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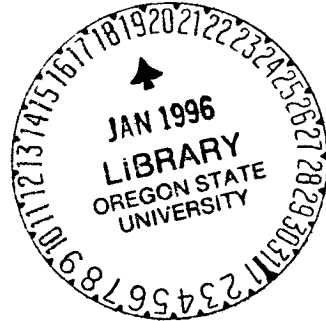
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Dryland Wheat Production and Marketing: Two Decades of Change



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Dryland Wheat Production and Marketing: Two Decades of Change

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DRYLAND WHEAT PRODUCTION AND MARKETING: TWO DECADES OF CHANGE

S. Macnab, G. Cook, and C. Seavert*

INTRODUCTION

This cost of production study was initiated 21 years ago. Each year for the past 2 decades, the survey has been updated to reflect changing times and input costs. The purpose of this publication is to review the changes that have occurred over this time period and to reflect on the implications of these changes for future production cost changes.

When the cost of production study for dryland wheat in the Columbia Plateau was started 21 years ago, the wheat industry did not have an estimate for the cost of producing wheat. This study has provided such a figure. It also has focused attention on the different types of production costs in producing wheat. Over time, the estimated costs derived in the study have become less important for individual farmers, as they substituted their own figures.

Over the years, the study also has looked at new farming practices and compared them to traditional practices, and has introduced the concepts of partial budgeting and cash flow. These farm management tools helped farmers make business decisions using figures from their own farm. Early on, figures from the study were used as the basis for leases for some farmers. Attorneys also have frequently used the study as a basis for establishing the value of wheat production. Other

people, including bankers and appraisers, have used the study as a decision aid.

CHANGES

Has the study area changed in 20 years?
Yes! It has changed in many ways.

1) The average farm size has increased 41.6 percent and the crop land per farm 38.2 percent. These figures are from the Census of Agriculture for Sherman County (Figure 1, page 14). Throughout the study, Sherman County has been used as the basis for statistical data as most farming operations in the county are strictly grain farms and not mixed grain/livestock operations (page 12).

2) The average cost of the equipment component for the farm has increased 235 percent (Figure 3, page 15). This also is reflected in the size of the equipment used on today's farm. In 1974, the combine header was 18 feet in width and could harvest 35 to 40 acres per day. Today, the combine header is 30 feet in width and is expected to harvest 60 to 100 acres per day. Today, farmers are using one machine where three would have done the work before. The movement of the grain from the field to the elevator also has seen major

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changes. In 1974, the farmer used his farm trucks to move the grain. Today, bank-out wagons and semi trucks move the grain from the combine to the elevator. The practice of renting or leasing the trucks has become a popular option.

3) Farm tillage practices also have changed. In 1974, in many areas of the study, the conventional tillage tool was the moldboard plow. Drier conditions and recent government farm programs have encouraged farmers to switch from the plow to a "stubble mulch" residue soil management system.

This change in practices has led to a change in the amount and intensity of some weeds, cereal crop diseases, and yield in exchange for better soil conservation management. There also is greater availability of herbicides to be used in the fallow year, which has relieved the urgency of an initial tillage operation.

4) The study has reflected production changes in the region by increasing the average farm yield (Figure 5, page 16). This was first done in 1976, from 32 bushels per acre to 33, in 1980 to 34, and in 1989 to 45. The increases reflect varietal and other improvements and the retirement of several thousand acres of low yielding land due to enrollment in the Conservation Reserve Program (1987-89; Figure 5, page 12 and 16). A change in the cost of production study's format was made in 1991. Since that time, a floating 5-year average yield for a five-county area of Oregon's Columbia Plateau has been used.

5) There have been two changes of major importance in farm labor. First, with larger size equipment, fewer hired helpers are

needed on today's wheat farm. Government regulations have also played a role in encouraging growers to reduce their labor force through increased rules for hired help. Second, more owners and operators are working off the farm some time during the year. This provides additional income for family living as well as medical and other benefits.

6) A high percentage of farmers have made a major commitment to conservation. To keep more valuable soil on the farm and out of the streams, a coordinated series of terraces, diversions, silt catchment dams, and other practices were installed and continue as an annual cost in the overall farm budget. Although the United States Department of Agriculture has committed technical and financial assistance to this endeavor, the main reason for success of the effort has been the voluntary commitment by growers.

7) For 19 of the 21 years included in the study, the estimated costs to produce and market a bushel of wheat have exceeded the average market price for wheat as reported in Portland, Oregon. How can farmers stay in business when this happens? There are several possible answers to this question.

a) Farm deficiency payments have covered the shortfall for minimizing losses or breaking even, and in some cases profits.

b) In the short run, a person can live on the depreciation of equipment; but at some point, the equipment must be replaced.

c) If the farm is paid for, the farmer can live on the opportunity cost of the value of the farm land.

d) Farms have gotten larger, and the costs for a particular farm may be lower due to economies of size.

e) Yields may be higher due to the weather and/or other factors.

