

SUMMARY OF RESULTS:  
SURVEY OF WINONA COUNTY FARM OPERATORS

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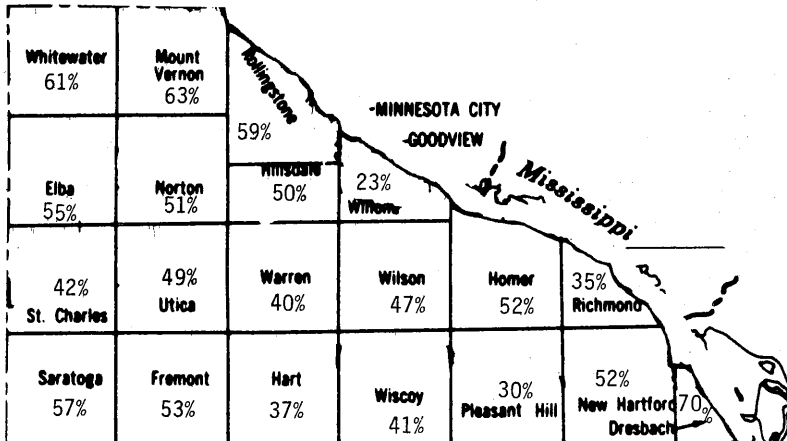
## TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
Characteristics	2
Land Tenure	3
Livestock	4
Crops	6
Chemicals and Fertilizers	6
Conservation Practices	7
Perceptions and Attitudes	9
Changes in Farm Practices	11
Future Trends	11

SUMMARY OF RESULTS: SURVEY OF WINONA COUNTY FARM OPERATORS

The current farm crisis has, and is, changing the shape of agriculture and the family farm. In the Spring of 1986 the Center for Urban and Regional Affairs at the University of Minnesota, working with the Land Stewardship Project, conducted a mail survey of rural residents in Winona County in order to get a close look at how the current crisis in agriculture is affecting farm practices, ownership patterns, and farm operation. The survey touched on a number of issues including land tenure, land use, agricultural practices, conservation practices, and crop and livestock patterns. A questionnaire addressing these issues was sent to all rural residents in Winona County. Names and addresses were obtained from public records in Winona County.

Questionnaires were mailed to 1,250 rural residents. Approximately 48 percent of the 1,037 farmers returned completed surveys. The surveys were coded by township. As shown by the map below, the highest response rates were in Dresbach (70 percent) and Mount Vernon (63 percent) townships, with the lowest response rate in Winona Township (23 percent) where the percentage of rural residents who are farmers is quite low.



## CHARACTERISTICS

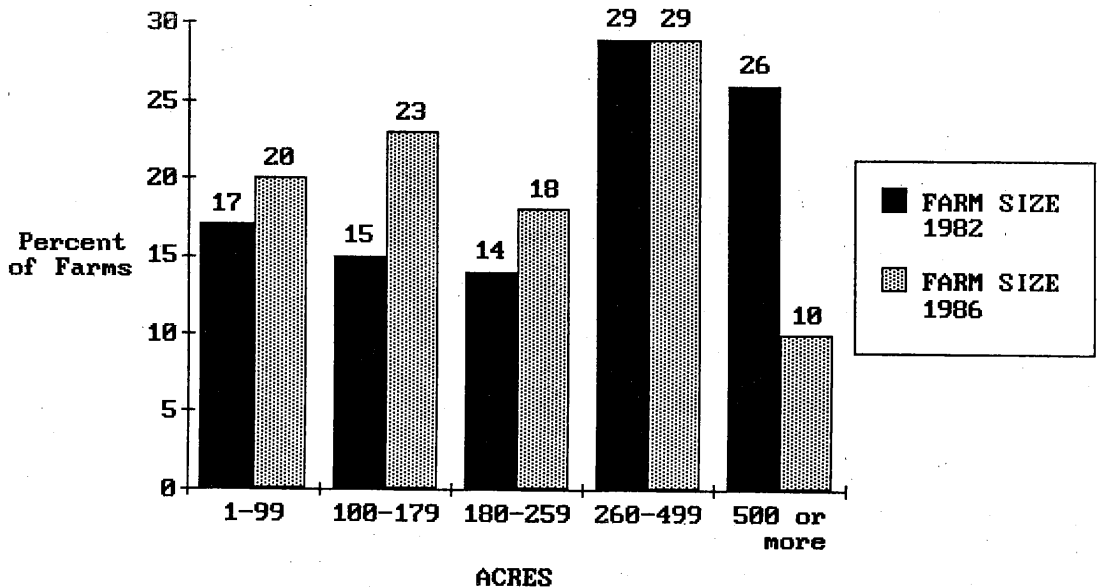
Of those returning questionnaires, 97 percent were men and 3 percent women. Nearly 72 percent of the respondents were over age forty, and 39 percent were over age fifty-five. The respondents had an average of twenty-seven years of farming experience, with an average of twenty-two years experience on the farm that they were operating at the time the survey was conducted.

