

Planted on May 14 with a John Deere planter at a seed drop of 26,100. Sprayed with 1.25 pt Paraquat plus surfactant, 3.0 lb Bladex, 1.5 lb Princep, .75 pt 2,4-D, and .33 pt Banvel with 46 gal of 28% as a carrier. Fertilization included 367# 4-10-10 broadcast in the fall, 157# 10-34-0 in the row, 210# anhydrous sidedressed, and 496# of 28% for a total of 342-90-147. 10# Furadan used for insect control. Soil type is Blount with Pewamo. . . Broadleaf and grass control was good. Percent barren stalks was 20%.

Norman Heidlebaugh, State Route 66, Amanda Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	PAG 351	25,000	21.0%	75.0	$251.88	$70.35
2.	Fall Plow	PAG 351	21,300	19.0%	74.5	250.91	68.61

1. Fall coulter-chisel, tandem disc, field cultivate, plant
2. Fall plow, tandem disc, field cultivate, plant

Planted on May 12 with a seed drop of 26,400. Sprayed with .9 lb. Aatrex 9-0 and 2 lb. Princep with water as carrier. Also sprayed with .5 pt. 2-4D and .5 pt. Banvel for clean up with water as a carrier. Fertilization included 200# 8-25-3 as a starter in the row and 225# 82% applied as sidedress for a total of 201-50-6. Insecticide applied was Lorsban 1 qt. per acre. Soil type is Blount. . . . Both broadleaf and grass control was good. Barren stalk count was 7% on plow plot and 3% on the chisel plot.

Meadowbrook Farms, Hanthorn Rd., Perry Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	N.K. 9527	22,750	28.0%	43.3	$140.97	$-59.33
2.	Paraplow	N.K. 9527	20,750	31.8%	47.7	151.67	-49.28
3.	Coulter Chisel	N.K. 9527	21,000	27.4%	49.8	162.12	-54.75

1. No-till planted with a Kinze planter
2. Paraplow, planted no-till with a Kinze planter
3. Fall coulter-chisel, field cultivate (soil finisher), plant

Planted on April 26 at a seed drop of 29,950. Sprayed with .8 gal. Bicep with 20 gal. of 28% as a carrier. Fertilization included 300# 6-15-40 fall broadcast, 150# 8-32-16 in the row, 150# 82% sidedressed and 60# of 28% for a total of 236-93-144. 8.6# Furadan 15G used for insect control. Soil type is Blount. . . . Broadleaf and grass control was good. Barren stalk counts are: no-till 23% Paraplow 35%, and chisel 10%.

Vernon Neff, Wapak Rd., Shawnee Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1a.	Coulter-Chisel	Bayless 637	20,500	25.3%	51.5	$169.07	$-17.52
1b.	Coulter-Chisel	Bayless 7451	--	15.2%	61.4	208.08	21.25
2a.	Offset Disc	Bayless 637	17,750	26.0%	30.4	99.76	-84.45
2b.	Offset Disc	Bayless 7451	--	20.6%	36.6	121.88	-62.67
3a.	Fall Plow	Bayless 637	20,750	22.0%	66.7	222.02	33.31
3b.	Fall Plow	Bayless 7451	--	16.7%	65.7	221.11	32.86

1. Fall coulter-chisel, disc, field cultivate, plant
2. Fall offset disc, disc, field cultivate, plant, rotary hoe
3. Fall plow, field cultivate, plant

Planted on April 26 in 36" rows at a seed drop of 23,300. Sprayed with 1 pt. Dual and 2# Atrazine with 20 gal. of water as a carrier. Fertilization included 300# 0-0-60 broadcast in the Fall, 100# 18-46-0 in the row, and 140# anhydrous sidedressed for a total of 132-46-180. 8# Lorsban used for insect control. Soil type is Blount and Sloan. . . . Broadleaf and grass control was good on all three plots. This is the third year of continous corn in the identical tillage strips. Barren stalk counts are as follows: chisel - 12%, plow - 5%, and disc - 28%.

CORN PLOTS PLANTED IN CORN STALKS CONTINUED

Loren Peters, State Rd., Sugar Creek Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	Select Seed 4700	22,300	15.2%	33.8	$114.92	$-83.14
2.	Offset Disc	Select Seed 4700	21,300	18.2%	35.4	120.36	-77.33
3.	Fall Plow	Select Seed 4700	22,700	16.2%	36.8	125.12	-74.18

1. Fall coulter chisel, field cultivate, tandem disc, plant
2. Fall offset disc, field cultivate, tandem disc, plant
3. Fall plow, field cultivate, tandem disc, plant

Planted May 18 with a seed drop of 24,200. Sprayed with 2# Atrazine 80W plus 2# Princep 80W with water as a carrier. Fertilization included 245# 7-11-36 as plow down, 230# 82% before planting and 200# 10-34-0 in row for starter. For a total of 226-95-88. Insecticide used is Counter 15G at the rate of 10# per acre. Soil type is Blount. . . . Weed control was rated good for both broadleaves and grasses.

Bill Reese, Bussert Rd., Sugar Creek Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Parker 60A	25,000	21.5%	85.0	$283.96	$ 61.33

Planted on May 15 with an A.C. planter at a seed drop of 26,000. Sprayed with 1 qt. Paraquat plus surfactant, 1.2 qt. Dual, and 1.6 qt. Atrazine with 77 gal. of 28% as a carrier. Fertilization included 309# 0-0-62 broadcast in the Spring, 200# 16-41-6 in the row, and 823# of 28% for a total of 260-82-204. 13# furadan 10G used for insect control. . . . Broadleaf and grass control was good. Barren stalk count was 32%.

Gene Suter, Grismore Road, Richland Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Funks 4438 and	- -	17.8%	87.0	$291.49	$109.27
2.	Fall Plow	Migro 470	- -	18.1%	77.0	258.05	69.13

1. No-till planted with the White planter.
2. Fall plow, field cultivate, plant

Planted on May 10 at a seed drop of 26,500. Sprayed with 2 qt Lasso and 2.0# Atrazine with 20 gal of water as a carrier. No-till also received .5 pt Banvel post-emerge. Fertilization included 200# 6-20-40 broadcast in the fall, 100# 8-32-16 in the row, and 150# of anhydrous sidedressed for a total of 143-72-97. 10# Counter used for insect control. Soil type is Belmore. . . Broadleaf control was good; grass control was fair on the no-till, good on the plow plot. No-till was lightly disced before planting to cut up stalks. Corn borer did damage to some of the crop.

Vance Weaver, Sugar Creek Rd., Bath Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Bayless 627	18,000	19.5%	50.0	$168.00	$-27.78

Planted on April 28 with an AC planter at a seed drop of 21,800. Sprayed with 1 qt. Paraquat plus Surfactant, 1 qt. Dual and 3# Bladex with 20 gal. of 28% as a carrier. Sprayed 1 pt. Banvel after corn was up. Fertilization included 200# 6-24-24 in the row, 214# of 28% with the herbicides, and 321# of 28% injected (sidedressed) for a total of 162-48-48. 8.7# Counter used for insect control. Soil type is Sloan. . . . Broadleaf and grass control good to fair. Barren stalk count was 17%.

CORN PLOTS PLANTED IN BEAN STUBBLE

Ned Althaus, Searfoss Rd., Monroe Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Jacques JX 167	20,000	20.0%	55.5	$186.06	$ 36.76

Planted on April 26 with a seed drop of 27,900 with the White Planter. Sprayed with .4 gal. Bladex and 2.5 qt. Lasso with 20 gal. of water as a carrier. Fertilization included 250# 21-0-0 broadcast in the Spring, 100# 15-30-15 in the row and 92# 82% sidedressed for a total of 143-30-15. Soil type is Blount with Pewamo and Haskins. . . . Broadleaf and grass control good. Had to spot spray several thistle patches. Portions of this field was replanted on May 20 due to soil crusting and damage by the garden symphalan.

Lewis Bassett, Thayer Rd., Bath Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Robinson 3440	32,250	18.0	68.3	$230.23	$ 42.62
2.	Paraplow	Robinson 3440	31,500	17.6	71.5	240.06	42.21
3.	Chisel	Robinson 3440	27,250	18.2	70.7	237.25	37.67

1. No-till planted with John Deere planter without coulters
2. Fall paraplow then planted no-till in Spring
3. Fall chisel, field cultivate, planted, rotary hoed

Planted on April 30 with a seed drop of 26,100. Replanted all plots on May 21 with an additional 15,000 seeds. Sprayed with 1 qt. Dual and 1.5# Atrazine 9-0 with 20 gal. of water as a carrier, fertilizer included 200# 0-0-60 fall broadcast, 183# 82% knifed in preplant, 200# 10-34-0 in the row and 85% 82% sidedressed for a total of 240-68-120. Soil type is Pewamo with Blount. . . . Broadleaf and grass control fair. Field was replanted due to crusting and slow emergence. The actual replanting broke up the crust and many of the first planted seeds emerged. Barren stalk count on all plots was the same at 28%.

Dennis Bassett, Wolfe Rd., Bath Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	PAG 275	23,300	23.8%	32.0	$105.60	$-74.66
2.	Tandem Disc	Bayless 434M	21,300	21.4%	30.2	100.75	-70.15
3.	Fall Chisel	Bayless 434M	24,000	19.2%	38.8	129.92	-49.98

1. No-till planted with John Deere planter without coulters
2. Spring tandem disc once, field cultivate once, plant
3. Fall chisel, spring tandem disc once, field cultivate once, plant

Planted on May 18 with a seed drop of 26,100. Sprayed no-till with 1.0 pt. Paraquat, 1.0 pt. Banvel, and 0.8 gal. Bicep with 20 gal. of water as a carrier. Chisel and Spring tandem disc plots receive 0.88 gal. Sutazine and 0.5 qt. Aatrex which was impregnated and spread with 375# of dry fertilizer and incorporated prior to planting. Fertilization for the no-till included 400# of 3-10-30 and 400# 28% injected following planting and 75# of 82-0-0 sidedressed for a total of 185-40-120. The chisel and tandem disc plots received 150# 18-46-0 and 150# of 0-0-60 and 75# of 46-0-0 spread and incorporated prior to planting and 190# of 82-0-0 sidedressed for a total of 217-69-60. Soil type is Blount with some Pewamo and Morley. . . . Weed control was good for all plots except some thistles. Soil in the no-till plot was heavily crusted at planting and remained hard and dry throughout the Spring and Summer.

Dennis Bassett, Stewart Road, Monroe Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Bayless 627	21,660	21.3%	75.4	$251.41	$81.41

Planted on April 27 with a John Deere planter without coulters at a seed drop of 26,100. Sprayed with 1 pt Banvel and o.8 gal Bicep with 20 gal of water as a carrier. Fertilization included 300# of 3-10-30 and 600# of 28-0-0 injected when corn was 4" tall for a total of 177-30-90. Soil type was Pewamo. . . Broadleaf and grass control were both excellent. Herbicides were sprayed when corn was up.

Richard Bowdle, Crabb Road, Perry Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Select Seed 4700	20,250	20.5%	35.0	$117.18	$90.40

Planted on May 10 with a John Deere Planter in 36" rows at a seed drop of 25,500. Sprayed with 2 qt Round-Up and 1 gal Bicep with 50 gal of water as a carrier. Fertilization included 150# 0-0-60 broadcast in the fall, 160# 18-46-0 in the row and 152# Anhydrous Sidedressed for a total of 154-74-90. 7# Counter for insect control. Soil type Morley, Blount and Pewamo... Broadleaf control was good, grass control was poor. Problem was that he wasn't able to get a good spray pattern with sprayer. Barren stalk count was 53%. Field needed rain.

Gerald Brooks, Tom Fett Road, Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1. No-till	Hybrid Group E	--	16.5%	122.2	$413.39	$247.51
2. No-till	Hybrid Group F	--	19.0%	137.4	$462.47	$294.99
3. No-till	SoHigro 48	--	19.3	137.9	$462.08	$294.52

All plots planted on April 23 with the White planter at a seed drop of 28,600. Sprayed with 2 qt. Lasso, 1# Princep, 1# Bladex and 1# Atrazine with 40 gal. water and 17 gal. of 28% as a carrier. Fertilization included 200# 6-24-24 in the row 146# Anhydrous sidedressed and 179# of 28% for a total of 182-48-48. Insect control was split in the planter with either 5# counter or 5# Amaze. Soil type is Sloan and Digby... Broadleaf control was good, grass control excellent. By usual checks only, no notable difference was seen between the counter or Amaze stripe. Rootworm control was good. Slugs did damage part of the field. For additional information on the Hybrid Groups see the Hybrid section later in the booklet.

Richard Foust, Dutch Hollow Road, American Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Cargill 921	25,000	18.2%	49.9	$162.17	$-36.44

Planted on May 12 with the John Deere planter with a seed drop of 26,100. Sprayed with 1.75 lb Aatrex 9-0, 2.75 lb Bladex 80W, 1.0 qt Paraquat with surfactant with 35 gal of 28% as a carrier. Fertilizer included 225# of 0-0-62 broadcast, 160# of 18-46-0 in the row, 375# of 28% sprayed with chemicals, and 115# of 82% sidedressed for a total of 228-74-140. Soil type is Blount with Pewamo. . . Weed control was good. Percent of barren stalks was 25%. Crop was planted in oats stubble.

Dean Holdgreve, Southworth Rd., Marion Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Bailey 638	--	26.8%	77.0	$250.86	$ 41.10
No-Till	Cargill 921	--	26.8%	71.5	233.06	23.80

Planted on May 13 with a seed drop of 24,200 with John Deere planter. Sprayed with 1.1 qt. Dual; 2 qt. Bladex 4L, 0.67 lb. Aatrex 80W, and 1 pt. 2,4-D with 21 gal of 28% as a carrier. Fertilization included 200# of 0-0-62 fall broadcast, 180# of 82-0-0 fall applied, 220# of 10-34-0 in the row, and 60# of 28-0-0 sprayed premerge for a total of 233-75-124. 10.3 lb. of Counter used for insect control.

Ron Lloyd, Lloyd Rd., Sugar Creek Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Super Crost 2350	--	16.0%	109.0	$364.23	$191.90
2.	Coulter Chisel	Super Crost 2350	--	16.0%	119.0	403.31	212.84

1. No-till planted with the White planter
2. Fall coulter-chisel, field cultivate, plant

Planted May 13 with a seed drop of 26,000. Sprayed with 1.5 qt. Dual and 2 lb. Atrazine 80W with water as a carrier for the No-Till. With 1.5 qt. Dual and .5 pt. Banvel with water as a carrier for the Coulter Chisel plot. Fertilization included 200# 82% actual N applied in the fall with N-Serve, 200# 0-0-60 broadcast in the fall, and 130# 15-40-5 applied in the row as a starter fertilizer for a total of 220-52-127. Soil type is Belmore. . . . Weed control was good for both broadleafs and grasses.

John Marshall, Cool Rd., Monroe Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Robinson 3122	17,300	17.0%	67.0	$222.78	$ 20.43

Planted on May 15 with the White planter at a seed drop of 24,100. Sprayed with 1.1 pt. Paraquat plus Surfactant, 3.35 qt. Lasso and 2.25# Atrazine with 35 gal. of 28% as a carrier. Fertilization included 100# 9-23-70 and 357# 21-0-0 broadcast in the Spring, 180# 6-24-24 in the row and 375# 28% for a total of 200-66-73. 8# Counter used for insect control. Soil type is Haney and Millgrove. . . . Broadleaf and grass control was good. Field had damage from corn borer and armyworm.