ANALYZING TWO DECADES OF WHEAT COSTS

Enterprise budgets were used to estimate the variable and fixed costs associated with producing and marketing wheat in the Columbia Plateau. Variable costs are costs that change with the level of inputs to produce wheat. For example, adding the first increments of fertilizer to a wheat crop increases the level of output and thus increases the total cost to produce the wheat crop. However, if the producer wishes to lower costs and decreases the amount of fertilizer, yields also may be negatively affected. Conversely, fixed costs are costs that do not vary, or cannot be avoided, by changing the amount of wheat produced. These costs remain the same regardless of the wheat yield or input prices.

This section of the study discusses the costs from budgets developed over the 21-year period. Each enterprise budget was for a calendar year. All budgets were prepared at the end of their respective crop year. Furthermore, each budget reflected costs for producing wheat on half of a tillable acre and summer fallow establishment and maintenance on the other half acre. This accounted for the summer fallow-wheat rotation typical of farms in the Columbia Plateau.

VARIABLE COSTS

Some interesting observations can be made from Table 1 on pages 4 and 5. Fertilizer costs increased 32 percent between 1974 and 1993 with costs in 1974 at \$6.30 per acre and \$8.33 per acre in 1993, even though the price per unit of nitrogen remained relatively stable. The cost increase in general reflects the retirement to CRP of lower yielding acres that frequently received little or no fertilizer and the higher application rate applied to the remaining higher yielding acres. Prices in 1994 increased dramatically by 40 percent because of a shortage of fertilizer. The future of nitrogen costs is unknown at this time.

Herbicide costs increased by 40 percent between 1974 and 1994 from \$6.35 to \$8.89 per acre, respectively. The cost per unit of individual herbicides has increased significantly over the years, but advanced chemistry has created newer classes of herbicides that require far less product per acre, helping to keep the cost per acre to a minimum.

Fuel costs increased 83 percent from \$3.12 per acre to \$5.72 per acre. The cost of diesel fuel was \$0.36 per gallon in 1974 and \$1.01 (road tax included) in 1994. Gasoline prices were \$0.45 per gallon in 1974 and \$1.16 in 1994.

Table 1. Dryland Wheat Production and Marketing Costs per Acre, 1974 - 1994.

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
VARIABLE Costs										
Fertilizer	6.30	6.00	5.55	5.10	5.10	5.10	6.00	6.60	6.75	6.90
Wheat Seed	5.66	5.36	4.13	3.80	4.95	6.16	6.16	6.05	6.22	6.10
Herbicide	6.35	6.85	6.31	6.13	5.81	5.84	6.74	7.02	8.73	8.81
Fuel	3.12	3.51	3.55	3.77	4.03	6.84	8.18	8.35	7.97	7.19
Machinery Repairs	5.43	6.00	5.71	6.07	6.58	7.37	8.11	8.03	8.09	8.09
Marketing	8.80	8.96	9.57	10.56	11.22	13.20	15.30	16.32	17.00	16.66
Operating Interest	1.74	2.00	1.60	2.35	2.78	3.61	4.20	4.60	4.50	3.60
Hired Labor	1.47	1.89	1.88	1.97	2.07	2.23	2.47	2.15	2.95	3.15
Other	5.39	5.33	5.32	5.42	6.05	5.97	6.05	6.36	6.37	6.47
TOTAL Variable Costs	44.26	45.90	43.62	45.17	48.59	56.32	63.21	65.48	68.58	66.97
FIXED COSTS										
Insurance	5.54	4.27	4.38	4.08	4.54	4.58	5.11	5.07	6.16	5.65
Land Charge	40.45	50.16	50.54	49.20	52.34	65.04	81.90	50.00	50.00	50.00
Machinery Interest	9.79	10.05	10.19	10.90	13.16	18.98	24.25	27.22	27.57	23.78
Machinery Depreciation	10.44	11.01	11.81	12.59	13.39	14.42	16.06	14.44	15.84	16.51
Operator Labor	11.47	12.37	12.50	12.87	13.73	15.08	16.58	15.16	15.21	15.21
TOTAL Fixed Cost	77.69	87.86	89.42	89.64	97.16	118.10	143.90	111.89	114.78	111.15
TOTAL Cost per Acre	121.95	133.76	133.04	134.81	145.75	174.42	207.11	177.37	183.36	178.12
Break-even PRICE per Bu.	3.81	4.18	4.03	4.09	4.40	5.29	6.09	5.22	5.39	5.24
YIELD Assumed Bu/Acre	32.00	32.00	33.00	33.00	33.00	33.00	34.00	34.00	34.00	34.00

Table 1. Dryland Wheat Production and Marketing Costs per Acre, 1974 - 1994 (continued).