The farms represented by the respondents were diverse, but were, for the most part, family-sized operations. The average farm size was just under 250 acres, and 62 percent of the farms were less than 260 acres. However, the U.S. Agriculture Census of 1982 found that 46 percent of Winona County farms were 260 acres or less. Therefore, the survey results appear to somewhat overrepresent these smaller farms (Chart 1).

CHART 1

### DISTRIBUTION OF WINONA COUNTY FARM SIZE,

1982 Census of Agriculture and 1986 CURA Survey

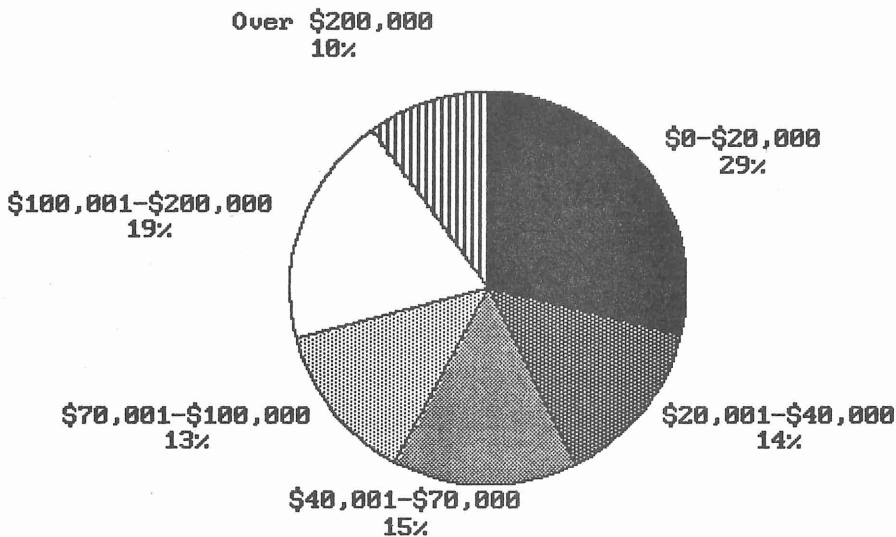


Corn, soybeans, and small grains were the predominant crops grown. Corn was grown by 81 percent of the respondents. Small grains were grown by 66 percent of the respondents and 20 percent of respondents grew soybeans.

The average corn crop acreage was seventy-eight acres, the average soybean crop was thirty-six acres, and the average small grain crop was thirty-four acres.

Just over 42 percent of respondents reported having gross sales of between \$20,000 and \$100,000. Twenty-nine percent reported having gross sales of over \$100,000, and 29 percent reported gross sales of under \$20,000. (See Chart 2.)

CHART 2  
GROSS FARM SALES



#### LAND TENURE

Approximately 40 percent of the respondents rented land from someone in 1985. The average size of these rented parcels was 179 acres. However, 70

percent of the rented parcels were this size or smaller. Approximately 2 percent of all respondents reported that they only rented land and did not own land. In the last five years 40 percent of those who have rented land have increased their rented acreage, while only 11 percent have increased their ownership of land in the last five years.