Dave Moser, Putman County Line Road, Richland Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Sohigro 48	25,700	19.7%	85.9	$287.34	$115.19
2.	Field Cultivate	"	"	20.8	83.2	277.81	102.46

1. No-till planted with the John Deere planter.
2. Spring field cultivate, plant, rotary hoe.

Planted on April 25 with a seed drop of 27,700. Sprayed no-till with 1 pt 2,4-D, 1 qt Atrazine 4L, 3 qt Bladex 4L with 1 pt crop oil and 20 gal of water as a carrier. Field cultivate plot sprayed with 1 qt Atrazine 4L and 2.5 qt Bladex with 20 gal of water as a carrier. Fertilization included 200# 0-0-60 and 250# 21-0-0 broadcast in the Spring, 156# 19-17-0 in the row, and 151# of anhydrous sidedressed for a total of 207-27-120. Soil type is Blount and Pewamo. . . Broadleaf and grass control was good. Banvel used to spot spray some thistles. There was some corn borer and flea beetle damage.

CORN PLOTS PLANTED IN BEAN STUBBLE CONTINUED

Charles Plikerd, Sunderland Road, Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Pioneer 3541 + Crows 3132	25,000	15.0%	58.0	$195.84	$25.16

Planted on May 13 with the John Deere planter at a seed drop of 24,200. Sprayed with 1.0 pt Paraquat plus surfactant, 1.5 lb Atrazine, and 1.5 lb Princep with 20 gal of 28% as a carrier. Fertilization included 200# 0-0-60 broadcast in the fall, 213# 8-32-16 in the row, 200# anhydrous sidedressed and 214# 28% for a total of 241-68-154. Soil type is Blount with Pewamo. . . Broadleaf and grass control was excellent. Barren stalk count was 22%.

Doug Post, Spencerville Rd., Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Cargill 921	24,000	23.9%	70.7	$233.54	$ 42.98

Planted on April 27 with the John Deere planter at a seed drop of 25,000. Sprayed with 1 qt. Paraquat plus surfactant, .5 pt. Banvel, 4.4# Atrazine 9-0, and 1 qt. Dual with 44.5 gal. of 28% as a carrier. Fertilization included 150# 0-0-60 broadcast in the Spring, 240# 8-32-16 in the row, and 476# of 28% for a total of 152-77-128. Soil type is Blount. . . . Broadleaf and grass control was good. Barren stalk count was 5%. A high rate of triazines was used to take care of the fields weed pressure. He will go to corn next year.

Spencerville FFA, Kolter Road, Spencer Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Asgrow & Super Crost	21,000	19.8%	51.6	$172.72	$29.41

Planted on May 13 with the White planter at a seed drop of 23,000. Sprayed with 1 pt Paraquat plus surfactant, 1 qt Dual, 1.5 lb Atrazine 80W, and .25 pt Banvel with 37 gal of 28% as a carrier. Fertilization included 160# of 15-15-15 in the row and 400# of 28% for a total of 136-24-24. Soil type is Blount and Pewamo. . .Broadleaf and grass control was good. Barren stalk count was 8%.

Rodney Stratton, Grismore Road, Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Bojac 432	24,300	28.3%	182.5	$537.08	$339.69

Planted on April 28 with the John Deere planter at a seed drop of 32,000. Sprayed with 1.0 pt Paraquat with surfactant, 2.0 lb Aatrex, 2.0 pt Dual with 20 gal of 28% as a carrier. Fertilization included 300# 0-0-60 broadcast in the fall, 150# 10-34-0 in the row, 214# 28% sprayed with herbicides, and 195# of 82-0-0 sidedressed for a total of 235-51-180. Soil type is Millgrove. . . Weed control was good. The ground was crusted before the corn emerged.

Bill Williams, Ridge Road, Sugar Creek Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	PAG 243	23,600	18.2%	36.3	$121.88	$-51.29

Planted May 17 with the White planter with a seed drop of 25,800. Sprayed with 1.8 lb Princep, 1.5 qt Aatrex 4L, and .5pt Banvel. Fertilizer included 382 lb 3-10-10 and 48 lb of 10-34-0 sprayed on top ahead of planting, 10 gal 28-0-0 sprayed with chemicals, and 155 lb 82-0-0 sidedressed for a total of 173-54-114. 8 lb Thimet used for insect control. Soil type is Blount and Morley. . . Weed control was good. Barren stock count was 40%.

CORN PLOTS PLANTED IN RYE COVER CROP

Brent Adams, Agerter Rd., Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	McKillip 15	21,700	28.5%	50.0	$162.53	$-21.44

Planted on April 25 at a seed drop of 23,200 with an Allis-Chalmers planter. Sprayed with 1 qt. Paraquat plus Surfactant, 2 qt. Bladex, 2 qt. Atrazine 4L with 20 gal. of 28% as a carrier. Also used 1 pt. Banvel as a post emerge. Fertilization included 150# 13-33-16 in the row, 183# of 82% sidedress and 261# of 28% for a total of 243-50-24. Insect control was .33 gal. of Sevin for armyworms. Soil type is Blout with Pewamo. . . . Broadleaf and grass control was good. Barren stalk count was 17%.

Mike Basinger, E. Lincoln Hwy., Monroe Township

	TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Pioneer 3747		16.5%	56.6	$191.62	$-17.05
2.	Chisel	Pioneer 3747		16.5%	57.0	192.96	-29.75

1. No-till planted with a John Deere planter.
2. Fall chisel, field cultivate, plant

Planted on April 27 with a seed drop of 27,500. Sprayed with 2.5# Atrazine with 30 gal. of 28% as a carrier. No-till also received 1 pt. Round-up but was resprayed with an additional 1.5# Atrazine. Fertilization included 250# 16-18-24 broadcast in the Spring, 180# 11-53-0 in the row, 85# of 82% sidedressed and 321# of 28% for a total 219-141-60. 10# Dyfonate for insect control. Soil type is Blount with Pewamo. . . . Broadleaf and grass control good. The cover crop of wheat in the no-till plot was not killed after the first spraying and needed respraying. Armyworm and cutworms were also present in the no-till plot. No-till did exceptionally well in comparison to chisel plot even with insect problems and lack of kill on the Wheat cover crop.

Bill Keller, Monfort Rd., Amanda Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	PAG 397 & 275	21,300	20.0%	54.0	$180.98	$-11.19

Planted on May 13, with the John Deere planter at a seed drop of 25,000. Sprayed with 1 qt. Paraquat plus Surfactant, 1.5# Princep 9-0, and 3.25# Bladex 80W with 20 gal. of water as a carrier. Fertilization included 300# 9-23-30 broadcast in the Fall, 225# 8-33-16 in the row, and 106# Anhydrous sidedressed for a total of 176-141-126. Soil type is Pewamo and Blount. . . . Broadleaf and grass control was fair. Percent barren stalks were 25%. Armyworms had been feeding on this field. This field was planted in a growing stand of wheat.

CORN PLOTS PLANTED IN MISCELLANEOUS COVERS

Richard Foust, Dutch Hollow Rd., American Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Cargill 921	22,600	17.0%	29.9%	$ 99.45	$-100.86

Planted on May 12 with the John Deere planter with a seed drop of 26,100. Sprayed 1.0 pt. of Banvel and 1.0 pt. of 2,4-D on May 14; sprayed 1.75# of Aatrex 9-0, 2.75# of Bladex 80W, 1.0 qt. of Paraquat with Surfactant with 30 gal. of 28% as a carrier. Fertilizer included 225# of 0-0-62 broadcast, 160# of 18-46-0 in the row, 375# of 28-0-0 sprayed with chemicals, and 115# of 82-0-0 sidedressed for a total of 228-74-140. Soil type is Blount with Pewamo. . . . Weed control was good. Percent barren stalks was 25%.

Jim Messinger, Rockport Rd., Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Funks G4323	--	14.9%	50.0	$168.64	$-23.94

Planted April 25 with the John Deere planter with a seed drop of 27,000. Sprayed with 1.5 qt. of Paraquat, 2.0 qt. of Lasso, 1.75 lb. of Aatrex with crop, and 30 gal. of water as a carrier. Fertilizer included 350 lb. of 3-10-10 Spring broadcast, 120 lb. of 10-34-0 in the row, and 210 lb. of 82-0-0 sidedressed for a total of 195-76-105. 10# of Furadan used for insect control. Soil type is Morley. . . . Weed control was good. Crop was planted in a pasture-sod field.

Joe Schmersal, Slabtown Rd., Bath Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Pioneer 3747	19,000	21.3%	18.8	$ 62.62	$-170.41

Planted on June 3 after a cutting of alfalfa hay, with a John Deere planter at a seed drop of 26,000. Sprayed with .88 qt. Paraquat plus surfactant, 1.33 qt. Dual, and 1 gal. Atrazine 4L with 20 gal. of 28% as a carrier. Also sprayed with 1 pt. Banvel and 1 pt. 2-4-D. Fertilization included 400# 9-23-30 broadcast in the Spring, 150# 6-20-6 in the row, 97# Anhydrous sidedressed , and 200# 28% for a total of 181-122-129. 10# Furadan 15G used for insect control. Soil type is Morley with Blount. . . . Broadleaf and grass control was good. Barren stalk count was 30%. Corn after Hay did very poorly this year due to the lack of rainfall after planting this as a double-crop. The corn just wasn't able to fully use the fertilizer available.

Russell Staley, Pevee Road, Jackson Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Cargill 921	24,600	22.6%	60.0	$198.14	$-2.72

Planted on May 18 with the Kinze planter at a seed drop of 23,300. Sprayed with 1 qt Paraquat plus surfactant, 2 qt Bladex 4L, and 1.5 qt Atrazine 4L with 40 gal of water as a carrier. Fertilization included 350# 9-23-30 broadcast in the Spring, 270# 9-23-30 in the row, and 185# of 82% sidedressed for a total of 208-142-186. Soil type is Blount with Pewamo. . . Boadleaf and grass control was excellent. Dandelions were not controlled. Armyworms did damage some of the crop. Crop was planted in a hay field.

Herb Stewart, N. Napolean Road, Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Cargill 921	- -	19.9%	71.7	$240.03	$26.85

Planted on May 13 with the White planter at a seed drop of 24,000. Sprayed with 1 pt Banvel and 1 qt 2,4D ahead of planting. Also sprayed 1 qt Paraquat plus surfactant, 1.5 qt Dual, and 2.33# Atrazine 9-0 with 40 gal. of water as a carrier. Fertilization included 221# 0-0-60 and 109# 11-53-0 broadcast in the Spring; 125# 18-46-0, 80# 0-0-60, and 6# zinc sulfate in the row; and 111# anhydrous sidedressed for a total of 126-116-181. 5.8# Counter was used for insect control. Soil type is Blount. . . Broadleaf and grass control was good. There was some Armyworm damage. Crop was planted in an alfalfa-sod field.

Ron Steiner, Tom Fett Road, Richland Township

TREATMENT	HYBRID	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Pioneer 3518	16,300	17.2%	77.0	$259.05	$126.82

Planted on April 27 with the White planter at a seed drop of 27,500. Sprayed with 1 qt Paraquat, 1.5 qt Atrazine 4L, 1 qt Dual, and 1 qt crop oil with 50 gal of water as a carrier. The field was also sprayed with 1 qt 2,4D ahead of planting. Fertilization included 115# 0-0-60 and 115# 0-46-0 broadcast in the Spring, 230# 15-15-15 in the row, and 180# anhydrous sidedressed for a total of 183-88-104. 9# Counter used for insect control. Also 1.5 qt toxaphene sprayed for armyworm control. Soil type is Morley. . . Broadleaf and grass control was rated fair to good. Field suffered numerous insect problems throughout the year but none were detrimental (armyworms, slugs, cutworms, and corn borers). Crop was planted in an alfalfa-sod field.

TABLE 9. COMPARISONS OF CORN PLOTS BY TILLAGE SYSTEMS

	Farm	Yield: No-till	Yield: Fall Plow	Yield: Spring Plow	Yield: Offset Disc	Yield: Coulter Chisel	Net Return: No-till	Net Return: Fall Plow	Net Return: Spring Plow	Net Return: Offset Disc	Net Return: Coulter Chisel
CORN RESIDUE	Apollo FFA	44			41	25	$-53			$-60	$-117
	D. Davis	39			24	21	- 7			-48	-60
	B. Hasson		21			22		-122			-118
	N. Heidelbaugh		75			75		79			81
	R. Lloyd	109				119	193				214
	Meadowbrook Farms	43				50	-59				-54
	" (Paraplow)	48					-49				
	V. Neff		66		37	61		33		-62	21
	L. Peters		37		35	34		-74		-77	-83
	G. Suter	87	77				109	69			
	Average	62	55	--	34	51	22	- 3	--	-62	-15
SOYBEAN RESIDUE	D. Bassett	32			30	38	-75			-70	-50
	L. Bassett	68				71	43				38
	" (Paraplow)	72					42				
	D. Moser	86				83	115				102
	Average	64	--	--	30	64	31	--	--	-70	30
WHEAT STUBBLE	B. Ernest		36	25	41	37		-54	-92	-33	-50
	D. Ernest (Paraplow)	34			28		-76			-90	
	D. Ernest		33			30		-41			-50
	M. Gable		89		66			109		18	
	H. Hutchinson	39	54		44	47	-37	1		-26	-16
	R. Whetstone	79			71		91			61	
	" (Paraplow)	77					76				
	Average	57	53	25	50	38	14	4	-92	-14	-39
CORN OVER CORN	M. Basinger	57				57	-17				-21
	Corn Plot Averages	61	54	25	42	51	20	0	-92	-39	-11
	Number of Observations	8/15	7/9	0/1	2/10	6/15	9/15	6/9	0/1	1/10	4/15
	Ranked First	53%	78%	0%	20%	40%	60%	67%	0%	10%	27%

TABLE 10. SIX YEAR COMPARISON OF CORN PLOTS BY TILLAGE SYSTEM

	Yield					Net Return				
	No-till	Fall Plow	Spring Plow	Offset Disc	Coulter-Chisel	No-till	Fall Plow	Spring Plow	Offset Disc	Coulter-Chisel
1983 Average	61 (15)	54 (9)	25 (1)	42 (10)	51 (15)	20 (15)	0 (9)	-92 (1)	-39 (10)	-11 (15)
1982 Average	140 (17)	142 (13)	139 (6)	139 (8)	144 (12)	38 (17)	33 (13)	44 (6)	21 (8)	37 (12)
1981 Average	105 (22)	128 (17)	128 (6)	118 (11)	126 (15)	3 (22)	58 (17)	61 (6)	29 (11)	59 (15)
1980 Average	120 (17)	148 (3)	127 (9)	122 (4)	114 (3)	166 (17)	210 (3)	171 (9)	92 (4)	142 (3)
1979 Average	127 (7)	112 (1)	122 (4)	116 (3)	131 (1)	67 (7)	-82 (1)	57 (4)	50 (3)	108 (1)
1978 Average	103 (8)	94 (5)	85 (3)	110 (6)	129 (1)	23 (8)	- 5 (5)	-15 (3)	33 (6)	26 (1)
Six Yr. Ave	109	113	104	108	116	53	36	38	31	60
Number of Observations Ranked First	31/86	25/48	12/29	14/42	25/47	33/86	23/48	9/29	14/42	22/47
	36%	52%	41%	33%	53%	38%	48%	31%	33%	47%

( ) Number in parenthesis indicates number of times tested.