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
VARIABLE Costs											
Fertilizer	6.90	7.20	6.15	5.70	6.00	8.55	8.69	9.27	8.33	8.33	11.70
Wheat Seed	5.50	5.50	4.54	4.81	6.60	6.90	6.27	9.49	9.83	7.65	9.38
Herbicide	10.18	9.19	9.44	9.50	10.50	7.00	9.00	9.00	8.10	8.47	8.89
Fuel	6.81	6.79	4.33	5.66	5.67	6.31	7.33	6.45	6.75	6.95	5.72
Machinery Repairs	8.08	7.71	8.51	8.51	8.93	9.38	14.67	13.43	18.08	18.44	19.39
Marketing	16.66	16.32	16.32	16.32	16.66	20.58	20.79	22.50	22.50	23.63	20.25
Operating Interest	4.26	3.07	2.33	2.77	3.44	3.69	1.95	1.62	1.43	1.45	1.52
Hired Labor	3.15	2.16	2.15	2.36	2.36	2.46	2.25	1.60	1.60	1.60	1.62
Other	6.47	6.39	6.11	6.13	6.37	9.89	11.98	14.15	19.47	21.50	9.88
TOTAL Variable Costs	68.01	64.33	59.88	61.76	66.53	74.76	82.93	87.51	96.09	98.01	88.35
FIXED COSTS											
Insurance	5.77	3.29	3.44	3.43	4.23	4.70	4.46	4.86	4.74	5.40	6.64
Land Charge	50.00	50.00	43.00	45.00	48.00	50.00	50.00	50.00	50.00	50.00	50.00
Machinery Interest	27.23	22.35	19.63	21.84	23.71	27.22	12.81	14.07	16.07	17.02	27.45
Machinery Depreciation	16.97	17.05	15.45	16.22	17.92	19.38	13.34	15.08	21.50	19.55	29.18
Operator Labor	15.22	15.21	15.21	15.21	15.21	15.21	16.59	16.82	18.55	17.56	17.26
TOTAL Fixed Cost	115.19	107.90	96.73	101.70	109.07	116.51	97.20	100.83	110.86	109.54	130.53
TOTAL Cost per Acre	183.20	172.23	156.61	163.46	175.60	191.27	180.13	188.34	206.95	207.55	218.88
Break-even PRICE per Bu.	5.39	5.07	4.61	4.81	5.16	4.25	4.00	4.19	4.60	4.61	4.86
YIELD Assumed Bu/Acre	34.00	34.00	34.00	34.00	34.00	45.00	45.00	45.00	45.00	45.00	45.00

Machinery repairs increased dramatically over the 21-year period. Repair costs were \$5.43 per acre in 1974 and \$19.39 in 1994. This is a 257 percent increase in cost. The reason for the rise is increased new equipment prices and complexity of the machinery. Newer technology is more expensive to maintain and replace.

Marketing costs also have increased over time. These marketing costs are paid on a per bushel basis. The increase in marketing costs per acre (\$8.80 to \$20.25) over the 2 decades reflects in part the difference in the yield per acre, increases in the cost of handling and transporting grain, and increases to Oregon's grower-imposed wheat assessment that supports research and market development.

Total variable cost to produce wheat in 1974 was \$44.26 per acre and \$88.35 per acre in 1994. This is a 100 percent increase in variable costs to the wheat producer as shown in Table 2.

FIXED COSTS

A land charge was assessed each year to produce wheat. To the grower, this land charge could be a rental fee, a land payment (including principal and interest charges and property taxes), or an opportunity cost. This opportunity cost is the amount of money a wheat producer would receive if the wheat producer had sold or rented the land and invested those dollars in an investment fund. The overall land charge between 1974 to 1994 did not change significantly, although land charges did fluctuate during the late 1970s and early 1980s.

Machinery interest increased 180 percent during the 21-year period. The interest cost to own machinery to produce wheat was \$9.79 per acre in 1974 and \$27.45 per acre in 1994. This increase occurred because of two factors: the cost to borrow money and the higher purchase price of machinery.

Machinery depreciation also increased by 180 percent because of the higher purchase price of machinery. The per-acre cost for machinery depreciation was \$10.44 in 1974 and \$29.18 in 1994.

Total fixed costs in 1974 were \$77.69 per acre and \$130.53 in 1994. This is a 68 percent increase in costs. These costs were incurred by the producer regardless of the number of bushels of wheat harvested.

TOTAL COSTS

Total costs per acre include both variable and fixed costs. The total cost to produce wheat on a per-acre basis was \$121.95 in 1974 and \$218.88 in 1994, a 79 percent increase over the 21-year period (Figure 4, page 15).

Once the total costs per acre are known, the break-even price to produce a bushel of wheat can be calculated. In 1974, it cost a wheat grower \$3.81 per bushel to produce 32 bushels of wheat per acre. That cost increased to \$4.86 per bushel in 1994. Although the number of bushels of wheat per acre increased dramatically during this period of time, the costs to produce wheat on a per-acre basis increased more rapidly and thus increased the cost per bushel of wheat.