Among the respondents who rented land, three out of four had as their landlord: a relative, retired farmer, another farmer, or a combination of these three. Just over 10 percent had as their landlord a corporation or government body. Lease lengths were generally for one year (67 percent), with 16 percent being for two or three years and 16 percent being over three years. Nearly 90 percent of those who rented paid cash rent.

A number of lease agreements specifically addressed such issues as land use, soil conservation, crop rotations, fertilizer use, and herbicide/insecticide use. More than one-third of the leases mentioned soil conservation, one-third mentioned crop rotations, and more than one-fourth mentioned land use, while nearly one in four leases mentioned crops to be grown, and one-seventh mentioned fertilizer or pesticide use.

#### LIVESTOCK

The raising of livestock was a common characteristic of the respondents. Eighty-five percent of the respondents raise either dairy cattle, beef cattle, or hogs. One-half of the respondents had dairy cattle, one-third had beef cattle, and one-fifth had a hog operation (Charts 3-5). Livestock operations were again generally small. Fifty-five percent of the dairy cattle herds were under 100 animals, while 79 percent of all beef operations were under 100 and 44 percent of the hog operations were under 100 animals.

CHARTS 3-5

DISTRIBUTION OF LIVESTOCK OPERATIONS BY NUMBER OF ANIMALS

CHART 3  
WINONA COUNTY DAIRY  
CATTLE OPERATIONS :

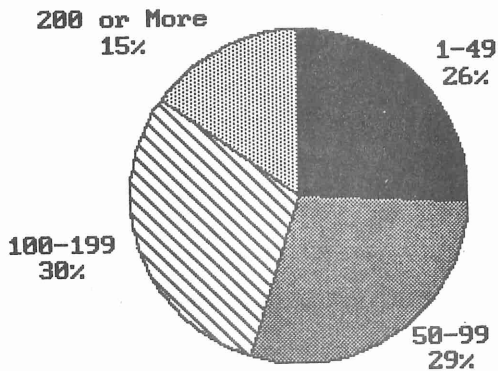


CHART 4  
WINONA COUNTY BEEF  
CATTLE OPERATIONS

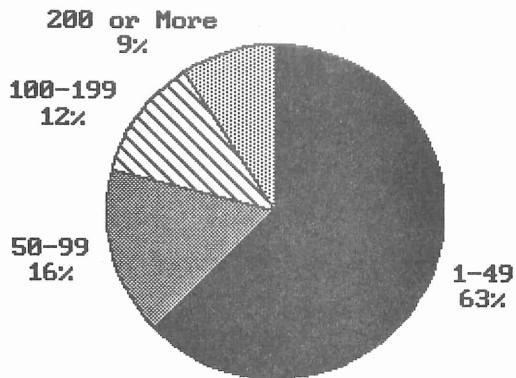
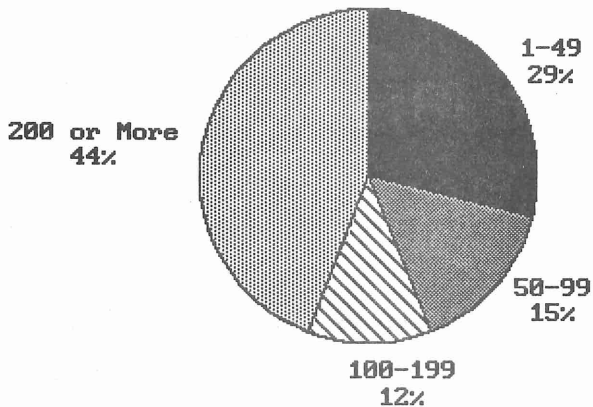


CHART 5  
WINONA COUNTY HOG  
OPERATIONS



## CROPS

The corn, soybean, and small grain acreage accounted for just over 40 percent of all owned acreage surveyed, with hay and pasture accounting for 36 percent. On rented acreage surveyed, corn, soybeans and small grain accounted for just over 48 percent of all rented acreage, with hay and pasture accounting for 35 percent of all rented acreage.