TABLE 11. TIME & FUEL FOR TILLAGE SUMMARY

CORN

	No-Till		Plow		Disc		Chisel	
	Time (Min)	Fuel (Gal)	Time (Min)	Fuel (Gal)	Time (Min)	Fuel (Gal)	Time (Min)	Fuel (Gal)
Average	15	.8	43	3.6	39	3.0	40	3.0
Average Cost of Time and Fuel for Tillage and Planting	$2.71		$9.48		$8.28		$8.40	
Percent of No-Till's Cost	100%		350%		305%		310%	

Assume Fuel costs $1.20/gallon and labor is $7.00/hour

TABLE 12. 1983 NO-TILL CORN PLOTS WITHOUT COMPARISON

WHEAT STUBBLE

Farm	Yield	Net Return
N. Capps	35	$-64
D. Ernest (F)	49	19
L. Evans	67	23
G. Herron (F)	27	-76
G. Knotts	50	-23
L. Lugibihl (G)	70	41
B. Meyers	30	-50
C. Miller	41	-70
H. Pohlman (F)	88	65
T. Schumacher	80	66
G. Troyer	43	-55
V. Weaver	50	-28
Average	53	$-13

SOYBEAN STUBBLE

Farm	Yield	Net Return
N. Althaus	56	$37
D. Bassett	75	81
R. Bowdle	35	-90
G. Brooks (F)	137	295
R. Foust	48	-36
D. Holdgreve	77	41
J. Marshall	67	20
C. Plikerd	58	25
D. Post	71	43
Spencer. FFA	52	29
R. Stratton	183	340
B. Williams	36	-51
Average	75	$ 61

CORN STUBBLE

Farm	Yield	Net Return
D. Ernest	40	$-38
J. Hager	40	-156
K. Miller	46	-83
B. Reese	85	48
V. Weaver	40	-18
Average	50	$-49

HAY STUBBLE

Farm	Yield	Net Return
J. Messinger	50	$-21
R. Staley	60	-3
R. Steiner	77	127
H. Stewart	72	27
R. Foust	29	-101
J. Schmersal (dbl cp)	19	-170
Average	51	-24

COVER CROP

Farm	Yield	Net Return
B. Adams (rye)	50	-21
B. Keller (wheat)	54	-11
Average	52	$-16

Average No-till without Comparisons	59	$ 4
Average All No-till Plots	60	$ 8

TABLE 13. 1983 CORN TILLAGE PRODUCTION COST SUMMARY *

Treatment	Herbicide Cost	Fertilizer Cost	Tillage Cost	Other	Total	Bu/Ac	Cost Per Bu.
No-till	$23	$72	$ 0	$85	$180	61	2.95
Plow	16	66	24	85	190	51	3.72
Disc	15	67	21	80	184	42	4.38
Chisel	16	66	21	81	185	51	3.63

* Represents average cost of all plots reported.

TABLE 14. SIX YEAR AVERAGE NO-TILL YIELDS BY COVER

YEAR	NO-TILL CORN YIELDS - BU/AC. STALKS	WHEAT STUBBLE	BEAN STUBBLE	COVER CROP	HAY	WEIGHTED AVERAGE	COUNTY** AVERAGE
1983	56 (11)*	54 (16)	72 (16)	54 (3)	58 (5)	60	--
1982	125 (6)	136 (25)	143 (19)	131 (2)	139 (4)	137	128.7
1981	101 (7)	105 (19)	128 (5)	120 (6)	100 (5)	108	100.9
1980	109 (9)	122 (5)	127 (4)	149 (1)	132 (5)	126	123.5
1979	119 (9)	147 (1)	--	144 (1)	--	124	124.7
1978	105 (5)	116 (4)	--	141 (1)	--	113	100.1
Six Year Average	103	113	118	123	107	111	
Six Year Weighted Average	99	107	114	113	106	107	

*Number of Times Tested
** Ohio Crop Reporting Service Figures

TABLE 15. SUMMARY OF SIDE-BY-SIDE TILLAGE COMPARISON YIELDS **
(Corn in bushels per acre)

Treatments	vs No-till	vs Fall Plow	vs Spring Plow	vs Offset Disc
Coulter-Chisel	57/57	45/45	37/25*	38/36
Offset Disc	40/44	45/56	41/25*	
Spring Plow	---	25/36*		
Fall Plow	65/63*			

* Tested only once or twice; should not be considered a representative county sample.
**Represents average yields of all plots that contained in the same field the two systems shown.

CORN PLOT OBSERVATIONS

The 1983 corn plots were discouraging due to the severe conditions we experienced. Corn yields averaged close to half of what yields are for a normal year. Specific observations are made below:

I. CORN YIELD OBSERVATIONS:

Comparison by Tillage Treatments

1. Table 9 shows the average yield of all side by side comparisons. The more comparisons of the same tillage, the more accurate the figures become.

2. Based on a 5% error of significant difference (+3 bu.), there was quite a difference between tillage systems. No-till produced the highest average yield but was not always the highest yielding system in the side by side comparisons on specific farms.

3. Table 15 shows a summary of averages of side-by-side comparisons. All tests included were fairly close except the offset disc/plow comparisons. The plow averaged higher than the disc when these two were compared.

4. The 1983 bean stubble residue figures are high due to two locations which had exceptionally good yields due to occasional rains. This figure minus these two locations averages 60 bu/ac, which still exceeds the average of the other residue covers by a range of 2 - 6 bu/ac.

5. University research has shown that no-till will perform better in a crop rotation than with continuous corn. The results in Table support this idea. Corn after soybeans also shows a lot of promise.

6. Each of the past 5 years, no-till average yields have been equal to or better than the County averages based on data from the Ohio Crop Reporting Service. (Table 14)

Six Year Averages

1. Table 10 shows six years of yields according to tillage treatment. Over these six years of testing, the variations among the different treatments is slight.

2. These averages represent a large number of trials in each tillage test and we feel these figures are getting more reliable each year. These figures do all represent tillage comparison plots. However, each location did not have each treatment.

3. Coulter-chisel plots seem to be consistently high in yields over the six years.

Residue Cover

1. Table 14 shows the long term averages of no-till yields according to residue cover. Some of the residues have been tested more than others and this should be kept in mind when evaluating these figures. Figures in parenthesis indicate the number of tests.

2. Residue cover has a significant effect on yields. Stalk residue has been consistently lowest in yields while bean stubble has been the highest. Cover crop figures should not be weighted to heavily because only one trial was done in each of 1978, 1979, and 1980.

II. ECONOMIC DATA OBSERVATIONS (CORN):

Crop costs and returns were calculated for all comparison plots and are summarized in this section. It is important to remember that custom rate charges were used to assign costs to the farm operations that the farmer reported performing. The net returns and other dollar values are used only for comparison purposes within this booklet and do not represent actual cost's incurred or profit's received on the farm listed. Below are the observations we have made.

Comparison by Tillage Treatments

1. The net return per acre was very low in 1983 because of poor yields. Table 9 shows that no-till ranked similarly to the fall plow tests based on net return. The number of observations ranked first versus the number of times tested is very close for these two systems.

2. The six year averages of net returns did vary slightly. The six year average return for each system was: no-till at $53, fall plow at $36, spring plow at $38, offset disc at $31 and coulter-chisel at $60. (Table 10)

3. Based on economic net returns and number of times first, the coulter-chisel has shown the highest returns.

4. The effects of wide variations in crop prices and growing seasons can be seen in the differences in yearly returns.

5. The no-till plots look better in the cost/return comparisons than in the yield comparisons. This is due to lower production costs with the no-till system.

Production Costs

1. Table 13 shows a cost summary of each tillage treatment for herbicides, fertilization, tillage and miscellaneous expenses. The herbicide cost of no-till was about $6 more than the other treatments, but was still lower in the final production cost.

2. The cost per bushel of grain produced was the lowest in no-till and highest in the offset disc plots.

3. The cost of fuel and labor (Table 11) should be considered when comparing the overall dollar benefits of each treatment. Fuel and labor costs for the plow, disc, and chisel plots are three times greater than fuel and labor costs under the no-till system.

ALLEN COUNTY NO-TILL HYBRID TEST GUIDELINES

GENERAL CONDITIONS

This hybrid trial program was developed to help Allen County farmers evaluate the performance of selected corn hybrids when used in a no-till farming operation.

The hybrid trials consisted of 2 groups of 5 or 6 test hybrids plus the county tester.

Each participant furnished 150 pounds of a 110 to 115 day hybrid obtained from the same lot of seed. Seed sizes were recommended by company to fit IHC, C1-X or JD B-1 plate. Normally this was medium rounds.

Sponsors collected seed, divided it into equal lots, marked with code identification, and delivered to producers.

GUIDELINES

Procedures were followed to insure that variety was the only variable. Both agency personnel and farmers made observations and kept records throughout the growing season. Responsibility of each was as follows:

Farmer:

1. Provide 150 lbs. of a 110 - 115 day test hybrid.
2. Planted each test hybrid in adjacent strips using normal no-till practices.
3. Planted test hybrids on soils similar in fertility, drainage and productivity.
4. Harvested and weighed each test hybrid with help of sponsors.
5. Kept reliable records on rainfall, planting dates, fertilizer and pesticides used.

Agency Personnel:

1. Assised during planting in changing hybrids, emptying planter boxes and marking plots with stakes.
2. Measured field area, population at emergence, barren stalks, and final harvest population.
3. Determined amount of surface residue retained and estimated annual soil erosion losses.
4. Provided a weigh wagon, moisture tester, and scale operator to assist at harvest.
5. Calculated and published yields, expenses, and profitability of the various systems.

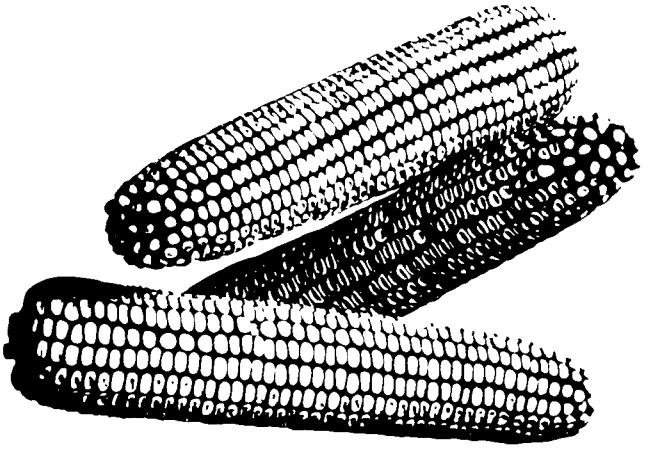
Miscellaneous Items:

1. All test hybrids were planted in same residue within each test.
2. Total N, P, & K were the same for all hybrids within each test.
3. Residual, contact herbicide, and soil insecticide was the same within each test.
4. Post-emergent or "clean-up" herbicides were used as necessary to control weeds.
5. Each hybrid was harvested for grain with minimum of one pass across the field.

TABLE 16. ADJUSTED 1983 NO-TILL HYBRID DATA *

HYBRID	MOISTURE PERCENT	MOISTURE RANK	YIELD BU/AC.	YIELD RANK	VALUE DOLLARS	VALUE RANK
Asgrow RX777	20.2	6	86.4	1	$288.31	1
Pioneer 3747	16.5	1	80.2	2	271.38	2
Pickering 533	18.7	4	79.2	3	265.23	3
Northrup King 74	22.0	9	79.0	4	263.19	4
Cargill 921	23.2	11	78.4	5	259.03	5
Migro HP470	18.0	3	76.6	8	258.36	6
Voris 2491	21.4	8	77.0	6	256.94	7
Bojac 432	22.4	10	76.9	7	255.50	8
Rupp XR1690	17.4	2	74.5	10	251.12	9
Bayless 627	20.7	7	75.2	9	250.53	10
Trojan T1000	18.9	5	72.0	11	241.88	11
AVERAGE	19.9		77.8		$260.13	

* NOTE: Above figures adjusted only to the two groups of County hybrid plots which were planted no-till.



1983 ALLEN COUNTY NO-TILL HYBRIDS - GROUP E

	POPULATION	MOISTURE	YIELD	VALUE
HAROLD POLHMAN				
1. Trojan T1000	27,700	19.2%	86.5 bu/ac.	$289.60
2. Pioneer 3747	26,300	15.0	96.4 bu/ac.	325.38
3. Rupp XR1690	28,000	16.0	83.6 bu/ac.	283.16
4. Voris 2491	26,700	19.2	86.5 bu/ac.	289.60
5. Bojac 432	26,000	20.4	85.9 bu/ac.	287.60
6. Cargill 921	28,700	20.2	86.6 bu/ac.	289.17
GERALD BROOKS				
1. Trojan T1000	24,300	--	--	--
2. Pioneer 3747	27,300	15.1	118.0 bu/ac.	395.42
3. Rupp XR1690	29,300	15.3	108.0 bu/ac.	365.50
4. Voris 2491	27,700	16.5	126.1 bu/ac.	426.46
5. Bojac 432	26,300	17.6	127.3 bu/ac.	427.06
6. Cargill 921	29,700	18.1	131.4 bu/ac.	440.38
LUKE LUGIBIHL				
1. Trojan T1000	26,700	19.2	69.5 bu/ac.	232.64
2. Pioneer 3747	25,000	16.7	85.0 bu/ac.	286.62
3. Rupp XR1690	25,700	18.2	72.5 bu/ac.	243.10
4. Voris 2491	28,000	24.8	68.0 bu/ac.	223.76
5. Bojac 432	25,000	27.5	64.9 bu/ac.	211.96
6. Cargill 921	26,300	28.8	62.7 bu/ac.	202.74
DON DAVIS				
1. Trojan T1000	19,000	17.4	21.7 bu/ac.	72.93
2. Pioneer 3747	20,000	16.2	34.6 bu/ac.	116.58
3. Rupp XR1690	24,000	17.4	46.2 bu/ac.	155.76
4. Voris 2491	21,300	21.4	40.3 bu/ac.	134.54
5. Bojac 432	21,700	20.4	42.2 bu/ac.	141.44
6. Cargill 921	24,700	21.6	46.1 bu/ac.	153.14
AVERAGE				
1. Trojan T1000	24,400	18.1	75.0 bu/ac.	$252.08
2. Pioneer 3747	24,700	15.8	83.5 bu/ac.	281.00
3. Rupp XR1690	26,800	16.7	77.6 bu/ac.	261.88
4. Voris 2491	25,900	20.5	80.2 bu/ac.	268.59
5. Bojac 432	24,800	21.5	80.1 bu/ac.	267.01
6. Cargill 921	27,400	22.2	81.7 bu/ac.	271.36