Table 2. Index of Dryland Wheat Production and Marketing Costs per Acre, 1974 - 1994 (1974 = 100%).

	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994
	PERCENTAGES										
VARIABLE Costs											
Fertilizer	100.00	88.10	80.95	95.24	107.14	109.52	97.62	95.24	137.94	132.22	185.71
Wheat Seed	100.00	72.97	87.46	108.83	109.89	97.17	80.21	116.61	110.78	173.67	165.72
Herbicide	100.00	99.37	91.50	106.14	137.48	160.31	148.66	165.35	141.73	127.56	140.00
Fuel	100.00	113.78	129.17	262.18	255.45	218.27	138.78	181.73	234.94	216.35	183.33
Machinery Repairs	100.00	105.16	121.18	149.36	148.99	148.80	156.72	164.46	270.25	332.94	357.12
Marketing	100.00	108.75	127.50	173.86	193.18	189.32	185.45	189.32	236.25	255.68	230.11
Operating Interest	100.00	91.95	159.77	241.38	258.62	244.83	133.91	197.70	112.07	82.18	87.36
Hired Labor	100.00	127.89	140.82	168.03	200.68	214.29	146.26	160.54	153.06	108.84	110.20
Other	100.00	98.70	112.24	112.24	118.18	120.04	113.36	118.18	222.26	361.22	183.30
TOTAL Variable Costs	100.00	98.55	109.78	142.82	154.95	153.66	135.29	150.32	187.38	217.10	199.62
FIXED COSTS											
Insurance	100.00	79.06	81.95	92.24	111.19	104.15	62.09	76.35	80.51	85.56	119.86
Land Charge	100.00	124.94	129.39	202.47	123.61	123.61	106.30	118.67	123.61	123.61	123.61
Machinery Interest	100.00	104.09	134.42	247.70	281.61	278.14	200.51	242.19	130.85	164.15	280.39
Machinery Depreciation	100.00	113.12	128.26	153.83	151.72	162.55	147.99	171.65	127.76	205.90	279.52
Operator Labor	100.00	108.98	119.70	144.55	132.61	132.69	132.61	132.61	144.64	161.73	150.48
TOTAL Fixed Cost	100.00	115.10	125.06	185.22	147.74	148.27	124.51	140.39	125.11	142.69	168.02
TOTAL Cost per Acre	100.00	109.09	119.52	169.83	150.36	150.23	128.42	143.99	147.71	169.70	179.49

IMPACTS AND IMPLICATIONS

The Oregon State University Extension Service publishes enterprise budget sheets for nearly every major agricultural crop and livestock enterprise in the state. However, this study is one of the few that has been updated on an annual basis. The annual accumulation of data has allowed a more accurate accounting for changes within the industry that have been used:

Locally... By farmers as a basis for developing the production and marketing costs relevant to their personal farming enterprise practices. It has allowed them to evaluate changes in production practices and purchasing decisions using the study in a partial budgeting format. It has provided a format for cash flow budgeting. Updating the study annually has encouraged its use in writing leases and settling estates or easing the change-over of the operation from one family generation to another.

Regionally... By ag lenders both as a tool to evaluate loan applications in the industry and to educate operators about the cost of their practices. The study has been cited frequently in research work as a basis for comparing tillage operations, tillage versus chemical alternatives, and even in predicting the long-term expectations for the wheat industry in the region.

Nationally... The cost study has been used frequently to evaluate production and marketing costs across various wheat producing regions of the nation. The annually updated data also increased its usefulness in developing and/or justifying various farm programs.

The authors plan to continue to update this study on a regular basis, but future reports may look different. We expect the report to change as production and marketing practices change. The ever-changing face of agriculture (yields, farm size, acceptable practices, etc.) will dictate the need for changes to keep the report current.

The value of the report likely will increase in future years as agriculture and its support industries change. Since wheat is likely to remain in the category of a high-volume/low-value commodity, it will be important to recognize the relationships between the inputs and the products.

For example, wheat production across the Plateau has remained fairly constant in the past 70 years, with average yields reflecting advancements in new varieties and the impact of acreage controls in government farm programs. Government programs have been implemented since 1933 with a goal of providing "cheap" food through the use of production controls. But in the free market where the inputs are created and sold, there are no production controls and the value of an input reflects the actual cost to produce it. The value of foodstuffs such as wheat has not kept pace with the changes in the value of the inputs.

Using numbers from the study and the average price of wheat at export terminals in the Portland market, we can illustrate the differences. In 1974, a farmer could purchase a new pickup truck with the equivalent of 1,460 bushels of wheat. Today a new pickup would cost that

farmer almost 6,200 bushels. In 1974, a new tractor could be purchased for 9,600 bushels; by 1984, that figure had increased to 21,640 and by 1994, it reached 44,987 bushels. The cost of a new combine shows the same bushel-value increase from 8,750 20 years ago to nearly 54,000 bushels today. Furthermore, it takes 181 percent more wheat to purchase the same amount of fuel today.

