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Certified Potato Production Costs

(Growing and Harvesting Costs Only)

Nebraska

1935

Nebraska
COOPERATIVE EXTENSION WORK
IN AGRICULTURE AND HOME ECONOMICS
U. of N. Agr. College & U. S. Dept. of Agr. Cooperating
W. H. Brokaw, Director, Lincoln

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ACKNOWLEDGEMENT

This study is being carried on cooperatively by the Nebraska Certified Potato Growers' Association and the Nebraska College of Agriculture. The records were kept by individual members of the Association and submitted for analysis and study.

The Association secured individual cooperators, placed blanks, gave assistance in their collection, and gave general encouragement to the work.

The Extension Service and the Department of Rural Economics of the Nebraska College of Agriculture cooperated in preparing and furnishing blank forms, in assisting in the collection of the records, in tabulating and summarizing the data, and in preparing this report.
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CERTIFIED POTATO PRODUCTION COSTS, NEBRASKA, 1935
GROWING AND HARVESTING COSTS ONLY

Arthur G. George

This circular is a report on potato production costs based upon 41 growers' records in 1935. The records covered only the period for growing and harvesting the crop. A later report on storage and marketing costs covering this crop is contemplated. The records were submitted by growers of certified seed potatoes in the Panhandle section of Northwestern Nebraska.

This project is being conducted in cooperation with the Nebraska Certified Potato Growers' Association. The work was started a few years ago and it is intended to continue it for several years in order that results over a period of years may be studied. Individual cooperators are secured by the Association officers and blanks are given them on which to record the cost data. The completed records are collected in the fall by personal visits of a representative of the College of Agriculture in company with a representative of the Association. The completed records are sent to the Department of Rural Economics of the College of Agriculture where they are summarized and analyzed and a report made.

For purposes of summarization and analysis the records for 1935 have been divided into three groups in conformity with different conditions existing for different potato growers and with different practices followed by them. The first group is made up of 17 records from dry land farms where it is customary to pay cash rent for rented potato ground. The data from these records appear in Table 1. The second group is made up of 13 records from dry land farms where potato land is rented on a share basis. The summary for these records is found in Table 2. The third group is made up of 11 records from irrigated land. Share rental is the customary basis on which land is rented in this area. Data for these records appear in Table 3. Each cooperator will receive a copy of this report with his own figures typed in the column headed "your farm" in the table which fits his situation.

Each table shows average figures per acre for the group considered for these items: (1) hours of man labor used up to harvest, those for harvesting and the charges for such labor; (2) hours of horse, tractor, and truck power used up to harvest and for harvest (3) power costs for growing and for harvesting (4) equipment costs for both growing and harvesting; (5) seed costs; (6) certification costs; (7) costs of sacks; (8) hauling costs; (9) total costs; and (10) yields. Each table also gives the average potato acreage and average costs per bushel. In addition, Table 1 shows a cash rent charge and Tables 2 and 3 show tenant yields. Table 1 also shows average figures for both the one-third of the cooperators who had the lowest bushel costs and for the one-third who had the highest bushel costs. Similar data are not given in Tables 2 and 3 because of the small number of records included in each of these tables.

Certain charges have been made on a flat rate basis according to the scale shown below. All other charges have been made at rates given by the cooperators. No land charges were included in the acre costs except where cash rent was figured in Table 1. Bushel costs in Tables 2 and 3 include indirectly a charge for land use since all costs other than for land use were charged to the tenant yields. Since the acre costs in Table 1 include cash rent charges, they are not comparable with the acre costs shown in Tables 2 and 3.

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Scale of charges:

Labor	
Unpaid and regular hired help	$ .20 per hour
Day labor	Wages actually paid
Board for day labor	$ .75 per day
Power	
Horse power	.09 per horse hour
Tractor power	
2-plow size	.65 per hour
3-plow size	1.00 per hour
Equipment	
Horse drawn	.035 per horse hour
Tractor drawn	
2-plow size	.14 per hour
3-plow size	.21 per hour
Hauling (if with truck)	.015 per bushel

Where hauling was done with horses it was charged according to the rates shown above for horse power and equipment.

FACTORS AFFECTING POTATO PRODUCTION COSTS

Dry land potatoes (Cash rent basis)

The data for the 17 records coming under this classification are shown in Table 1. The average cost of potato production for this group was 27 cents per bushel, the average yield per acre was 88.2 bushels and the average cost per acre was $23.61. The average cost per acre up to harvest was $13.57, the cost per acre for harvesting was $7.85 and the cash rent charge was $2.19 per acre. Slightly more than one-fourth of the cost per acre was the charge for man labor which made up $6.97 of the total average cost per acre. The average power cost per acre was $3.54. The seed cost was the largest item of expense and amounted to $7.53 per acre. The charges for labor, power, seed and rent made up practically 86 per cent of the total cost.