1983 ALLEN COUNTY NO-TILL HYBRIDS - GROUP F

	POPULATION	MOISTURE	YIELD	VALUE
HAROLD POHLMAN				
1. Asgrow 777	22,300	20.4%	88.8 bu./ac.	$297.36
2. Northrup King 74	25,000	22.2	87.7 bu./ac.	290.36
3. Bayless 627	23,300	24.0	83.0 bu./ac.	274.59
4. Rupp XR1690	27,300	20.1	86.4 bu./ac.	287.60
5. Migro HP470	27,000	18.6	91.5 bu./ac.	306.05
6. Pickering 533	26,700	20.6	87.9 bu./ac.	292.50
GERALD BROOKS				
1. Asgrow 777	24,700	20.7	137.6 bu./ac.	458.44
2. Northrup King 74	28,300	22.8	139.1 bu./ac.	460.40
3. Bayless 627	27,000	19.9	135.4 bu./ac.	453.70
4. Rupp XR1690	25,300	16.5	134.5 bu./ac.	455.26
5. Migro HP470	27,000	16.4	135.4 bu./ac.	457.95
6. Pickering 533	26,300	17.5	144.3 bu./ac.	486.75
DAVID ERNEST				
1. Asgrow 777	25,300	19.6	63.0 bu./ac.	210.50
2. Northrup King 74	23,000	21.8	52.8 bu./ac.	175.89
3. Bayless 627	21,700	20.7	48.1 bu./ac.	160.31
4. Rupp XR1690	23,700	18.2	41.2 bu./ac.	138.12
5. Migro HP470	25,000	20.7	42.2 bu./ac.	140.62
6. Pickering 533	24,700	--	--	--
GREG HERRON				
1. Asgrow 777	16,700	23.1	41.9 bu./ac.	138.30
2. Northrup King 74	21,000	24.6	23.2 bu./ac.	76.05
3. Bayless 627	23,000	21.8	21.8 bu./ac.	72.57
4. Rupp XR1690	25,000	17.5	23.6 bu./ac.	79.86
5. Migro HP470	23,700	19.5	24.6 bu./ac.	82.88
6. Pickering 533	18,300	20.4	26.3 bu./ac.	88.20
AVERAGE				
1. Asgrow 777	22,300	21.0	82.8 bu./ac.	276.15
2. Northrup King 74	24,300	22.9	75.7 bu./ac.	250.67
3. Bayless 627	23,800	21.6	72.1 bu./ac.	240.29
4. Rupp XR1690	25,300	18.1	71.4 bu./ac.	240.21
5. Migro HP470	25,700	18.8	73.4 bu./ac.	246.88
6. Pickering 533	24,000	19.5	75.9 bu./ac.	254.86

TABLE 17. NO-TILL HYBRID AVERAGE YIELDS * Tester

HYBRID	1983 Moist	1983 Yield	1982 Moist	1982 Yield	1981 Moist	1981 Yield	1980 Moist	1980 Yield	1979 Moist	1979 Yield
Pioneer 3747	16.5	80.2								
Rupp XR1690	17.4	74.5*	19.8	148.8*						
Migro HP470	18.0	76.6	22.9	162.0						
Pickering 533	18.7	79.2	22.8	166.6						
Trojan T1000	18.9	72.0	19.2	137.6						
Asgrow RX777	20.2	86.4	23.6	152.8						
Bayless SX627	20.7	75.2	22.8	149.2						
Voris 2491	21.4	77.0	21.3	150.2						
Northrup King 74	22.0	79.0	25.3	155.1					27.4	122.5
Bojac 432	22.4	76.9	21.2	154.3						
Cargill 921	23.2	78.4	21.3	153.8	30.0	140.4	25.0	134.2	24.8	140.7
Pioneer 3744			18.5	137.3						
Landmark 733			22.3	144.8						
PAG 397					25.6	121.3				
Gutwein 2610					25.6	119.0				
Northrup King 69A					27.1	126.0				
Migro 2018X					27.3	123.2	21.3	125.2		
Northrup King 39										
Super Crost 2790					29.7	107.6				
Pioneer 3529					30.3	130.0				
Bailey 333					30.8	137.8				
Bayless XS637					30.9	135.8				
Trojan 1058					32.5	121.0				
Landmark 747					34.4	129.4				
Rup XR1780					35.8	121.0*				
Pioneer 3780							20.3	125.4	19.8	117.6
Rupp XR1625							21.3	130.7*	21.9	116.3*
Pioneer 3541							23.5	131.9		
Northrup King 69							24.0	124.1		
Sohigro 57							24.8	140.9		
Dekalb XL72aa							25.6	126.8	26.8	124.9*
Trojan 115							25.7	137.6	27.1	130.2
Voris 2532							26.0	145.4	27.2	131.6
Walton 40							26.3	133.7		
Northrup King 49									21.2	111.5
Funks G4323									21.3	114.4
PAG 424									24.1	107.5
Robinson 3225									25.6	119.4
ACCO 4201									25.9	108.7
Averages	19.9	77.8	21.8	151.0	30.0	125.2	24.2	132.4	24.5	120.4

NO-TILL HYBRID TEST OBSERVATIONS

No-till hybrid plots were planted and yields taken from six farms throughout the county. The plots were basically planted in late April and early May. Further information on each plot is included in the paragraph section earlier in this booklet.

1. Table 16 shows the 1983 hybrids ranked according to moisture, yield and value. Most of the hybrids were ranked by net return in nearly the same order as when ranked by yield. Net return takes into account moisture and drying costs.

2. With the unusual weather we experienced, no strong conclusion should be made from this data. One item to point out is that possibly a hybrid that performed well in the plots this year might also do well in droughty field conditions such as a well drained upland soil. Additional years of testing should be done before such a claim can be justified.

3. Table 17 shows yields of all hybrids tested for the past five years. Tests were also conducted in 1978 and 1979 but these were omitted because of the addition in the market of newer improved hybrids.

4. Hybrid tests varied from year to year and are not adjusted between years. The same tester and many of the same hybrids were used in 1983 and 1982. The years 1981 and 1980 each had a different test and would make it difficult to compare these hybrids with the later year hybrids.

5. The same tester and many of the same hybrids were tested in 1982 and 1983. Adjusting these two years to a common tester resulted in two observations. First, the hybrids changed very little in order of yield or value from one year to the other. Second, the most significant change which occurred was the better performance of the full season upright leaf hybrids of Asgrow 777 and Northrup King 74. These had a much high value in 1983 due to good drydown conditions and moved up considerably in the rankings. This points out the importance of drydown and individual farm drying costs in hybrid selection.

6. It is commonly recognized that a good no-till hybrid must have good cold tolerance, good seedling vigor, and fast drydown. Hybrids that are good in conventional plots have usually done well in no-till. We have also noticed that in some situation the same hybrid planted in a no-till situation will have better standability than the conventional plot alongside it.

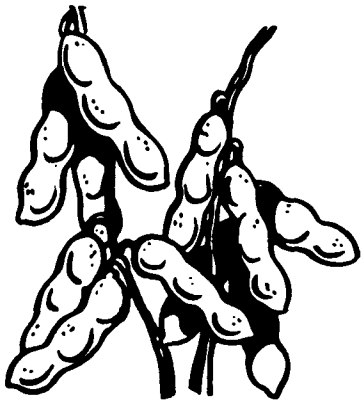
CONSERVATION TILLAGE SOYBEAN PLOTS

GENERAL CONDITIONS

The Soybean Field Trial Program is very similar to the corn program. Tillage field trials are encouraged between two or more of the following tillage practices; coulter-chisel plowing, offset discing, spring plowing, fall plowing and no-till.

GUIDELINES

Procedures were followed to insure that tillage was the only variable. Both agency personnel and the farmers made observations and kept records throughout the growing season. Responsibilities of each are listed in the corn plot section.



SOYBEAN PLOTS PLANTED IN CORN STALKS

David Augsburger, State Route 81, Jackson Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	N.K. 1492	151,000	11.1%	14.1	$119.85	$ 27.34

Planted on May 31 with the White 15" planter at a seed drop of 74#. Sprayed with .6 qt. Paraquat plus Surfactant, 1 qt. Dual and .5# Lexone with 20 gal. of water as a carrier. Soil type is Blount with Morley and Pewamo. . . . Broadleaf and grass control was good. Past crop was no-till corn.

Darrel Basinger, Putnam Rd., Richland Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Leader T-345	157,000	11.7%	39.4	$334.90	$239.33
2.	Offset Disc	Leader T-345	168,000	11.7%	37.8	321.30	217.41

1. No-till planted with a White 15" planter
2. Fall offset disc, disc and plant

Planted on May 12 with a seed drop of 90#. Sprayed with 3 qt. Lasso and 1# Sencor 50W with 20 gal. of water as a carrier. No-till also received 1 qt. Paraquat plus Surfactant. Soil type is EEL and Shoals. . . . Broadleaf and grass control was good. This field looked good all year.

Marvin Basinger, Zurflugh Rd., Richland Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	Asgrow 3127			33.8	$287.30	$157.53
2.	Fall Plow	Asgrow 3127			33.5	284.75	154.00

1. Fall coulter-chisel, spring disc, field cultivate, plant, cultivate
2. Fall coulter-chisel, spring disc, field cultivate, plant, cultivate

Planted May 28 in 30" rows with a seed drop of 60#/acre. Sprayed with 1.0 qt. Dual 8E and 0.75# Sencor 50W. Fertilizer included 70# of 11-53-0, 120# of 0-0-60 and 10# of manganese in the row for a total of 9-37-72. Soil type is Blount with Morley. . . . Weed control was good with some volunteer corn in the chisel plot.

Jim Bassett, Ada Rd., Bath Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Williams 79	116,000	14.0%	15.6	$132.60	$ 35.96
2.	Tandem Disc	Williams 79	128,000	13.5%	16.2	137.70	23.51

1. No-till planted with White 15" planter
2. Spring tandem disc, field cultivate twice, plant (15")

Planted on May 31 with a seed drop of 72#. Sprayed with 1 qt. Dual and .75# Sencor 50W with 20 gal. of water as a carrier. No-till also received 1 qt. Paraquat plus Surfactant. Soil type is Morley and Blount. . . . Broadleaf and grass control good. Root rot evaluation on no-till was excellent.

Eldon Beery, Cool Rd., Monroe Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Pella	168,000	10.5%	31.0	$263.50	$167.93

Planted on May 31 with the Kinze 15" planter at a seed drop of 74#. Sprayed with 1 qt. Paraquat plus surfactant, 1 pt. Lorox and 3 qt. Lasso with water as a carrier. Soil type is Blount. . . . Broadleaf and grass control was good. Some foxtail was present. Root Rot resistance was excellent.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

Bill Begg, Cool Rd., Richland Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Wayne	--	--	20.8	$176.80	$ 87.24
2.	Offset Disc	Wayne	--	--	19.2	163.20	60.51

1. No-till planted with White Planter in 15" rows
2. Fall offset disc, disc, field cultivate, plant in 30" rows

Planted on May 7 with a seed drop of 60-65#. Sprayed with 2 qt. Lasso and .5# Lexone with 20 gal. of water as a carrier. No-till also received 1 pt. Paraquat plus Surfactant. Soil type is Blount with Pewamo. . . . Broadleaf and grass control was good on both plots. Although row width were different, weed pressure was not a limiting factor in causing a different in yields.

Jim Biery, Kemp Rd., Amanda Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Williams 79	209,000	--	21.9	$186.15	$ 93.49
2.	Offset Disc	Williams 79	183,000	--	22.4	190.40	84.60

1. No-till planted with the Crustbuster Drill
2. Fall offset disc, disc, field cultivate, plant (10")

Planted on June 1 at a seed drop of 100#. Sprayed with 1 qt. Dual and .75# Sencor with 20 gal of water as a carrier. No-till also received 1 pt. Paraquat plus Surfactant. Soil type is Blount and Pewamo. . . . Broadleaf and grass control was good. Root rot resistance was excellent. Both plots had heavy damage from beanleaf beetle late in the season.

Richard Bixel, Tom Fett Road, Richland Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Pella	174,000	12.6	28.3	$240.55	$132.48
2.	Fall Plow	Pella	168,000	12.8	37.7	317.05	196.01

1. No-till planted with Kinze 15" planter.
2. Fall plow, field cultivate twice, drill in 7" rows.

Planted no-till on May 25 and 28 with a seed drop of 165,000. Fall plow planted on May 28 with a seed drop of 165,000. Sprayed no-till plot with 1.75 pt Lorox 1.0 qt Dual, 1.6 pt Paraquat plus Surfactant with 40 gal of water as carrier. Plowed plot and sprayed with 2.0 pt Lorox and 1.0 qt Dual with 20 gal of water as carrier. Fertilization was 100# of 0-0-62 broadcast in the fall. Soil type is Blount, Pewamo, and Morley... Weed control was good in both plots. No-till root rot rating is good.

Richard Bowdle, Crabb Road, Perry Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Voris 295	200,000	--	24.2	$205.70	$81.10

Planted on June 2 with the M & W Drill (10") at a seed drop of 75#. Sprayed with 2 qt. Roundup, 1 qt. Dual, 5# Lexone DF and 25 pt. Aquamate with 40 gal. of water as a carrier. Soil type is Millgrove with Pewamo... Broadleaf and grass control was good. Root rot rating is very good.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

Sam Blythe, S.R. 117, Spencer Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	Pioneer 3481	145,000	--	29.8	$253.30	$136.77
2.	Fall Plow	Pioneer 3481	134,000	--	31.8	270.30	136.50

1. Fall coulter-chisel, field cultivate, plant, cultivate twice
2. Fall plow, field cultivate, plant, cultivate twice

Planted on May 31 with International Early Rise planter at 8 beans/foot in 30" rows (140,000). Chisel plot sprayed with 1.0 qt. Treflan in 30 gal liquid fertilizer in fall prior to chiseling. Fall plow plot sprayed with 1 qt. Daul and 1.5 lb. Lorox in 10 gal. of water. Fertilization included 300# of 3-10-30 sprayed in fall and 200# of 4-10-10 in row at planting for a total of 17-50-50. Soil type is Blount. . . . Grass control was good. Broadleaf control in plow plot was good, and fair in the chisel plot. Velvet leaf and Lambsquarter present in chisel plot.

Richard Bowdle, Crabb Road, Perry Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter Chisel	Agripro 26	--	10.7%	22.5	$191.25	$70.31
2.	Offset Disc	Agripro 26	--	14.7%	25.1	$213.35	$92.70

1. Fall Coulter-chisel, disc twice, cultimulcher, drill
2. Fall offset disc, disc twice, cultimulcher, drill

Planted on May 31 with a John Deere Drill (7") at a seed drop of 75#. Sprayed with 1 qt. Dual, 5# Lexone and 1/8 pt. Aquamate with 20 gal. of water as a carrier. Also spot sprayed with 2oz. 2-4DB, 1.5 pt. Basagran and Aquamate. Soil type is Millgrove with Pewamo... Broadleaf control fair, grass control was good. Velvet leaf was present.

Gerald Brooks, Tom Fett Road, Richland Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till (10")	Sprite	200,000±	10.8	47.7	$405.45	$298.04
2.	No-till (15")	Sprite	200,000±	10.8	48.5	$412.25	$300.78
3.	Offset disc (10")	Sprite	200,000±	10.8	47.7	$405.45	$291.79
4.	Offset disc (15")	Sprite	200,000±	10.8	45.4	$385.90	$267.43

1. No-till planted with the M & W drill (10")
2. No-till planted with the White 15" planter
3. Fall offset disc field cultivate, drill (10")
4. Fall offset disc, field cultivate, plant (15")

Planted on May 12 with a seed drip of 100#. Sprayed with 1.5 pt. Paraquat Plus Surfactant, 2.25 pt. Dual and 1# Sencor 50W with water as a carrier. Soil type is Digby and Millgrove... This field was the location of the soybean herbicide plots. The no-till root rot rating is excellent. Broadleaf weed control fair, grass control was good.