On the other hand, the price for commercial fertilizer has remained relatively stable over the life of the study. Technology and education have played important roles in the assessment of fertility needs, management, and application safety. Increasing costs of equipment and tillage have spurred interest in pesticide technology as an alternative. The result has been a wider array of new pesticide options that have shorter residuals, are more target specific, and are more effective at rates that are only a fraction of what their predecessors required.

To further control the cost of pesticides, today's farmers are better educated about monitoring the pests in the field and determining the economic threshold, the point where not controlling the pest constitutes a bigger threat to crop/food safety and overall farm economics.

With the value of wheat remaining low and the value of production inputs increasing, it has become very difficult for today's farmer to grow enough wheat to purchase the needed inputs to remain in business. That's meant producing more bushels (higher inputs, rapid investment in technology, and advancements in plant varieties via research) on the same land or

increasing the land base available for production. Another option has been to reduce the cost per unit of production, which has meant "living off depreciation" or reducing paid labor or exchanging one practice (i.e., tillage) for another (i.e., pesticides). Since there is no new farm land being created, expansion of the farm base has meant acquiring the rights to farm on another's existing lands, resulting in fewer, but larger farms across the Columbia Plateau.

It is fully anticipated that trend will continue. Another trend expected to continue is the increasing average age of the farmer. The land and equipment resources needed for production have become so great and the purchasing power of a bushel of wheat so low, that entry into the wheat farming business has become increasingly difficult. This is especially true for the young farmer who has not had the time to acquire the level of wealth required to enter the industry. The cost-price squeeze has even increased the difficulty for a family member to assume managing control on a family farm because the farm may not be of sufficient size to support two families during the transition stage.

It is for these reasons that we predict the need to continue updating the wheat production and marketing study. The face of the industry has changed dramatically over the past 2 decades, a trend also likely to continue. Anticipated changes in government farm policy and the move toward free market production will have a dramatic impact on wheat farming, making the need for understanding of costs of doing business even more critical.

A wise man once told a group of farmers that they didn't have to adopt any of the new technology or science in order to continue to farm, but...they would be competing in the market with those who had. Knowing one's costs is critical to competing successfully.

Acknowledgments

In conducting this study over the past 2 decades, we have called on innumerable sources of expertise across the state. This summary report is an appropriate time to once again recognize those whose contributions have made it possible.

Annually, we collect cost data from equipment dealers, ag lenders, grain warehouse managers, seed, fuel and pesticide dealers. Not once has any of those contacted refused to share their prices, even though they are in a very competitive market situation. Without their willing cooperation, we could never have collected the data to even begin, let alone continue, a study of this complexity.

Once the report is written, it is reviewed by a number of specialists from Oregon State University with expertise in agronomy, ag economics, and publishing. Over 2 decades, no fewer than 14 county ag Extension agents have also contributed. Their professional inputs have been important in keeping the study useful.

But there's another level of review that has been absolutely critical to the success of the study. That's the support from the wheat farmers themselves. Each year, a group is invited to appraise the draft. They have commented, questioned, challenged, and applauded the figures within. Appropriate adjustments have been made so that the study can accurately reflect the "typical" wheat farm on Oregon's Columbia Plateau.

To each of those who have made this report possible, we extend our deepest and most sincere gratitude.

APPENDIX A

The Study Area...

The Mid-Columbia Plateau in Oregon consists of the dryland wheat producing areas of Wasco, Sherman, Gilliam, Morrow, and parts of western Umatilla counties. These counties accounted for nearly 68 percent of the state's total wheat production over the past 2 years.

With a total dollar value of \$234,320,000, wheat ranked fourth in Oregon's 1994 list of top agricultural commodities. Wheat also was the most widely produced crop in the Columbia Plateau, with 698,800 acres producing a crop valued at \$156,367,000.

This dryland wheat producing area is characterized by low annual precipitation (10-14 inches), most of which falls from November through February. Because of the low rainfall, producers produce a crop on only half their acres each year, leaving the other half fallow. This "summer fallow"-crop rotation allows a producer to grow a crop on the collective moisture of 2 years. Conservation tillage practices allow the grower to prepare the seedbed, control weeds, and store about 42 percent of the annual precipitation in the soil during the fallow season for the next year's crop production.

Cost data was collected from all parts of the study area, but in some examples only data from Sherman County was used.

Sherman County is unique in that it is

heavily reliant on wheat production.

Farm statistical data from Sherman County have fewer influences from other agricultural enterprises than any other county in the study area.

CRP Acres Affect Area Average Yields

The Conservation Reserve Program (CRP) was created in the 1985 National Farm Bill in order to control national production of selected annual crops while reducing the crop carryover and protecting the natural resource base from erosion. Farmers were allowed to bid a rent value, which if accepted by the USDA, would allow them to retire highly erodible lands from production for the rental price. The grower had to establish a protective, permanent grass cover on those lands. CRP contracts were for a 10-year period.