The six low-cost producers of this group produced potatoes at an average cost of 21 cents per bushel. Their average cost per acre was $21.60 and their average yield per acre was 103.2 bushels. The six high-cost producers with an average acre cost of $24.71 and an average yield of 66.7 bushels per acre, produced potatoes at an average cost of 37 cents per bushel. The items of expense for the two groups in the main were not essentially different, except for seed costs. The harvesting costs were lower for the high-cost farms than for the low-cost farms, which is partially explained by the lower yield of the former. The cash rent charge was somewhat higher for the high-cost group. With a difference of only $3.11 in the acre costs of the two groups it is apparent that the lower yield of the high-cost farms accounted for the greater part of the difference in their costs per bushel.

An examination of the individual records shows that the man hours of labor used up to harvest ranged from a low of 6.01 hours per acre to a high of 16.63 hours per acre. In the former situation a much larger acreage and the almost exclusive use of tractor power were the chief reasons for the use of less man labor per acre. The range in man hours for harvesting was from a low of 10.27 hours per acre to a high of 27.04 hours per acre. The yield per acre for the latter was one-half more than that of the former which would account for a large part of this difference. The power costs per acre up to harvest ranged from $1.70 to $3.57 and for harvest from 53 cents to

$1.62. The low cost per acre was $18.91 and the high, $39.49. Yields per acre ranged from 37.8 bushels to 125.0 bushels and the costs per bushel from 19 cents to 55 cents.

Dry Land Potatoes (Share Rent Basis)

The summary of 13 records from dry land farms, where potato rentals have been computed on a share rent basis, is given in Table 2. The table shows that the average cost per bushel to produce potatoes was 31 cents. The cost per acre, exclusive of land charges, was $25.03. The growers of this group did not harvest all the acreage seeded to potatoes. The abandonment, however, was small, being only eight-tenths of an acre per farm, on the average. This small loss would add somewhat to the cost per bushel since the costs incurred on the abandoned land are charged to the potatoes actually harvested. This condition introduces an element of cost that is not found in the other two groups, the data for which appear in Tables 1 and 3. The average yield per acre for this group was 102.1 bushels with a tenant yield of 79.8 bushels. The hours of man labor used per acre up to harvest were 11.97 hours and the charge for this labor was $2.58. The labor used per acre for harvest was 17.18 hours, the charge for which was $5.15. The power cost per acre up to harvest was $2.60 and for harvest, $1.06. The power charge includes the charges for use of horses, tractors and trucks. The average seed cost per acre was $9.99. The average cost per acre up to harvest was $16.74 based on the seeded acres, and $17.07 when based on the acres harvested. The harvesting cost per acre averaged $7.96. The records disclose a range in costs per bushel from 24 cents to 68 cents and in acre costs from $20.25 to $32.36. The spread in the amount of labor used per acre up to harvest was from 6.80 hours to 26.12 hours and for harvest from 10.50 hours to 28.65 hours. The range in labor costs per acre up to harvest was from $1.37 to $5.22 and for harvest from $1.98 to $8.43. The least number of bushels of seed used per acre was 7 bushels and the greatest number used was 12 bushels. The average yield, where 7 bushels of seed was planted, was 100 bushels, and where 12 bushels of seed was used one grower had a yield of 90 bushels per acre and another had a 60-bushel yield. The high yield per acre was 147 bushels where 10 bushels of seed was used and the farm having the low yield, 48 bushels per acre, used 8.6 bushels of seed per acre. The records show that in general those growers having the higher yields had lower costs per bushel, but bushel costs did not vary directly with yields.

Irrigated Potatoes

Eleven growers of potatoes on irrigated land submitted records which are summarized in Table 3. These growers produced potatoes at an average cost of 22 cents per bushel. Their average acre cost, exclusive of land charges, was $46.41. The average yield per acre for these eleven growers was 291.4 bushels and the average tenant yield, 213.2 bushels per acre. The low bushel cost was 19 cents and the high was 37 cents. The range in costs per acre was from $30.70 to $66.82. The use of smaller machinery, more intensive working of the ground and greater production were among the more important factors contributing to the higher acre cost on the one farm over that of the other. The average number of hours of labor used up to harvest was 35.50 hours and for harvest, 36.74 hours. The charges for these items of labor were $7.21 and $10.74 respectively. The range in man hours used per acre up to harvest was from 23.12 hours to 58.80 hours, and for harvest, from 10.85 hours to 53.33 hours. The low charge for man labor per acre up to harvest was $4.44 and the high, $11.76; for harvest the low was $3.79 and the high, $16.98.

The average power cost per acre up to harvest was $6.10 and for harvest $1.34. The low power cost per acre up to harvest among these records was $2.70 and the high was $10.18. For harvest the power costs per acre ranged from the low of 78 cents to the high of $2.01. The average seed cost per acre was $14.08 and the average number of bushels planted per acre was 17.6 bushels. The range in the number of bushels planted per acre was from a low of 10 bushels to a high of 35.3 bushels. The grower who used only 10 bushels of seed per acre had the lowest yield per acre but the highest yield per acre was produced by a grower who used slightly less than 17 bushels of seed per acre. The higher yields were obtained by growers who used from 17 to 20 bushels of seed per acre but high yields did not follow in all cases where this amount of seed was used.