Dick Conner, Sugar Creek Road, Bath Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Agripro 350	--	14.4	42.3	$359.55	$263.20

Planted on June 1 with the Kinze 15" planter at a seed drop of 74#. Sprayed with 1 qt. Paraquat plus Surfactant, 1 qt. Dual and .5# Sencor with water as a carrier Soil Type is Blount and Millgrove... Broadleaf and grass control was good. Variety rated as excellent resistance to root rot.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

Larry Creeger, Reppert Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Madison 2700		13.0%	9.0	$ 76.50	$-16.99

Planted on May 31 with the M&W drill in 10" rows at a seed drop of 93#. Sprayed with 1.0 qt. Roundup and 2.0 pt. Dual. With 20 gal. of water as a carrier. No fertilizer applied. Soil type is Blount with Morley. . . . Weed control was fair. Root rot rating was good.

Clifton Diller, Grismore Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Pella	192,900	13.5%	35.0	$297.50	$202.08

Planted on May 18 with White 15" planter with a seed drop of 90#. Sprayed with 1.0 pt. Paraquat, 1.0 qt. Dual, and 1.0 qt. Loroz with 80 gal. of water as a carrier. No fertilizer applied. Soil type is Millgrove and Digby. . . . Weed control was excellent. Root rot rating good.

Dave Ernest, N. Phillips Road, Jackson Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Asgrow 3127	--	14.4	30.6	$260.20	$162.42
2.	Offset Disc	Asgrow 3127	--	14.6	28.1	$238.85	$127.07

1. No-till planted with no-till drill
2. Fall offset disc, disc twice,drill

Planted on May 27 with a seed drop of 75# (190,000). Sprayed with 2 qt. Lasso and 1# Lexone with 20 gal. of water as a carrier. No-till also received 1 qt. Paraquat. Soil type is Blount... Broadleaf control good, grass control was excellent.

Bob Ernest, Napoleon Rd., Jackson Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Soil Saver	Asgrow 3127	--	10.0%	27.6	$234.60	$ 78.27
2.	Offset disc	Asgrow 3127	--	11.0%	22.4	190.40	34.99
3.	Fall Plow	Asgrow 3127	--	11.3%	24.4	207.40	50.07

1. Fall soil saver, Spring tandem disc twice, field cultivate, cultimulch, plant, rotary ho
2. Fall offset disc, Spring tandem disc twice, field cultivate, cultimulch, plant, rotary hoe
3. Fall plow, Spring tandem disc twice, field cultivate, cultimulch, plant, rotary hoe

Planted on June 2 with a seed drop of 80 lbs. in 15" rows (doubled back). Sprayed all plots with 2 qt. Lasso, 0.33 lb. Sencor DF, and 1.0 lb. Lorox 50W with 20 gal. of water as a carri Fertilizer included 250# of 0-0-60, 100# of 0-46-0, and 15# of zinc Spring broadcast for a total of 0-46-150. Soil type is Blount and Pewamo. . . . Weed control was good. Root rot rating was good to fair.

Dave Ernest, Sandusky Road, Jakcson Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Sprite	--	12.7%	36.2	$407.70	$211.07

Planted on May 27 with the M & W drill (10") at a seed drop of 120#. Sprayed with 1 qt. Paraquat, 1# Lexone, and 2 qt. Lasso with 20 gal. of water as a carrier. Soil type is Blount with Pewamo... Broadleaf and grass control was good. Some nutsedge was present.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

LaMar Evans, Bussert Rd., Sugar Creek Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Gutwein 327	--	14.2%	28.7%	$243.95	$130.55
No-Till	Bayless 123	--	15.4%	27.7%	235.45	122.05
No-Till	Leader 345	--	14.6%	28.9%	245.65	132.25
No-Till	Gutwein 331	--	12.4%	26.0%	221.00	107.60
No-Till	Pella	--	13.5%	25.7%	218.45	105.05
No-Till	Thompson 350	--	13.4%	31.1%	264.35	150.95
	Average:	--	--	28.0%	238.00	124.60

Planted on May 24 with the Crustbuster drill in 10" rows at a seeding rate of 67#/acre. Sprayed one week prior to planting with 1.0 qt. 2,4-D Ester. Sprayed with 1.0 qt. Paraquat, 1.0 qt. Surfactant and 0.3 gal Dual at planting with 40 gal of water as a carrier. Post sprayed with 0.75 qt. Basagram. Soil type is Colwood. . . . Weed control was good except for thistle. This field was Group N of the County Soybean Variety Plots.

Richard Foust, Dutch Hollow Rd., American Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Fall Plow	Callahan 7302R	187,300	13.0%	44.2	$375.70	$266.09
2.	Offset Disc	Callahan 7302R	178,600	13.0%	37.2	316.20	202.15

1. Fall plow, field cultivate, roterra and plant
2. Fall offset disc, tandem disc, field cultivate, roterra and plant

Planted on May 30 with a seed drop of 75# in 20" rows. Sprayed with 1.0 qt. Dual, 0.65 lb. Lexone DF with 23 gal. of water as a carrier. No fertilizer applied. Soil type is Sloan and Shoals. . . . Weed control was good .

Melvin Gable, Kiggins Rd., Marion Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Offset Disc	Thompson 350	162,624	10.6%	17.6	$149.60	$ 44.29
2.	Fall Plow	Thompson 350	165,528	10.7%	15.0	127.50	27.90

1. Offset Disc, field cultivate three times, plant, cultivate twice
2. Fall Plow, field cultivate twice, plant, cultivate twice

Planted on June 11 with John Deere planter in 30" rows with a seed drop of 65#. Banded on Lasso at the rate of 10 lbs. per acre at the time of planting. No fertilizer applied. Soil type is Blount. . . . Broadleaf and grass control throughout was rated good.

William Gibbs, Amherst Rd., Auglaize Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Pella	110,000	13.8%	18.0	$153.00	$ 25.62

Planted June 9 with the Kinze planter in 15" rows with a seed drop of 72 lbs. Sprayed with 2.0 qt. of Roundup, 0.5 lb. of Lexone DF, and 0.66 gal. of Lasso with 20 gal. of water as a carrier. No fertilizer applied. Soil type is Blount with Pewamo and Morley. . . . Weed control was good.

Robert Hasson, Defiance Trail Rd., Amanda Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Voris 285	235,200	13.0%	17.5	$148.75	$ 18.39

Planted on May 29, with the Crustbuster drill in 10" rows with seeding rate of 75#/acre. Sprayed with 1.0 qt. Paraquat with Surfactant, 2.5 pt. Dual, and 0.7 lbs. Lexone with 20 gal of water as a carrier. Fertilizer included 80# of 18-46-0 and 230# of 0-0-60 broadcast for a total of 14-37-138. Soil type is Blount with Morley. . . . Weed control was good. Root rot rating was fair. Bean leaf beetle damage was 15%.

Joe Hefner, S.R. 81, Jackson Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Vickery	180,400	13%	28.6	$243.10	$138.74

Planted on May 28 with the Kinze 15" planter with a seeding rate of 74 lb./acre. Sprayed with 1.0 pt. Paraquat with Surfactant, 1.0 pt. Lexone and 2.5 qt. Lasso with 20 gal. of 4-10 10 liquid fertilizer as a carrier. Fertilizer included 20 gal. of 4-10-10 for a total of 8-20-20. Soil type was Blount with Morley and Sloan. . . . Broadleaf weed control was fair grass control was good. Root rot rating was good. Resprayed field with 1 pt. Basagran, 2 oz. 2-4DB and 1 pt. crop oil, with very good results. The beans were slightly stunted though.

Mark Hershberger, Sandusky Rd., Bath Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Asgrow 3127	150,000	13.0%	22.6	$192.10	$100.29
2.	Fall Offset Disc	Asgrow 3127	188,700	13.0%	24.4	207.40	107.46
3.	Tandem Disc	Asgrow 3127	--	13.0%	21.8	185.30	87.57

1. No-till planted with Kinze planter
2. Fall offset disc, Spring tandem disc, roterra and plant
3. Spring tandem disc, roterra and plant

Planted on June 2 with a seed drop of 74#. Disc plots planted in 18" skip rows, no-till witl Kinze planter in 15" rows. No-till sprayed with 1.0 Paraquat with Surfactant, 2.5 qt. Lasso and 0.75 lb. Sencor 50W with 20 gal. of water as a carrier. Disc plots received 2.5 qt. Lasso and 0.75 lb. Sencor 50W incorporated with roterra at time of planting. No fertilizer applied. Soil type is Blount with Morley. Weed control was fair.

Harold Hutchinson, Sugar Creek Rd., Jackson Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Fall Plow	Vickery	--	--	34.4	$292.40	$170.79
2.	Offset Disc	Vickery	200,300	--	34.1	289.85	161.76
3.	Coulter Chisel	Vickery	--	--	31.5	267.75	149.37
4.	No-Till	Vickery	156.800	--	37.0	314.50	215.68

1. Fall plow, field cultivate, cultimulcher, drill
2. Fall disc, field cultivate, cultimulcher, drill
3. Fall coulter-chisel, field cultivate, cultimulcher, drill
4. No-till planted with M&W no-till drill

Planted on May 28 in 10" rows at a seeding rate of 210,000. Sprayed 1.0 lb. Lexone DF with 35 gal. of 3-10-10 as a carrier. No-till also received 1.0 pt. Paraquat with Surfactant. Fertilizer include 35 gal. of 3-10-10 for a total of 1-38-38. Soil type is Blount with Morley. . . . Weed control was excellent.

Greg Herron, Thayer Rd., Monroe Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Voris 295	150,800	--	19.5	$165.75	$ 65.46

Planted on May 28 with the M&W drill in 10" rows with a seed drop of 80#/acre. Sprayed with 1.0 pt. Paraquat, 1.0 pt. Sencor 4L, 1.0 qt. Dual 8E and Surfactant. Fertilization included 100# of 0-0-60 for a total of 0-0-60. Soil type is Blount with Morley. . . . Grass control was excellent while broadleaf control was fair. Field was slightly wet when planted.

Joe Hilty, Kleinoeder Rd., Spencer Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Fall Plow	Williams &	148,100	11.4%	27.8	$236.30	$ 87.38
2.	Coulter-Chisel	Gutwein 331	145,200	11.6%	27.2	231.20	83.32

1. Fall plow, disc, field cultivate, plant
2. Fall coulter-chisel, disc, field cultivate, plant

Planted May 28 in 30" rows with a seed drop of 60 lb./acre. Sprayed with 1.0 qt. Dual and 1.0 gal. Amiben with 20 gal. of water as a carrier. Fertilizer included 200# of 0-0-60 Fall broadcast and 250# of 3-10-30 in the row for a total of 8-25-195. Soil type is Blount and Pewamo. . . . Broadleaf weed control was good, grass control was excellent.

Dennis Kahle, Slabtown Road, Bath Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Agripro 350	128,000	13.9%	31.9	$271.15	$176.09
2.	Offset disc	Agripro 350	163,000	15.3%	29.0	$246.50	$147.38
3.	Fall plow	Agripro 350	151,000	12.6%	32.2	$273.70	$172.82

1. No-till planted with Kinze 15" palnter
2. Fall offset disc, disc, field cultivate, plant in 15"rows
3. Fall plow, field cultivate twice, plant in 15" rows

Planted on May 31 with a seed drop of 80#. Sprayed with 1 qt. Dual and 5# Sencor with 20 gal. water as a carrier. No-till also received 1 qt.Paraquat plus Surfactant. Basagran was used , post emerge to clean up the no-till. Soil type is Pewamo with Blount... Broadleaf control was good, grass control excellent. Root rot resistance is excellent.

Calvin Kiracofe, Sugar Creek Rd., Bath Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Williams	148,100	12.5%	40.6	$345.10	$225.92
2.	Offset Disc	Williams	139,400	12.9%	26.8	227.80	100.23

1. No-till planted with Crustbuster drill in 10" rows
2. Fall offset disc, Spring disc twice, drilled in 7" rows

Planted on May 28 with a seeding rate of 77 lb. for the no-till, and 60 lb. for the disc plot. Sprayed with 0.75 lb. of Sencor, and 1.0 qt. Dual with 20 gal of water as a carrier. No-till also received 1.0 qt. of Paraquat with Surfactant. Both plots post sprayed with 1.0 qt. Basagran. No fertilizer applied. Soil type is Sloan and Blount. . . . Broadleaf weed control was poor, grass control was excellent. Both plots had bean beetle damage in June. No-till plot was primarily in Sloan soil; disc plot was primarily in Blount soil. Soil type may have influenced yield.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

Bill Meyers, Stewart Rd., Bath Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Thompson 350	192,000	21.0%	12.3	$104.55	$-18.80

Planted on May 27 with the M&W (10") drill at a seed drop of 74#. Sprayed with 1 qt. Paraquat plus Surfactant, 1 qt. Dual and .8# Sencor with 20 gal. of water as a carrier. Fertilization included 217# 0-0-60 and 100# 0-46-0 broadcast in the Spring for a total of 0-46-130. Soil type is Morley. . . . Broadleaf and grass control was good. Root rot resistance was poor.

Gene Miller, Diller Road, American Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Pioneer 3981	139,000	13.4%	23.4	$198.90	$100.21

Planted on June 13 with the Crustbuster drill at a seed drop of 75#. Sprayed with .75 qt 2,4-D Ester preplant and .66 qt Paraquat with surfactant, .63 lb Lexone, and 1 qt Dual with 20 gal of water as a carrier. Soil type is Blount, , , Broadleaf and grass control was good. Root rot evaluation was excellent.

Charlie Plikerd, Defiance Trail, Amanda Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	N.K. 1474	110,000	9.4%	42.4	$360.40	$245.83
2.	Fall Plow	N.K. 1474	136,000	9.8%	44.9	381.65	265.88

1. Fall coulter-chisel, field cultivate twice, plant, cultivate
2. Fall plow, field cultivate twice, plant, cultivate

Planted on May 28 in 30" rows at a seed drop of 50#. Sprayed with 1 qt. Dual and .6# Lexone DF with 20 gal. of water as a carrier. Soil type is Blount and Pewamo. . . . Broadleaf and grass control was excellent. This was one of the very few areas in Allen County that occassionally received some rain during the summer months.