Due to the rental payment cap established by the program, most of the lands retired under the Conservation Reserve Program were the lower yielding lands in a given county. Removing the least productive lands from a county automatically improved the county average yield.

No more than 25 percent of the annual crop producing acres in a county could be bid into CRP participation. Sherman, Gilliam, and Morrow counties reached their 25 percent cap. CRP enrollment levels for the Columbia Plateau are shown in Table 3.

Table 3. Conservation Reserve Program (CRP) Signup Periods & Acreages.*

Year	Wasco	Sherman	Gilliam	Morrow	Umatilla
1986	40,587	57,077	35,576	71,776	44,090
1987	9,622	15,883**	17,839	31,352	34,567
1988	1,279	-----	1,504**	113	10,771
1989	333	-----	-----	1,291**	2,174
1990	----- NO CRP BIDDING PERIODS -----				
1991	3,369	-----	-----	-----	5,900
1992	632	-----	-----	-----	2,071
1993	----- NO CRP BIDDING PERIODS -----				
Total	55,823	72,960	67,821	110,988	99,573

* 12 bidding/sign-up periods have been offered by USDA since the CRP inception.

** County's 25 percent enrollment figure reached.

Figure 1. Average Farm Size for All Farms: Sherman County
USDA Census of Agriculture Data

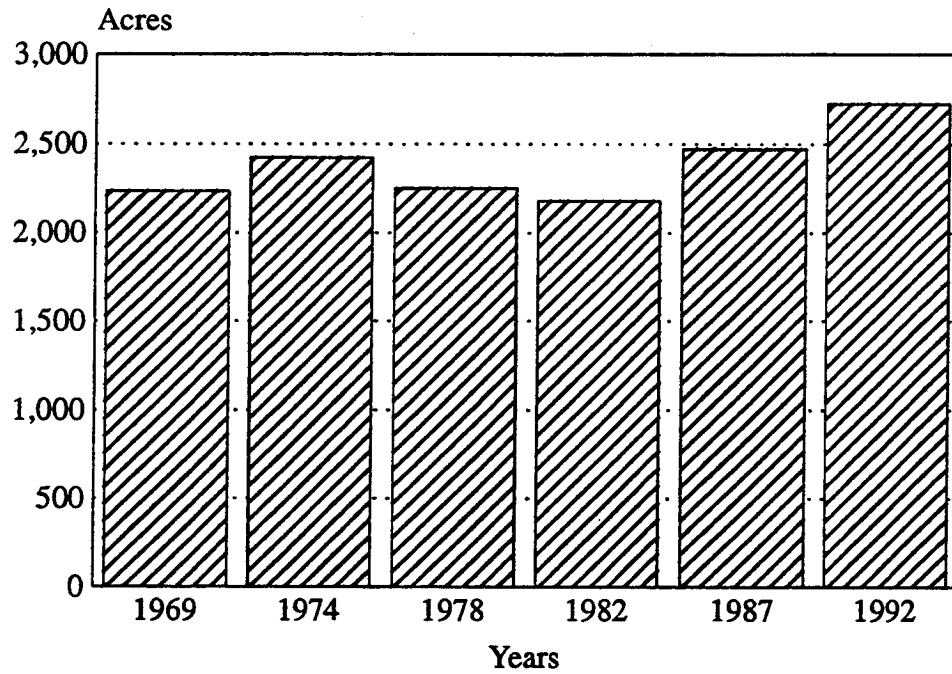


Figure 2. Total Cropland per Farm for All Farms: Sherman County
USDA Census of Agriculture Data