## CHEMICALS AND FERTILIZERS

Chemical fertilizers were used primarily on corn. Approximately 75 percent of those respondents who grew corn on their own land and 84 percent of those with rented corn acres applied chemical fertilizers. Almost all corn acres were chemically fertilized, with 90 percent of the owned corn acres and 97 percent of the rented corn acres being chemically fertilized. There was no appreciable difference in the rates of application. Corn growers applied an average of 122 pounds of nitrogen, 58 pounds of phosphorus, and 109 pounds of potash to their corn acreage. Among all respondents who reported using chemical fertilizers, the average expenditure per acre was \$14.60.

Manure was used as a crop fertilizer by three out of four respondents. These respondents fertilized an average of fifty-one acres per year with manure. Those who fertilized with manure reported that, on average, manure made up about 47 percent of the total amount of fertilizer that they used. Sixteen percent of respondents reported using only manure as a fertilizer. Respondents handled manure in a variety of ways. One-fifth stored a portion of the manure produced in a lagoon or pit, one-half stored some manure in a pile, and 90 percent of these respondents spread some portion of the manure as it was generated.

The use of herbicides and insecticides was a widespread practice. Just over 73 percent of the respondents reported using at least one herbicide or



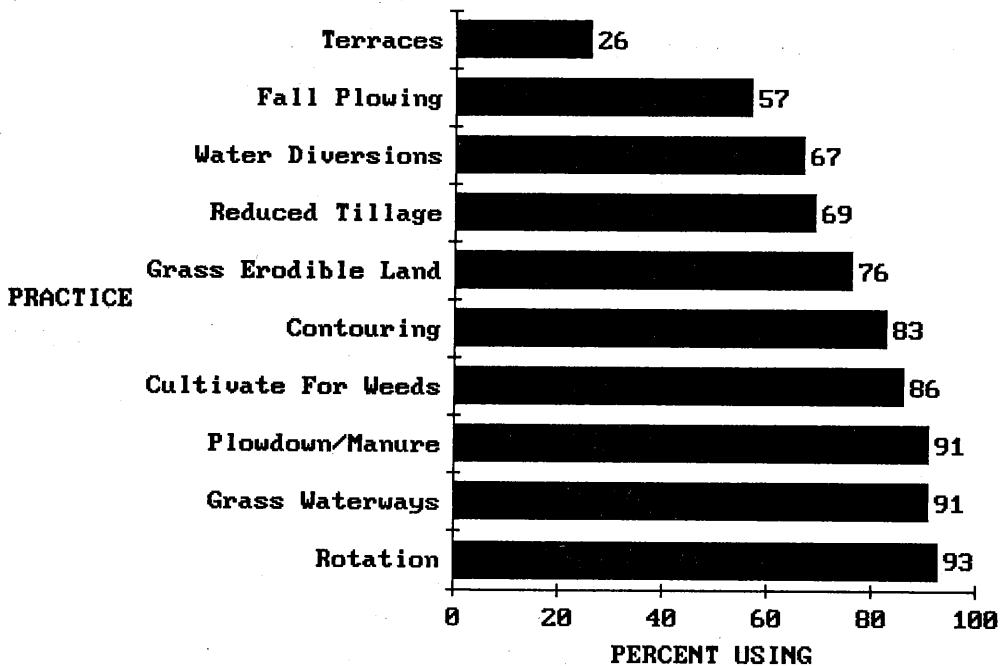
insecticide. The average expenditure for the users of these chemicals was \$6.10 per acre. The most widely used herbicides were Atrazine (82 percent), Lasso (69 percent), and Bladex (42 percent). Counter (41 percent), Dyfonate (30 percent), and Furadan (24 percent) were the most widely used insecticides.

#### CONSERVATION PRACTICES

Approximately 30 percent of respondents have a written farm conservation plan and about six in ten of these plans are fully implemented. However, these numbers may not accurately reflect the extent to which conservation practices are used by respondents. Eighty percent of owners reported that they kept an average of 133 acres in a rotation that included a year or more of hay, sod or pasture. Among respondents who rented cropland, 70 percent had an average of 113 acres in such a rotation. Chart 6 indicates the percentage of respondents who reported currently using particular conservation practices.