Wes Plikerd, Monfort Rd., Amanda Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Thompson TS200	--	10.1%	24.8	$210.80	$102.47
No-Till	Besson 80	--	9.5%	22.4	190.40	82.07
No-Till	Gutwein 260	--	9.6%	29.1	247.35	139.02
No-Till	Gutwein 331	--	10.8%	26.7	226.95	118.62
No-Till	OYO 162	--	10.0%	29.3	249.05	140.72
No-Till	Migro HP30-33	--	10.3%	27.5	233.75	125.42
No-Till	N.K. S-1492	--	9.2%	26.7	226.95	118.62
	Average:			26.6	226.10	117.77
No-Till	Agrisoy 45*	--	11.1%	26.9	228.65	120.32
No-Till	Agrisoy 31*	--	9.0%	30.8	261.80	153.47
No-Till	Agrisoy 46*	--	10.8%	26.8	227.80	119.47

Planted on May 30 with John Deere 30" planter and double-back to give 15" rows. Seed drop was 70#. Sprayed with 1.0 qt. Paraquat plus Surfactant, 1# Lexone WP, and 2.5 pt. Dual 8E with 40 gal. of water as a carrier. Soil type is Blount with Pewamo. . . . Weed control was good. This field was Group K of the County Soybean Variety Plots. Varieties with an asterick (*) were supplied by Wes.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

David Kesler, State Rd., Sugar Creek Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	William 82	185,000	12.6%	54.1	$459.85	$362.96

Planted on May 11 with the Kinze planter in 15" rows with a seed drop of 276,000. Sprayed with 1.3 pt. Paraquat with Surfactant, 1.1 pt. Dual, 1.0 lb. Lorox, and 0.55 lb. Lexone DF with 20 gal. of water as a carrier. No fertilizer applied. Soil type is Pewamo with Blount. . . . Weed control was good.

Mike Lehman, Amherst Rd., Perry Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Pella	134,000	--	28.0	$238.00	$117.33

Planted on June 2 with the Kinze 15" planter at a seed drop of 74#. Sprayed with 1 pt. Paraquat plus Surfactant, 1 pt. Sencor and 1 qt. Dual with 40 gal. of water as a carrier. Fertilization included 200# of 9-23-30 for a total of 18-46-60. Soil type is Blount. . . . Broadleaf control was good, grass control excellent. Root rot evaluation is good.

Jay Lugibihl, N. Phillips Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Migro 350	--	17.4%	27.1	$230.35	$111.74
No-Till	Pioneer 3981	--	15.3%	24.3	206.55	87.94
No-Till	Agripro 330	--	13.7%	28.3	240.55	121.94
No-Till	Gutwein 331	--	13.2%	25.6	217.60	98.99
No-Till	IB-127	--	13.3%	26.6	226.10	107.49
No-Till	Williams 79	--	13.1%	28.7	243.95	125.34
No-Till	Voris 339	--	13.5%	33.1	281.35	162.74
No-Till	Agripro 350	--	14.4%	22.6	192.10	73.49
No-Till	Thompson 400	--	13.8%	28.1	238.85	120.24
No-Till	N.K. MV32-67	--	13.0%	24.3	206.55	87.94
No-Till	Washington V	--	12.7%	24.0	204.00	85.39
No-Till	OYO 330	--	13.9%	26.1	221.85	103.24
	Average:		26.6%	26.6	226.10	107.49

Planted on May 21 with the Kinze 15" planter at a seed drop of 90#. Sprayed with .73 qt. Paraquat, 66# Sencor DF, 2.5 qt. Lasso and 1 qt. crop oil with 20 gal. of water as a carrier. 1 qt. Hoelon applied post emerge for volunteer corn. Soil type is Blount and Pewamo. . . . Broadleaf and grass control was good. This field was Group O and P of the County Soybean Variety Plots.

Luke Lugibihl, Augsburger Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Sprite	226,500		37.0	$314.50	$216.88

Planted on May 18 with the M&W drill at a seeding rate of 100 lb./acre. Sprayed with 1.0 qt. Paraquat with crop oil, 2.5 qt. of Lasso, and 0.6 lb. of Lexone DF. No fertilizer applied. Soil type is Blount and Morley. . . . Weed control was good.

SOYBEAN PLOTS PLANTED IN CORN STALKS CONTINUED

Paul Pursell, N. Napoleon Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Williams 79	163,000	12.4%	28.5	$242.25	$107.76

Planted on May 31 with the Kinze 15" planter at a seed drop of 74#. Sprayed with .66 gal. Lasso and .5# Lexone DF. Fertilization included 120# 0-46-0 and 180# 0-0-60 for a total of 0-55-108. Soil type is Blount. . . . Broadleaf control fair, grass control was good. Root Rot resistance is good. This field was lightly disced before planting to remove the ridges in the field.

Bill Reese, Bussert Rd., Sugar Creek Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Washington II	244,000	13.0%	36.5	$310.25	$207.77

Planted on May 20 with the Crustbuster drill at a seed drop of 100#. Sprayed with 1 qt. Paraquat plus surfactant, .75# Lexone DF and 1.2 qt. Dual. Soil type is Blount and Pewamo. . . . Broadleaf and grass control was good. Root Rot resistance is fair.

Tom Schumacher, Tom Fett Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Asgrow 3127 Washington V	209,000	- -	29.7	$252.45	$144.19

Planted on May 24 with the Kinze 15" planter at a seed drop of 245,000. Sprayed with 2 qt. 2,4D Ester plus sticker before planting. Also sprayed with 1 pt Paraquat plus surfactant, 2.25 pt Dual and .7 lb Sencor DF with 40 gal. of water as a carrier. Soil type is Blount with Morley and Pewamo. . . .Broadleaf and grass control was fair to good. Root rot resistance was good.

Dean Searfoss, Harrod Road, Auglaize Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	Agripro 26	- -	- -	22.0	$187.00	$76.72
2.	Spring Plow	"	---	- -	22.5	191.25	79.93

1. Fall coulter-chisel, field cultivate twice, plant, cultivate.
2. Spring plow, field cultivate twice, plant, cultivate.

Plant on May 30 in 30" rows at a seed drop of 55 lb/ac. Sprayed with 1 qt Dual and .45 lb Lexone DF with 10 gal of water as a carrier. Soil type is Blount. . . . Broadleaf control was good, grass control excellent.

Tom Stechschulte, Thayer Road, Bath Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Offset Disc	Agripro 26	224,000	12.0%	19.0	$161.50	$52.06
2.	Fall Plow	Agripro 26	212,000	12.0%	23.8	202.30	90.88

Planted disc plot on May 26 and the plow plot on June 2 in 7" rows with a seed drop of 235,000. Sprayed with 1 qt Dual and .75 pt Sencor 4L with 20 gal of water as a carrier. Soil type is Blount with Pewamo and Morley. . . Broadleaf and grass control was good. Disc plot dried out earlier than the plow plot and was therefore able to be worked and planted earlier.

Jim Weaver, Augsburger Road, Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Williams 79	--	--	35.0	$297.50	$201.38

Planted on May 21 with the Kinze 15" planter at a seed drop of 90#. Sprayed with 1qt. 2,4D before planting. Also sprayed with 1 qt. Paraquat plus surfactant, 2 qt. Lasso, and 1# Lorox. Soil type is Blount with Morley. . . . Broadleaf control good, grass control was fair. Resprayed part of field after beans were up with Basagran and Butyrac.

Vance Weaver, Sugar Creek Rd., Bath Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Beeson 80	148,000	--	22.9	$194.65	$ 84.05

Planted May 28 with the Crustbuster Drill (10") at a seed drop of 81#. Sprayed when 1 qt. Paraquat plus Surfactant, 1 qt. Dual and .8# Sencor 50W with 50 gal. of water as a carrier. Fertilization included 166# 0-0-60 for a total of 0-0-100. Soil type is Blount and Belmore. . . . Broadleaf and grass control was good. Root rot resistance was good.

Dale Werling, Amherst Rd., Auglaize Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	NK-1492	98,700	10.4%	24.3	$206.55	$ 94.83
2.	Fall Plow	NK-1492	--	10.5%	21.6	183.60	72.09

1. Fall coulter-chisel, disc, harrow, plant, cultivate twice
2. Fall plow, disc, harrow, plant, cultivate twice

Planted May 18 with an International planter in 30" rows at a seed drop of 55#. Sprayed with 1.5 pt. Dual and .5# Lexone with 20 gal. of water as carrier. Soil type is Morley and Pewamo. . . . Broadleaf and grass control was good.

Richard Werling, Bowdle Road, Auglaize Road

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	N. K. 1492	108,000	9.0%	18.0	$153.00	$41.78
2.	Fall Plow	"	"	10.0%	22.4	190.40	77.83

1. Fall Coulter-Chisel, disc, harrow, plant, cultivate twice.
2. Fall plow, disc, harrow, plant, cultivate twice.

Planted on May 18 with an International planter in 30" rows at a seed drop of 55#. Sprayed with 1.5 pt Dual and .5# Lexone with 20 gal of water as a carrier. Soil type is Morley. . . Broadleaf and grass control was good.

Kenny Winegardner, Clum Road, Auglaize Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Coulter-Chisel	Agripro 240	- -	- -	25.0	$212.50	$101.59
2.	Fall Plow	"	- -	- -	28.0	238.00	125.85

1. Fall Coulter-chisel, disc, field cultivate twice, plant, cultivate.
2. Fall plow, disc, field cultivate twice, plant, cultivate.

Planted on June 9 with a John Deere planter in 30" rows at a seed drop of 60#. Sprayed with 1 qt Dual and .5# Lexone with 20 gal of water as a carrier. Soil type is Morley and Blount. . . Broadleaf and grass control was good.

SOYBEAN PLOTS PLANTED IN SOYBEAN STUBBLE

George Brooks, Cols. Grove-Bluffton Road, Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Williams 79	151,000	13.3%	30.3	$257.55	$148.05

Planted on May 18 with the White 15" planter at a seed drop of 147,000. Sprayed with 1.5 pt. Paraquat plus Surfactant, 2 qt. Lasso and 1 pt. Sencor 46 with 40 gal. of water as a carrier. Fertilization was 100# 0-46-0 and 200# 0-0-60 broadcast in the fall, for a total of 0-46-120. Soil type is Blount and Morley... Broadleaf and grass control was good. Had to spot spray some thistles with Basagran.

Jeff Graham, Hancock County Line Road, Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Washington V	174,200	13.0%	24.0	$204.00	$ 89.04

Planted on May 21 with White 15" planter with a seed drop of 67#. Sprayed with 1.0 pt. Paraquat, 1.0 qt. Lasso, and 1.25 qt. of Lorox with 20 gal. of water as a carrier. Fertilization included 110# of 0-46-0 and 142 lbs. of 0-0-60 broadcast for a total of 0-51-8 Soil type is Blount with Pewamo and Morley. . . . Weed control was good. Part of the field was in corn stubble. The field is owned by the Bluffton School System and Jeff was required to follow soybeans with soybeans to establish a rotation.

Dean Holdgreve, Southworth Rd., Marion Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Agrosoy 46	--	--	25.5	$216.75	$107.64

Planted on May 31 with a seed drop of 80# in 10" rows with a Crustbuster drill. Sprayed wit 1.0 gal. of Bronco, 0.5 lb. Lexone DF, 1.1 pt. Lorox with 40 gal of water as a carrier. No fertilizer applied. Soil types are Blount and Pewamo. . . . Weed control is good. Root rot rating was very good.

SOYBEAN PLOTS PLANTED IN WHEAT STUBBLE

George Cramer, Shawnee Road, Shawnee Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Callahan 73Q2 R	--	--	8.0	$68.00	$-5.02

Planted on June 13 with the M & W drill (10") at a seed drop of 72#. Sprayed with 1 qt. 2-4D Ester 1 week before planting. Also sprayed with 1 qt. Paraquat plus Surfactant. Soil type is Blount... Broadleaf and grass control was fair. The residual herbicides is not a recommended practice. Dry weather and excessive cover at planting resulted in a poor stand. With the continued dry weather through the summer and before harvest, many of the beans had already shattered and were on the ground before the combine went through.

Bob Devier, Hardin County Line Rd., Jackson Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Williams 79	200,400	16.0%	16.5	$140.25	$ 19.65

Planted June 3 with the M&W drill in 10" rows with a seed drop of 90#. Sprayed with 1.0 qt. Paraquat plus Surfactant, 1.0 qt. Dual, 0.5 lbs. Lexone DF with 20 gal. of water as a carrier. Fertilization included 133# of 18-46-0 and 250# of 0-0-60 for a total of 24-61-150. Soil type is Blount with Morley. . . . Weed control was excellent. Root rot rating is good. Three trips over the field were made before spraying to knock down the wheat to get an adequate spray pattern. This practice may have hindered the beans due to compaction.

Gordon Martini, Wolfe Rd., Bath Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Agropro 350	--	13.0%	12.7	$107.95	$ 8.16

Planted on June 3 with the Kinze 15" planter with a seed drop of 72#/acre. Sprayed with 2.0 qt. 2,4D Ester a week ahead of planting, 1.0 qt. Dual, 0.5 lb. Sencor and 1.0 qt. Paraquat with Surfactant with 20 gal of water as a carrier. No fertilizer applied. Soil type is Blount with Pewamo.

John Marshall, Cool Rd., Monroe Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Williams	174,200	--	11.0	$ 93.50	$-24.17

Planted on June 2 with the White 15" planter at a seed drop of 174,000. Sprayed with 1 pt. Round-up, .5# Lexone, 1 pt. Lasso, 1 gal. Bronco and Surfactant with 40 gal. of water as a carrier. Soil type is Blount. . . . Broadleaf and grass control was good. Thistles were prominent throughout field.

TABLE 18. 1983 COMPARISON OF SOYBEAN PLOTS BY TILLAGE SYSTEM

CROP RESIDUE		Yield					Net Return				
		No-till	Fall Plow	Spring Plow	Offset Disc	Coulter Chisel	No-till	Fall Plow	Spring Plow	Offset Disc	Coulter Chisel
C R	D. Basinger (15")	39			38		$239	$	$	$217	$
O E	M. Basinger (30")		34			34		154			157
R S	J. Bassett (15")	16			16		36			23	
N I	B. Begg (15")	21			19		87			61	
D	J. Biery (10")	22			22		93			85	
U											
E	R. Bixel (15")	28	38				133	196			
	S. Blythe (30")		32			30		137			137
	R. Bowdle (7")				25	23				93	70
	G. Brooks (10")	48			48		298			292	
	G. Brooks (15")	49			45		301			267	
	B. Ernest (15")		24		22	28		50		35	78
	D. Ernest (10")	31			28		162			127	
	R. Foust (20")		44		37			266		202	
	M. Gable (30")		15		18			28		44	
	M. Hershberger (15")	23			24		100			107	
	J. Hilty (30")		28			27		87			83
	H. Hutchinson (10")	37	34		34	32	216	171		172	149
	D. Kahle (15")	32	32		29		176	172		147	
	C. Kiracofe (10")	41			27		226			100	
	R. Lloyd (15")	27			28		139			145	
	C. Plikerd (30")		45			42		266			246
	D. Searfoss (30")			23		22			80		77
	T. Stechschulte (7")		24		19			91		52	
	D. Werling (30")		22			24		72			95
	R. Werling (30")		22			18		78			42
	K. Winegardner (30")		28			25		126			102
Soybean Plot Average		32	30	23	28	28	$170	$135	$ 80	$129	$113
Number of Observations		11/13	10/14	1/1	7/17	5/11	11/13	10/14	1/1	5/17	6/11
Ranked First		85%	71%	100%	41%	46%	85%	71%	100%	29%	55%

TABLE 19. FOUR YEAR COMPARISON OF SOYBEAN PLOTS BY TILLAGE SYSTEMS

	Yield					Net Return				
	No-till	Fall Plow	Spring Plow	Offset Disc	Coulter-Chisel	No-till	Fall Plow	Spring Plow	Offset Disc	Coulter-Chisel
1983 Mean Average	33 (13)	31 (14)	23 (1)	26 (17)	31 (11)	175 (13)	140 (14)	80 (1)	103 (17)	102 (11)
1982 Mean Average	43 (13)	33 (7)	43 (7)	43 (13)	45 (13)	101 (13)	93 (7)	96 (7)	105 (13)	100 (13)
1981 Mean Average	37 (9)	33 (7)	37 (2)	39 (9)	34 (8)	112 (9)	70 (7)	100 (2)	115 (9)	83 (8)
1980 Mean Average	44 (2)	51 (2)	--	48 (2)	--	255 (2)	298 (2)	--	278 (2)	--
Four Yr. Average	39	37	34*	39	37*	161	150	92*	150	95*
Number of Observations	23/37	20/30	8/10	27/41	16/32	19/37	17/30	7/10	18/41	14/32
Ranked First	62%	67%	80%	66%	50%	51%	57%	70%	44%	44%

* Three year averages only.