CONCLUSION

No definite and specific conclusions can be drawn from the data shown in the three tables as to the causes of differences in production costs per bushel aside from the influence of yields. The effect of yields cannot be fixed definitely but its importance as a factor in determining costs per bushel is apparent.

Other factors concerning which more data are needed are the effect of the amount of seed planted per acre, the degree to which intensive work should be carried on and possibly other factors of less importance. The project will be continued to get more information on these influences.

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TABLE 1. Cost of producing potatoes, Nebraska, 1935. (non irrigated) (cash rent)

	Your Farm	Average of 17 Farms	Average of 6 Low-cost Farms	Average of 6 High-cost Farms
NUMBER OF FARMS		17	6	6
LABOR AND POWER PER ACRE: HOURS				
To Harvest				
Man		9.09	9.49	11.81
Horse*		13- 6.57	4- 7.23	4-12.84
Tractor		2.43	2.84	1.93
Harvest				
Man		16.02	15.95	16.23
Horse*		5-10.08	1-13.50	3-12.64
Tractor		.94	1.35	.71
Truck		1.64	1.18	1.46
GROWING COSTS PER ACRE				
Man labor		$ 1.84	$ 1.87	$ 2.36
Power		2.61	2.52	2.38
Equipment		.64	.60	.63
Seed		7.53	6.11	9.11
Certification		.95	.70	1.00
Total		$13.57	$11.80	$15.48
HARVESTING COSTS PER ACRE				
Man Labor		$ 5.13	$ 4.76	$ 4.23
Power		.93	1.00	.83
Equipment		.22	.22	.23
Sacks		.29	.25	.36
Hauling		1.28	1.48	.90
Total		$ 7.85	$ 7.71	$ 6.55
LAND CHARGES PER ACRE		$ 2.19	$ 2.09	$ 2.68
Total Cost per Acre		23.61	21.60	24.71
NUMBER OF ACRES		45.8	21.7	35.5
YIELD PER ACRE: BUSHELS		88.2	103.2	66.7
COST PER BUSHEL		$ .27	$ .21	$ .37

* First number in column indicates number of farms on which horses were used; second number indicates average number of hours per acre horses were used on these farms.

TABLE 2. Cost of producing potatoes, Nebraska, 1935 (non-irrigated) (crop share).

	Your Farm	Average of 13 Farms
NUMBER OF FARMS		13
LABOR AND POWER PER ACRE: HOURS		
To Harvest		
Man		11.97
Horse*		6-12.62
Tractor		2.70
Harvest		
Man		17.18
Horse*		4- 6.48
Tractor		1.17
Truck**		11- 1.66
GROWING COSTS PER ACRE		
Man Labor		$ 2.58
Power		2.60
Equipment		.62
Seed		9.99
Certification		.95
Total (Based on acres seeded)		16.74
Total (Based on acres harvested)		17.07
HARVESTING COSTS PER ACRE		
Man Labor		5.15
Power		1.06
Equipment		.24
Sacks		.28
Hauling		1.23
Total		7.96
Total Cost per Acre (Based on acres harvested)***		25.03
NUMBER OF ACRES SEEDED		39.1
NUMBER OF ACRES HARVESTED		38.3
YIELD PER ACRE: BUSHELS		
Total Yield		102.1
Tenant Yield		79.8
COST PER BUSHEL***		$ .31

* First number in column indicates number of farms on which ~~tractors~~ Horses were used; second number indicates average number of hours per acre horses were used on these farms.

** First number in column indicates number of farms on which trucks were used; second number indicates average number of hours per acre trucks were used on these farms.

***Cost per acre does not include a charge for the use of land while cost per bushel does include such a charge.

TABLE 3. Cost of producing potatoes, Nebraska, 1935 (irrigated) (crop share).

	Your Farm	Average of 11 Farms
NUMBER OF FARMS		11
LABOR AND POWER PER ACRE: HOURS		
To Harvest		
Man		35.50
Horse		34.83
Tractor*		7- 2.78
Truck**		2- 4.57
Harvest		
Man		36.74
Horse		7.90
Tractor*		5- 1.98
Truck**		9- 2.62
GROWING COSTS PER ACRE		
Man Labor		$ 7.21
Power		6.10
Equipment		1.52
Seed		14.08
Certification		.34
Total		29.25
HARVESTING COSTS PER ACRE		
Man Labor		10.74
Power		1.34
Equipment		.40
Sacks		.51
Hauling		4.17
Total		17.16
Total Cost per Acre***		46.41
NUMBER OF ACRES		25.2
YIELD PER ACRE: BUSHELS		
Total Yield		291.4
Tenant Yield		213.2
COST PER BUSHEL***		$ .22

* First number in column indicates number of farms on which tractors were used; second number indicates average number of hours per acre tractors were used on these farms.

** First number in column indicates number of farms on which trucks were used; second number indicates average number of hours per acre trucks were used on these farms.

***Cost per acre does not include a charge for the use of land while cost per bushel does include such a charge.