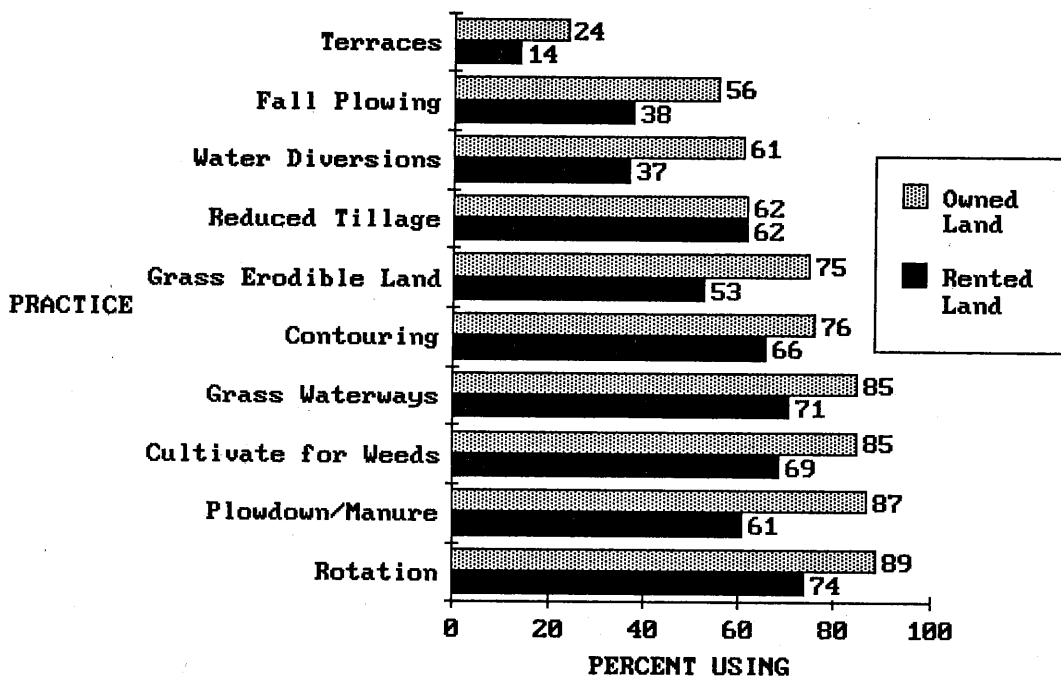
CHART 6

#### PERCENT USING CONSERVATION PRACTICES



Despite the widespread use of these conservation practices, survey results indicate that the most common techniques, with the exception of reduced tillage, are employed to a greater degree on owned land than on rented land (Chart 7).