TABLE 20. TIME & FUEL FOR TILLAGE SUMMARY

Soybeans

	No-till		Plow		Disc		Chisel	
	Time (Min.)	Fuel (Gal.)	Time (Min.)	Fuel (Gal.)	Time (Min.)	Fuel (Gal.)	Time (Min.)	Fuel (Gal.)
Averages	15	.8	42	3.5	35	2.6	36	2.7
Average Cost of Time and Fuel for Tillage and Planting	$2.71		$9.24		$7.32		$7.56	
Percent of No-Till's Cost	100%		340%		270%		279%	

Assume Fuel Costs $1.20/gallon and labor is $7.00/hour

TABLE 21. SUMMARY OF YIELD COMPARISONS BY EACH TREATMENT **
(Soybeans in bushels per acre)

Treatments	vs No-till	vs Fall Plow	vs Spring Plow	vs Offset Disc
Coulter-Chisel	32/37*	29/30	22/23	27/27
Offset Disc	30/31	24/26	---	
Spring Plow	---	---		
Fall Plow	35/32			

* Tested only once or twice, should not be taken as a representative sample.

** Represents average yields of all plots that contained in the same field the two systems shown.

TABLE 22. 1983 NO-TILL SOYBEAN PLOTS WITHOUT COMPARISONS

	Farm	Yield	Net Return
C R O E R S N I D U E	D. Augsburger (15")	14	$ 21
	E. Beery (15")	31	168
	R. Bowdle (10")	24	81
	D. Conner (15")	42	263
	L. Creeger (10")	9	-17
	C. Diller (15")	35	202
	D. Ernest (10")	36	211
	L. Evans (10")	28	125
	B. Gibbs (15")	18	26
	B. Hasson (10")	18	18
	J. Hefner (15")	29	139
	G. Herron (10")	20	65
	D. Kesler (15")	54	363
	M. Lehman (15")	28	117
	J. Lugibihl (15")	27	107
	L. Lugibihl (10")	37	217
	B. Meyers (10")	12	-19
	G. Miller (10")	23	100
	W. Plikerd (10")	27	118
	P. Pursell (15")	29	108
	B. Reese (10")	37	208
	T. Schumacher (15")	30	144
	J. Weaver (15")	35	201
	V. Weaver (10")	23	84
	Average	28	$127

	Farm	Yield	Net Return
B R E E A S N I.	Geo. Brooks (15")	30	$148
	J. Graham (15")	24	89
	D. Holdgreve (10")	26	108
	Average	27	115
W R H E E S A I. T	G. Cramer (10")	8	-5
	B. Devier (10")	17	20
	J. Marshall (15")	11	-24
	G. Martini (15")	13	8
	Average	12	0
Average No-till without Comparisons		26	$110
Average All No-till Plots		28	$127

TABLE 23. 1983 SOYBEAN TILLAGE PRODUCTION COST SUMMARY *

Treatment	Herbicide Cost	Fertilizer Cost	Tillage Cost	Other	Total	Bu/Ac	Cost Per Bu.
No-till	$35	$4	$ 0	$61	$100	32	$3.13
Plow	24	9	28	59	120	30	4.00
Disc	27	4	23	59	112	28	4.00
Chisel	25	11	28	59	122	28	4.36

* Represents average cost of all plots reported.

SOYBEAN PLOT OBSERVATIONS

This year there were quite a few good tillage comparison plots located throughout the county. Although yields county wide were low, soybeans seemed to fair slightly better than the corn crop. Specific observations are below:

I Soybean Yield Observations

A. 1983 Tillage Comparison Plots

1. Table 18 shows the average yields of all side-by-side comparisons. Yields were exceptionally close together when comparing tillage systems. Less than 5% difference in yields (±1.6 bu/ac) is not considered significant. In the 13 no-till plots which had a comparison plot there were only two cases where there was a significant difference.

2. The percentage of observations ranked first was very high in both the no-till and plow plots.

3. Table 21 shows average yields separated by comparison plots. Yields of all side-by-side comparisons were very close.

B. Four Year Average of Tillage Comparison Plots

1. Table 19 shows four years of soybean comparison plot results. The mean average for each year is computed by combining the average of the narrow row soybeans (7-10"), split row soybeans (15-20"), and 30" row soybeans. This average is not weighted according to the number of plots in each category.

2. The Four Year Average for all treatments is very close. The more each treatment is tested, the more reliable the result becomes.

3. University research has shown that soybeans planted in narrow rows (less than 15") outyield soybeans in wide rows. This trend has been seen in past demonstration plot results within the project. No row width comparisons were carried out this year. One reason is that in addition to yield benefits, producers are learning that narrow rows are necessary for weed control in no-till soybeans. For this reason no one plants no-till soybeans in wide rows.

II Economic Data Observations

A. Comparison By Tillage Systems

1. In Table 18 and Table 19 no-till net returns are higher than the other tillage plots. The other plots are competitive when there are an adequate number of tests to compare it to.

B. Production Costs

1. Table 23 shows production cost averages by tillage treatments.

2. The cost of herbicides in the no-till system is about $10 higher than for other treatments. The point to note is that the total cost of production of no-till crops is still below any of the other treatments, since the increased herbicide costs were more than offset by tillage savings.

3. When comparing time and fuel costs (Table 20) No-till is about one-third of these costs in comparison to the other tillage methods.

CONSERVATION TILLAGE WHEAT PLOTS

WHEAT PLOTS PLANTED IN SOYBEAN STUBBLE

Bill Begg , Hillville Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURI
No-Till	Hart	--	--	41.0	$133.25	$ 11.34

Planted on October 5 with the Crustbuster Drill (10") at a seed drop of 2 bushels/acre. Fertilization included 300# 18-46-0, and 50# 0-0-60 broadcast in the Fall, and 214# of 28[illegible] in the Spring for a total of 114-138-30. Soil type is Morley with Blount.

Julius Bixel, Swaney Rd., Richland Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Roland	--	15.0%	64.5	$209.63	$111.61
2.	Disc	Roland	--	15.0%	65.6	213.20	109.59

1. No-Till planted with M&W drill in 10" rows.
2. Tandem disc once, planted with IH press wheel drill in 7" rows.

Planted October 1 at a seed drop of 2 bu. Fertilization included 100# 18-46-0, 100# 0-0-60, 300# 21-0-0, for a total of 81-46-60. Soil type is Blount with Morley. . . . Both fields looked good all year.

Richard Bixel, Swancy Rd., Richland Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Ruler	--	12.0%	50.2	$163.15	$ 62.15

Planted on October 2, 1982 with the M&W drill at a seed drop of 2 bu. Fertilization included 400# 21-0-0, 50# 18-46-0, 150# 0-0-60, and 9# Borate for a total of 93-23-90-9. Soil type is Blount with Pewamo.

Richard Bowdle, Crabb Road, Perry Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Logan	--	--	69.9	$227.18	$129.02
2.	Tandem Disc	Logan	--	--	69.3	$225.23	$115.62

1. No-till planted with the M & W Drill (10")
2. Tandem disc, cultimulcher, drill(7")

Planted on October 8 at a seed drop of 2.5 Bu. Fertilization included 250# 10-26-26 in the fall and 100# Urea in the spring for a total of 71-65-65. Soil type is Casco and Millgrove...

Larry Creeger, MeHaffey Rd., Jackson Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Hart			51.0	$ 65.75	$ 76.72

Planted on October 21, 1982 with the M&W drill in 10" rows with a seed drop of 2.5 bushel/acre. Fertilizer included 100# of 0-0-60 and 100# of 18-46-60 and 100# 46-0-0 for a total of 64-46-60. Soil type is Blount with Pewamo. . . . There was some hail damage.

WHEAT PLOTS PLANTED IN SOYBEAN STUBBLE

LaMar Evans, Neely Rd., American Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Pioneer S-76	--	12.0%	51.4	$167.05	$ 62.98

Planted on October 28 with the M&W drill in 10" rows in bean stubble at a seeding rate of 2.0 bushels/acre. Fertilization included 250# of 6-26-26 applied prior to drilling, and 250# of 28% applied in the Spring for a total of 85-65-65. Soil type is Sloan.

Melvin Gable, Zion Church Rd., Amanda Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	Tandem Disc	Caldwell & Roland	--	12%	59.6	$193.70	$ 64.53
2.	No-Till	Roland	--	12%	53.5	173.88	50.70

1. Tandem disc once, planted with M&W drill (10")
2. No-till planted with M&W drill (10")

Drilled on October 30 seed drop of 2 bushel/acre. Fertilization included 400 lbs. 18-46-0 broadcast in the fall and 258# of 28% Spring applied for a total of 110-92-124. Soil type is Blount. . . . Variety of Wheat used on the treatments was different and could effect yield significantly.

Sam Hager, MeHaffey Rd., Jackson Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Hart		13.5%	45.0	$146.25	$ 26.85

Planted on October 9, 1982 with the M&W drill in 10" rows at a seeding rate of 2.5 bushels/acre. Fertilizer included 300# of 6-26-26 in the fall and 268# of 45-0-0 in the Spring for a total of 139-78-78. Soil type was Blount.

Greg Herron, Thayer Rd., Monroe Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-Till	Titan	--	--	43.0	$139.75	$ 54.96

Planted October 18 with the M&W drill at a seeding rate of 2.5 bushels/acre. Fertilization included 250# of 10-26-26 broadcast after planting for a total of 25-65-65.

Harold Hutchinson, Sugar Creek Rd., Jackson Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Hart	--	12.8%	62.0	$201.50	$128.10
2.	Disc	Hart	--	12.8%	48.0	156.00	78.22

1. No-till planted with Crustbuster drill in 10" rows
2. Disced, planted with conventional drill in 7" rows

Planted on October 20 with a seeding rate of 2.5 bushel/acre. Fertilizer included 200# of 21-0-0 broadcast in February. Soil type is Blount and Morley. . . . Field had some hail damage.

WHEAT PLOTS PLANTED IN SOYBEAN STUBBLE

Dennis Kahle, Slabtown Road, Bath Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Arthur	--	--	32.4	$105.30	$-2.13
2.	Disc	Arthur	--	--	42.3	$137.48	$16.26

1. No-till planted with crustbuster 10" drill
2. Tandem disc twice, plant with IH 7"drill

Planted with plots on October 24 with a seed drop of 3 Bu./acre. Fertilization included 200# 18-46-0 and 194# 0-0-6- broadcast and 139# 28% topdressed for a total of 76-93-116. Soil type is Morley and Shoals... Conventional field was planted in slightly lower and better ground.

Meadowbrook Farms, Hanthorn Rd., Perry Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Caldwell	--	--	63.3	$205.73	$102.35
2.	Disc	Caldwell	--	--	51.6	167.70	54.75

1. No-till planted with M&W 10" Drill
2. Tandem disc, cultimulcher, drill 7"

Planted on October 15" with a seed drop of 2.5 bushel/acre. Fertilization included 300# 6-26-26 and 100# 45-0-0 for a total of 63-78-78. Soil type is Blount and Pewamo.

Mike Rumbaugh, Hanthorn Rd., Perry Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-Till	Arthur	--	--	60.6	$196.95	$ 94.44
2.	Disc	Arthur	--	--	61.4	199.55	97.98

1. No-Till planted with the M&W drill (10")
2. Tandem disc once, planted with a 7" John Deere drill

Planted on October 12 at a seed drop of 2 bu. Fertilization included 300# 21-0-0 and 200# 18-46-0 for a total of 99-92-0. Soil type is Blount with Pewamo and Morley.

Kenny Winegardner, Clum Road, Auglaize Township

TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
No-till	Dancer & Titan	- -	- -	60.4	$196.30	$114.30

Planted on October 9 with the M&W drill (10") at a seed drop of 2.5 bu. Fertilization included 220# 10-26-26 for a total of 22-57-57. Soil type is Morley and Blount.

Kurt Winegardner, Lawrence Road, Auglaize Township

	TREATMENT	VARIETY	POPULATION	MOISTURE	YIELD	VALUE	NET RETURN
1.	No-till	Arthur	- -	- -	68.9	$223.93	$129.88
2.	Tandem Disc	"	- -	- -	74.6	242.45	141.44

1. No-till planted with M&W drill (10").
2. Tandem disced once, planted in 10" rows.

Planted on October 12 with a seed drop of 3 bu. Fertilizer included 240# 6-24-24 and 80# 46-0-0 for a total of 51-58-58. Soil type is Blount with Pewamo.

TABLE 24. WHEAT PLOTS BY YIELD AND NET RETURN

FARM	YIELD		NET RETURN	
	NO-TILL	DISC	NO-TILL	DISC
J. Bixel	65	66	$112	$110
R. Bowdle	70	69	129	116
M. Gable	54	60	51	65
H. Hutchinson	62	48	128	78
D. Kahle	32	42	- 2	16
Meadowbrook Farms	63	52	102	55
M. Rumbaugh	61	61	94	91
Kurt Winegardner	69	75	130	141
Average of Plots w/comparisons	60	59	$ 93	$ 84
B. Begg	41	*	$ 11	*
R. Bixel	50	*	62	*
L. Creeger	51	*	77	*
L. Evans	51	*	63	*
S. Hager	45	*	27	*
G. Herron	43	*	55	*
Ken Winegardner	60	*	114	*
Average of All No-Till Plots	54		$ 77	

WHEAT PLOT OBSERVATIONS

The 1983 wheat plot turned out very good. Being planted in the Fall of 1982, the plots had ideal moisture conditions, and a mild Winter to produce many good results. Below are the observations we have made.

1. Table 24. shows the yields and net returns of all the 1983 wheat plots. All these plots were planted in soybean stubble.

2. When comparing no-till plots versus tandem discing yields were fairly close. Of the eight plots with a comparison no-till was similar to discing in three tests, greater than 3 bushel/acre better in two tests and below the disc plot by more than 3 bushels/acre in three tests.

3. No-till, on the average returned $9 more per acre than did the conventional till plots.

4. In all the plots no-till seemend to have greener color and germinate quicker than the conventional plots. The potential of conserving soil moisture in the Fall is a great advantage of no-till wheat. This can make the difference in getting a good stand during a dry autumn.

5. Time savings was another advantage experienced with the no-tilling of wheat. Eliminating the time required to disc the field allows farmers to get the crop in quicker. This can make a difference in years when late bean harvest make it difficult to get wheat sowed on time.