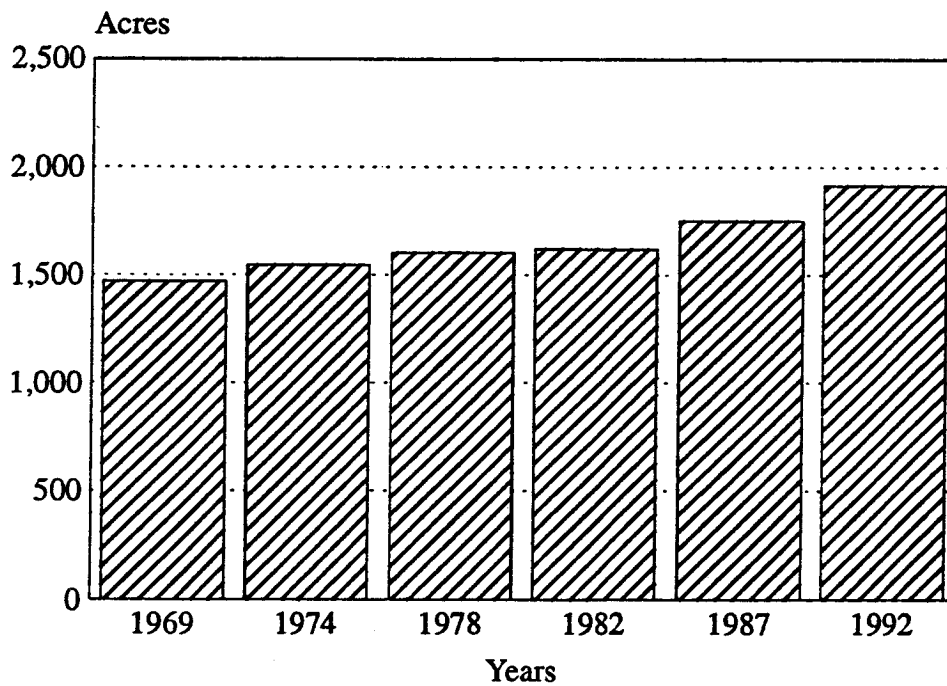


Figure 3. Value of Mach. & Equip. per Farm: Sherman County
 USDA Census of Agriculture Data

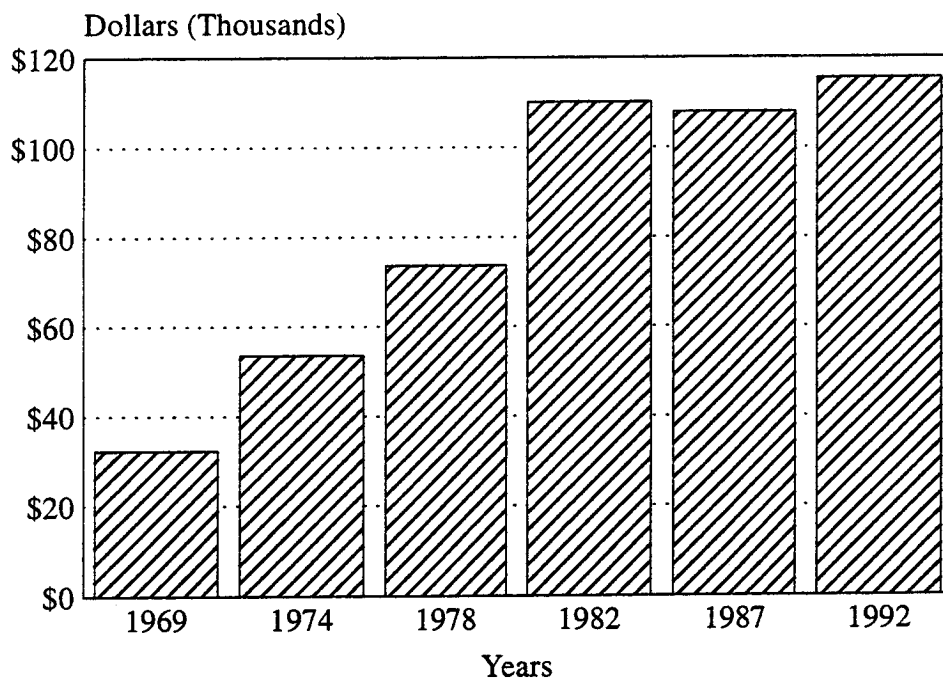


Figure 4. Dryland Wheat Variable Costs and Total Costs
 Estimated Costs from OSU Wheat Cost Studies, 1974-1994.

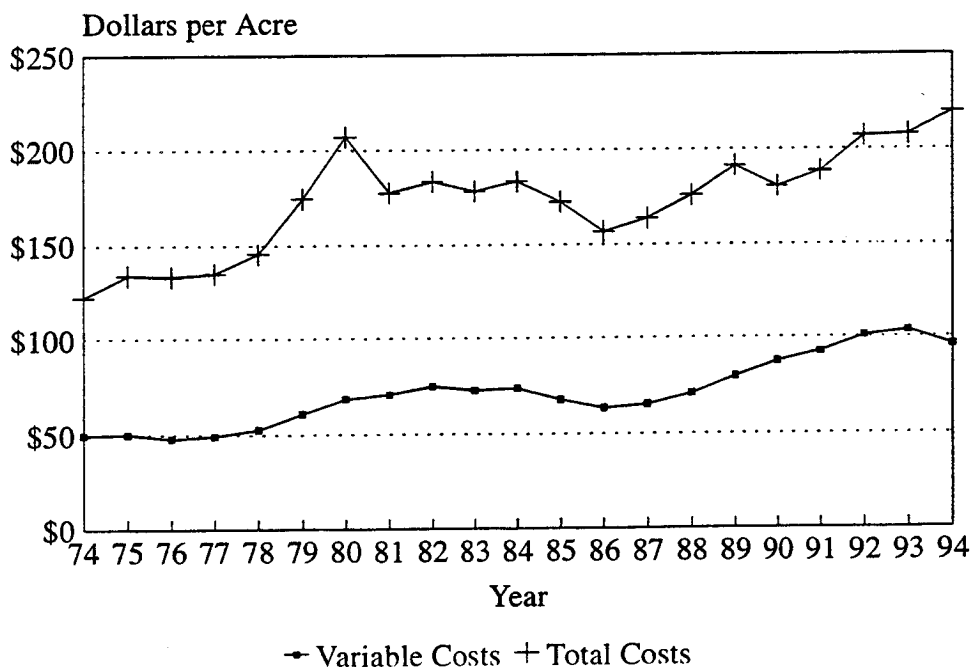


Figure 5. Sherman County Yield per Acre and 10 Year Averages
Oregon County and State Agricultural Estimates, OSUES