CHART 7  
CONSERVATION PRACTICES ON OWNED AND RENTED LAND

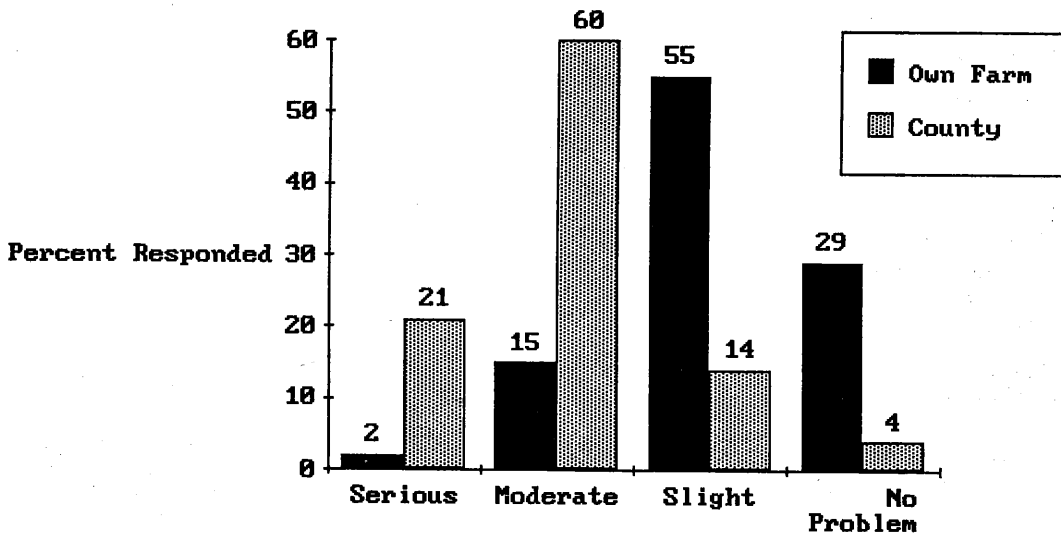


## PERCEPTIONS AND ATTITUDES

Respondents perceived soil erosion problems on their own farms to be less serious than in the county (Chart 8). More than 80 percent of respondents believed that soil erosion in the county was serious or moderate, while only 17 percent believed it to be a serious or moderate problem on their farm. In addition, 83 percent reported that soil erosion on their farm was slight or no problem.

CHART 8

PERCEIVED EXTENT OF SOIL EROSION: OWN FARM AND COUNTY



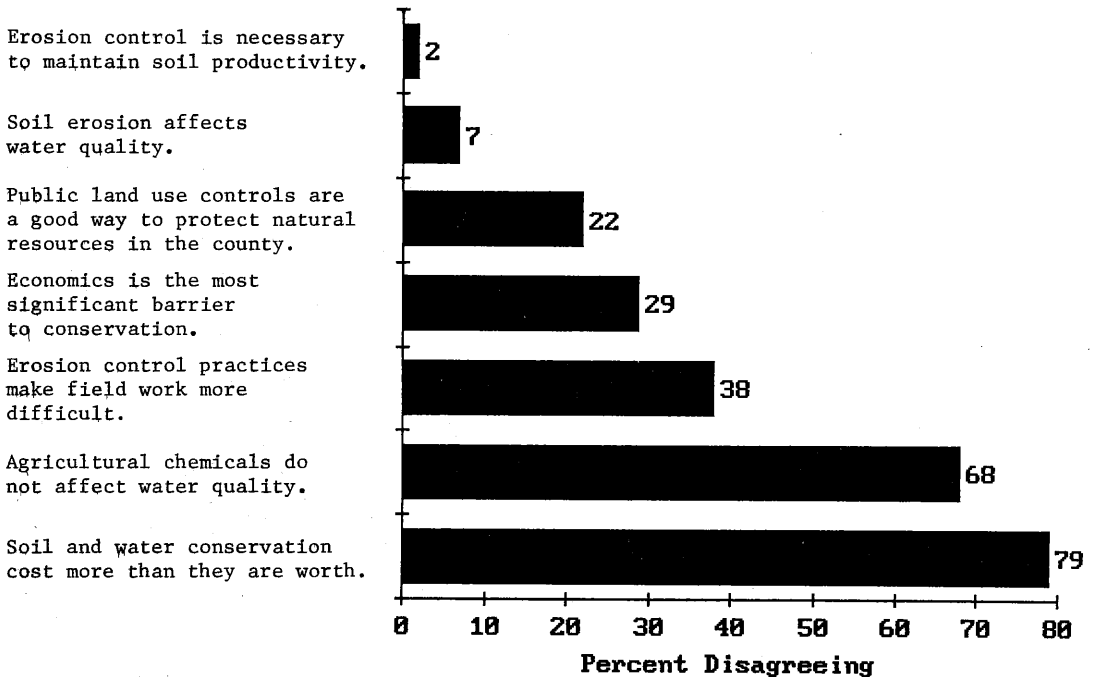
Similarly, 60 percent of respondents felt that there were serious or moderate water quality problems in the county, while only 23 percent felt that water quality was a serious or moderate problem on their farm. More than three-fourths of all respondents have had their water tested, and of those identifying water quality problems, 77 percent reported high levels of nitrates.