SOYBEAN HERBICIDE PLOTS

NO-TILL HERBICIDE PLOTS
GERALD BROOKS FARM

Twenty-nine different soybean herbicide combinations were compared on the Gerald Brooks farm near Bluffton, Each combination was sprayed in one pass across both a Miller disc section and no-till section. Each section contained beans planted in 10 inch, and 15 inch row widths. Planting was done on May 17 and spraying on May 18. Prior crop was two years of no-till corn. Planting was done with White planter and M&W drill. Sprite beans were used. Water was used as the spray carrier at the rate of 26 gal/acre, spray pressure was 30 PSU, and speed was 4 mph. Spraying was made the day after planting except the post emergent products which were applied on July 8. The post emergent products needed to be on earlier but scheduling prevented this. Although the beans were 17 to 20 inch tall at time of spraying, no damage occurred to the beans. A sprayer with narrow tires was used and the beans were sprayed in the heat of the day.

Individual treatments were rated for amount of control by SWCD and SCS personnel. The results are shown in Table .Rating was done using a numerical scale with ten representing perfect control and one poorest control. A rating of 6 or above is considere to be "adequate control". In addition to the ratings the table shows approximate cost of each combination used. These costs are based on the average prices which elevators within the county charges for these materials. Ratings were done at harvest time. Each treatment was replicated and each replication was rated on both sides of the plot. Thus the rating shown represents the average of four observations within each tillage treatment.

Plots were yield checked according to tillage treatments. Yields were as follow: the no-till treatment yielded 48.5 bu/ac. in 15" rows and 47.7 bu./acre in 10" rows, the disc treatment yielded 45.5 bu./ac. in 15" rows and 47.7 bu./ac. in 10" rows.

Specific observations regarding the plots are as follows:

1. Control varied greatly within the no-till plot and the variation corresponded to site conditions.. Control was noticeable poorer on the north half of the no-till plot. This area was considered to have more weed pressure as years ago it was farmed as a separate field. The "south" rating of the no-till plot was consistently 2 to 3 points higher than the "north" rating for the same treatment.

2. Overall control was better in the disc treatment as opposed to the no-till treatment. However, there was not enough difference in control to adversely affect yield.

3. Perennial species accounted for a great deal of difference in control rating between the disc versus no-till plots. Milkweed and hemp dogbane were two species which were more often observed in the no-till treatment.

4. Plots 10-14 received low rates as shown. These are not the planned rates, but do represent the applied rates due to application error. Control generally held up in the disc plot at these rates, but it dropped off in the no-till plots, especially the section with heavy weed pressure.

5. Goal performed well in the no-till plots. At the two pint rate considerable stunting and browning of the beans occurred in the disc plot, but no damage occurred in the no-till plot. For many weeks the beans in the disc plot were noticaeable shorter (12") and thinner than the no-till beans.

6. Goal was the only preemergent treatment to affect bindweed. The Goal did a very good job of burning off the bindweed and holding it back, but it did not eradicate it.

7. Plot #20 contained no Paraquat, but Lexone/Sencor at the 1.5 pint rate. In this plot control was adequate and no significant damage occurred to the beans.

8. Due to application error, some of the post emergent plots were applied at half rates. Overall control by the post emergent products was very good, considering the rates and the lateness of application.

9. Three way combination of Sencor/Lexone+Lorox+Grass Material did not perform much different from Sencor/Lexone alone.

10. No difference in control was observed between the 10" drilled versus the 15" planted beans.

GERALD BROOKS HERBICIDE PLOT INFORMATION

PLOT	RATE	PRE-EMERGENT HERBICIDE	POST-EMERGENT HERBICIDE	COST $/AC	RATING NO-TILL	RATING DISC
1	1.1 PT 1.0 PT 1.8 QT	PARAQUAT SENCOR LASSO	NONE	$27.19	6.7	10.0
2	1.1 PT 1.0 PT 1.5 PT	PARAQUAT SENCOR DUAL	NONE	27.35	7.0	9.5
3	1.1 PT 1.0 PT 1.8 PT	PARAQUAT SENCOR PROWL	NONE	25.12	6.2	9.0
4	1.1 PT 1.0 PT 1.5 PT	PARAQUAT SENCOR SURFLAN	NONE	29.12	6.7	9.5
5	1.1 PT 2.0 PT 2.0 PT	PARAQUAT GOAL DUAL	NONE	35.72	7.2	9.5
6	1.1 PT 1.0 PT 2.5 QT	PARAQUAT SENCOR LASSO	NONE	30.72	7.0	9.5
7	1.1 PT 1.0 PT 1.7 PT	PARAQUAT SENCOR DUAL	NONE	28.58	6.5	9.0
8	1.1 PT 1.0 PT 2.2 PT	PARAQUAT SENCOR PROWL	NONE	26.78	6.7	9.5
9	1.1 PT 1.0 PT 1.9 PT	PARAQUAT SENCOR SURFLAN	NONE	32.05	7.0	9.0
10	1.1 PT 0.8 PT 1.9 QT	PARAQUAT SENCOR LASSO	NONE	24.78	7.0	10.0
11	1.1 PT 0.8 PT 1.5 PT	PARAQUAT SENCOR DUAL	NONE	24.43	6.5	9.5
12	1.1 PT 0.8 PT 1.9 PT	PARAQUAT SENCOR PROWL	NONE	22.59	6.5	9.0
13	1.1 PT 0.8 PT 1.5 PT	PARAQUAT SENCOR SURFLAN	NONE	30.48	5.7	9.5
14	1.1 PT 0.9 PT 1.9 QT	PARAQUAT SENCOR LASSO	NONE	26.88	6.7	9.0
15	1.5 PT 1.2 PT 2.0 PT	PARAQUAT SENCOR DUAL	NONE	35.50	6.7	9.0
16	1.5 PT 1.2 PT 3.0 PT	PARAQUAT SENCOR PROWL	NONE	34.87	7.0	9.0
17	1.5 PT 1.2 PT 2.0 PT	PARAQUAT SENCOR SURFLAN	NONE	37.87	5.2	8.5
18	1.5 PT 1.5 PT 2.0 PT	PARAQUAT SENCOR SURFLAN	NONE	40.79	6.0	9.0
19	4.0 QT 1.2 PT	BRONCO SENCOR	NONE	47.20	6.2	8.5
20	1.5 PT 2.0 PT 1.0 PT	SENCOR DUAL CROP OIL	NONE	30.65	6.7	9.0
21	1.5 PT 0.8 PT 1.2 PT 2.0 PT	PARAQUAT SENCOR LOROX DUAL	NONE	36.71	6.2	9.5
22	1.5 PT 0.5 PT 1.0 PT 2.0 PT	PARAQUAT SENCOR LOROX DUAL	NONE	32.37	6.7	8.0
23	1.5 PT 0.8 PT 0.8 PT 0.5 PT 2.0 OZ 1.0 QT	PARAQUAT BASAGRAN BLAZER 2-4 D,B CROP OIL	POAST	33.11	7.0	7.0
24	1.5 PT 0.5 PT 0.8 PT 0.5 PT 2.0 OZ 1.0 QT	PARAQUAT BASAGRAN BLAZER 2-4 D,B CROP OIL	POAST	29.41	7.2	7.5
25	1.5 PT 0.8 PT 0.5 PT 0.8 PT 0.5 PT 2.0 OZ 1.0 QT	PARAQUAT SENCOR BASAGRAN BLAZER 2-4 D,B CROP OIL	POAST	38.19	8.2	9.0
26	1.5 PT 0.8 PT 2.4 PT 1.0 QT	PARAQUAT SENCOR CROP OIL	HOELON	33.82	7.0	9.0
27	1.5 PT 2.0 QT 0.5 PT 1.0 QT	PARAQUAT WHIP CROP OIL	BASAGRAN	N/A	5.7	7.0
28	1.5 PT 3.0 QT 1.0 QT	PARAQUAT LASSO 	BLAZER	42.09	7.0	7.5
29	1.5 PT 0.5 PT 1.0 PT	PARAQUAT 	POAST BLAZER	24.85	8.0	9.0

WES PLIKERD HERBICIDE PLOT INFORMATION

PLOT	RATE	PRE-EMERGENT HERBICIDE	POST-EMERGENT HERBICIDE	COST $/AC	NO-TILL PLANTED	NO-TILL DRILLED
1	1.5 PT 2.0 PT 2.2 PT	PARAQUAT LOROX DUAL	NONE	$33.71	7.0	7.0
2	1.5 PT 2.0 PT 2.7 QT	PARAQUAT LOROX LASSO	NONE	33.73	5.0	4.0
3	1.5 PT 2.0 PT 3.0 PT	PARAQUAT LOROX PROWL	NONE	31.53	7.0	6.0
4	1.5 PT 0.8 PT 2.2 PT	PARAQUAT LEXONE DUAL	NONE	31.18	1.0	5.0
5	1.5 PT 1.0 PT 2.2 PT	PARAQUAT LEXONE DUAL	NONE	34.11	5.0	7.0
6	1.5 PT 1.0 PT 2.7 QT	PARAQUAT LEXONE LASSO	NONE	34.13	5.0	7.0
7	1.5 PT 1.2 PT 2.7 PT	PARAQUAT LEXONE LASSO	NONE	37.06	7.0	10.0
8	1.5 PT 0.8 PT 1.2 PT 2.2 PT	PARAQUAT LEXONE LOROX DUAL	NONE	38.24	6.0	8.0
9	1.5 PT 0.5 PT 1.0 PT 2.2 PT	PARAQUAT LEXONE LOROX DUAL	NONE	33.91	2.0	8.0
10	1.5 PT 2.0 PT 2.7 QT	PARAQUAT GOAL LASSO	NONE	39.43	6.0	9.0
11	4.0 QT 2.0 PT	BRONCO GOAL	NONE	49.57	7.0	9.0
12	4.0 QT 1.0 PT	BRONCO LEXONE	NONE	44.27	7.0	8.0
13	1.5 PT	LEXONE	NONE	17.55	3.0	4.0
14	1.5 PT 1.0 PT	LEXONE CROP OIL	NONE	18.35	1.0	0.0
15	1.2 PT 2.2 PT	LEXONE DUAL	NONE	28.47	1.0	4.0
16	1.2 PT 2.2 PT 1.0 PT	LEXONE DUAL CROP OIL	NONE	29.27	2.0	3.0
17	1.2 PT 2.2 PT 1.0 PT 2.0 PT 11.0 OZ	LEXONE DUAL CROP OIL	BLAZER SURFACTANT	49.14	10.0	6.0
18	1.5 PT 2.7 QT 2.0 PT 11.0 OZ	PARAQUAT LASSO	BLAZER SURFACTANT	42.39	9.0	7.0
19	1.5 PT 2.7 QT 1.0 QT 2.4 PT 3.0 OZ 1.0 QT	PARAQUAT LASSO	BASAGRAN HOELON 2,4-DB CROP OIL	60.52	4.0	3.0
20	1.5 PT 2.4 PT 3.0 OZ 1.0 QT 1.0 QT	PARAQUAT	HOELON 2,4-DB BASAGRAN CROP OIL	46.66	3.0	0.0
21	1.5 PT 1.0 QT 3.0 OZ 1.0 QT		POAST BASAGRAN 2,4-DB CROP OIL	55.37	1.0	8.0
22	1.5 PT 1.5 PT 1.0 QT 3.0 OZ 1.0 QT	PARAQUAT	POAST BASAGRAN 2,4-DB CROP OIL	63.94	5.0	9.0
23	1.5 PT 1.0 PT 1.0 PT 1.0 QT 3.0 OZ 1.0 QT	PARAQUAT SENCOR	WHIP BASAGRAN 2,4-DB CROP OIL	N/A	10.0	10.0
24	1.5 PT 1.0 PT 1.0 QT 3.0 OZ 1.0 QT	PARAQUAT	WHIP BASAGRAN 2,4-DB CROP OIL	N/A	7.0	9.0

NO-TILL SOYBEAN HERBICIDE PLOTS
WES PLIKERD FARM

Twenty-nine different no-till soybean herbicide combinations were compared on the Wes Plikerd farm near Spencerville. Each combination was used to treat both a plot with 10 inch rows and a plot with 15 inch rows. Soil type was Blount Silt Loam. The soybeans were no-till planted and sprayed on May 30. Prior crop was corn (also no-till) Seed drop was approximately 83# using a 30 inch John Deere planter. The 15 inch plots were planted by lowering the seeding rate and doubling back. The no-till plots were planted using a Crustbuster drill. Bean variety was Agrosoy 45NR. Spraying was done immediately following planting. Water was used as a carrier and the spraying was done using flat fan nozzles, (20" spacing) 30 PSI pressure and a speed of 4 mph. Carrier volume was 26 gal./acre. Paraquat was used as a contact herbicide (1 qt./ac.) except for the Bronco plots.

Post emergent spraying was done on July 7. Spraying was done with a pick-up sprayer at 10 mph using 8010 flat fan nozzles on 20" spacing, 55 PSI pressure and 33 gal/ac. of water as a carrier. Spraying was done courtesy of Farm Service Center at Scotts Crossing. Timing of spraying was considered appropriate for most grasses and broad-leafs. However it was too late for smartweed which was 12-14 inches tall in some of the plots, especially those which received no contact herbicide at planting.

Table lists degree of control observed. Observations were made by Steve Davis and Dennis Hall, a numerical system in which 10 represented perfect control and 0 no control. The ratings shown represent each separate replications with each replication being observed from both ends of the plot.

Specific observations made are listed as follows:

1. There was considerable difference in control between the rowed beans and drilled beans. The difference was attributed more to variation in weed pressure across the field than to the influence of row width.

2. The rate of Lexone/Sencor used had very direct effect on control. In plots 4 thru 7 degree of control was directly proportional to amount used. At .8 pint Lexone/Sencor (plot 4) control rating was poor. At 1 pint rating was fair to good. At 1.2 pint rating was good to excellent.

3. No Lexone/Sencor damage to the beans was observed in the plots where 1.5 pints were used.

4. Lexone/Sencor did not provide adequate control when no Paraquat was used (plots 13-16). These plots looked good early, but later in the season grasses came on strong. The addition of crop oil in plots #14 and 16 actually decreased control compared to the same treatments (13&15) without oil.

5. Lower control was observed in the Lorox plots (1-3) than in the Lexone/ Sencor plots.

6. Goal gave adequate to excellent control with no damage to the beans.

7. The three way combinations (Lexone+Lorox+Grass Material) did not provide any better control than the two way combinations of Lexone + grass material.

8. The post products generally gave the best control, except for plots where the weeds were too far along when sprayed. However, costs on these combinations were generally higher.

9. The use of Paraquat and a residual at planting greatly improved the performance of the post products.

10. Whip is a new grass compound which is coming to market. Use of it gave good control. In fact the Whip-Basagran plot had the best rating of any combination used. Whip also controlled grass which Hoelon would not get due to height. No price was available on Whip.

11. Post-Basagran (#21 and 22) gave excellent control in one replication (drill) and poor control in (planter) a second. The difference was due to weed pressure. In neither case was a residual herbicide used. In plot #21 no Paraquat was used either. Where pressure was light this approach resulted in good control but where the pressure was heavy the weeds got to far along for the Poast-Basagran to take out. Possibly an earlier application date would have solved this problem.