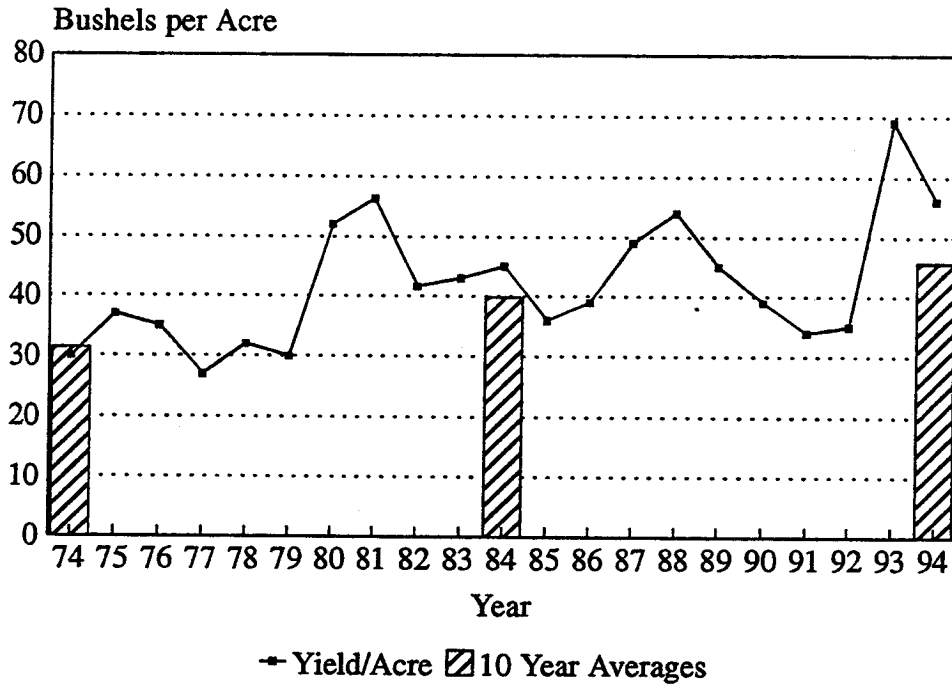
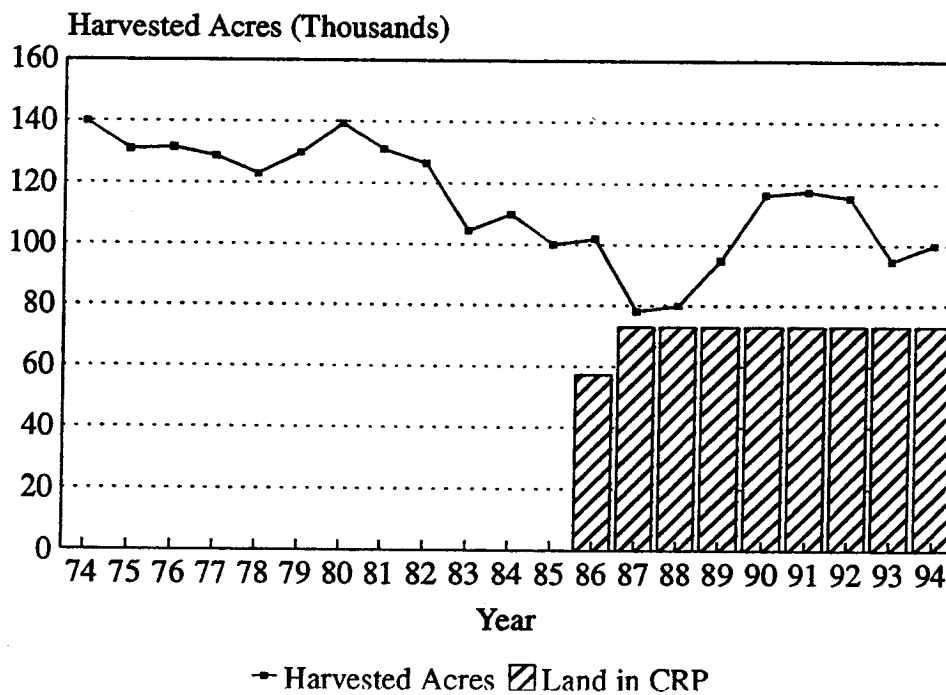


Figure 6. Sherman County Harvested Wheat Acres and Land in CRP
Oregon County and State Agricultural Estimates, OSUES



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