Attitudes regarding soil erosion control and water quality problems showed a high degree of concern for controlling soil erosion and preventing water quality problems (Chart 9).

CHART 9

ATTITUDES TOWARD SOIL AND WATER QUALITY ISSUES

PERCENT DISAGREEING



Only 2 percent of respondents disagreed with the statement that erosion control is necessary to maintain soil productivity. Seven percent of respondents did not agree that soil erosion affects water quality. Just over one in five respondents did not agree that public land use controls were a

good way to protect natural resources in the county. More than two-thirds of the respondents disagreed with the statement that agricultural chemicals do not affect water quality, while nearly four out of five respondents did not agree that soil and water conservation cost more than they are worth.

#### CHANGES IN FARM PRACTICES

Respondents reported a wide variety of changes in their farming practices over the last five years. Several of these changes were significant. Despite the economic difficulties facing farmers, respondents reported no significant reduction in conservation efforts. Only 2 percent of respondents reported decreasing their conservation efforts, while 50 percent reported increasing their efforts. Approximately 25 percent of respondents reported an increase in their participation in state and federal conservation programs, while only 9 percent reported a decrease.

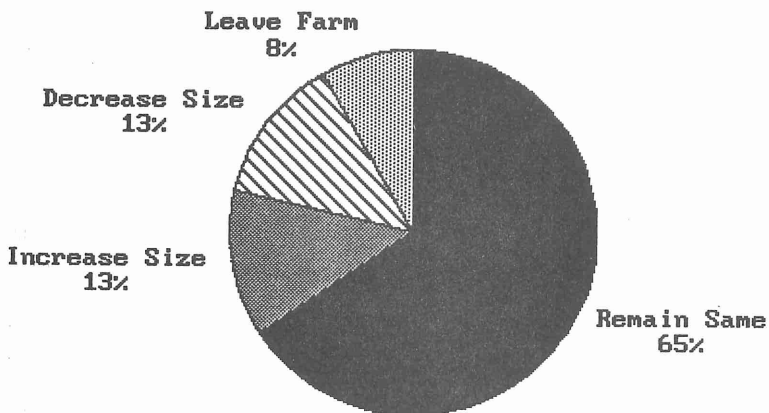
Nearly one-third of those responding to the survey stated that they reduced their use of fertilizer in the last five years, while one-sixth reported increasing their use of fertilizers. One in four respondents decreased their pesticide use, while only one in fourteen reported an increased use of these chemicals.

#### FUTURE TRENDS

Nearly two-thirds of the respondents intend to maintain their current level of operations in the next five years, while only one in seven plan on increasing operations, one in seven plan on decreasing operations, and one in twelve plan to leave farming in the next five years (Chart 10).

CHART 10

CHANGES IN NEXT FIVE YEARS



Several inferences about future farm operations in Winona County can be drawn from the survey data. The median age of farmers should continue to increase. Just under 40 percent of respondents were over age fifty-five, while less than 1 percent were under twenty-five years of age. Farm size will likely increase. Over one-half of those planning to expand in the next five years had gross sales of more than \$100,000, while one-half of those planning to decrease operations in the next five years had gross sales of \$40,000 or less in 1985. Of those who plan on decreasing operations in the next five years 68 percent own 260 acres or less, and 42 percent of those who plan on leaving farming in the next five years own between 40 and 179 acres. Among those who responded that they had purchased land in the last five years, two out of three had gross sales of more than \$100,000.

According to the survey data, more land will be rented out in the future, and will involve the larger farm operators. More than one-half of those who rented land from others owned more than 260 acres, and 60 percent had gross sales of more than \$100,000, while 80 percent of those who reported renting more land to others grossed \$40,000 or less. Respondents who reported renting more land from others in the last five years were three times as likely to plan on increasing their operations in the next five years than those who did not rent land. In general, these results indicate a need for concern about a possible future increase in reliance on rented land and the potential this, in turn, has for diminished use of conservation practices.