University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Historical Materials from University of Nebraska-Lincoln Extension

Extension

3-1947

EC880 Revised 1947 Cost of Operating Beet Harvesting Machinery in Nebraska 1946

F. J. Chase

G. R. Abbenhaus

Follow this and additional works at: http://digitalcommons.unl.edu/extensionhist

Chase, F. J. and Abbenhaus, G. R., "EC880 Revised 1947 Cost of Operating Beet Harvesting Machinery in Nebraska 1946" (1947). *Historical Materials from University of Nebraska-Lincoln Extension*. 2335.
http://digitalcommons.unl.edu/extensionhist/2335

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

COLLEGE OF AGRICULTURE
LIBRARY
LINCOLN NEBRASKA
AGRI
S
85
E7
#880

Revised
March
1947

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

Extension
Circular
880 -47

RECEIVED
MAR 17 1950
COLLEGE OF AGRICULTURE
LIBRARY

E.C. #880 -47

COST OF OPERATING

BEET HARVESTING MACHINERY

IN NEBRASKA

1946

F. J. Chase, Extension Economist, Farm Management
G. R. Abbenhaus, Dept. of Rural Economics

This is the second annual report on the cost of operating beet harvesting machinery. The basic data was collected in cooperation with the Agricultural Extension agents in six Nebraska counties. The summary was prepared in the department of Rural Economics.

c.1

COST OF OPERATING BEET HARVESTING MACHINERY
NEBRASKA, 1946

Labor shortages during the past few years have brought a rapid increase in the use of mechanical beet harvesting machinery in Nebraska. Reports from the beet producing area indicate that one hundred or more mechanical harvesters were used in 1945, and new machines were purchased as fast as they became available during 1946. Farm operators and processors are vitally interested in the cost of operating these machines. For this reason the Agricultural Experiment Station and the Extension Service have made an attempt to obtain figures on representative operating costs.

The data presented in this study was obtained from farmers in Cheyenne, Dawson, Hitchcock, Morrill, Red Willow and Scottsbluff Counties where operating conditions are believed to be representative of those found on most farms where sugar beets are grown.

As presented in Table 1, the average cost of using a mechanical beet harvester on 22 farms was $5.98 an acre and the cost of using a loader was $1.67 an acre. The average yield for the 22 farms where the mechanical harvesters were used was 14.3 tons per acre. The costs per acre include depreciation, repairs and repairing lubricants, shelter, interest, insurance, and taxes. They do not include wages for the operator or power to pull the machines.

The 1946 costs represent an increase of $1.12 per acre for the use of the harvester over the 1945 costs. The original cost of machines increased during the year as well as the cost of the other expense items.

Table 1. Representative costs of using a mechanical beet harvester and a mechanical beet loader in Nebraska, 1946.

	Beet Harvester	Beet Loader
Number of records	22	23
Average cost of machines	$907	$685
Average years of life (estimated by the users)	5.1	9.4
Annual use		
Average acres	59.0	75.3
Average hours	184.0	91.6
Average tons	846.4	1,017.9
Annual Costs		
Depreciation	$194.65	$ 74.42
Repairs, Repairing and lubricants	125.65	26.86
Shelter, interest, insurance, taxes	32.29	24.43
Total	$352.59	$125.71
Unit Costs		
Per Acre	$ 5.98	$ 1.67
Per hours	1.92	1.37
Per ton	.42	.12

31083jc-3/47

Tractor power was charged at the rated drawbar horsepower rate for each type of tractor used. It is assumed that all of the tractors pulling beet harvesters and beet loaders used gas which was charged at a standard price of 14 cents a gallon.

With power charges added and wages for one man at $1.00 per hour included, the average cost of harvesting beets, yielding an average of 14.3 tons per acre, with a machine was $12.04 an acre or $3.74 an hour. The cost of loading beets with a mechanical loader was $3.72 an acre or $3.01 an hour.

Table 2. Cost per acre of harvesting and loading sugar beets yielding 14.3 tons with mechanical equipment in 1946.

	Beet Harvester	Beet Loader
Number of records	22	23
Average annual use		
Acres	59.0	75.3
Hours	184.0	91.6
Tons	846.4	1,017.9
Acres per hour	.3	.8
Cost per acre		
Use of machine	$ 5.98	$ 1.67
Tractor power	2.73	.80
Labor (one man @ $1.00 per hour)	3.33	1.25
Total	$12.04	$ 3.72
Cost per ton	$ 0.84	$ 0.26
Cost per hour		
Use of machine	$ 1.92	$ 1.37
Tractor power *	.82	.64
Labor (one man)	1.00	1.00
Total	$ 3.74	$ 3.01

* Frank Miller, W. L. Ruden, and C. W. Smith. Cost of Tractor Power on Nebraska Farms, Nebraska Experiment Station Bulletin 324. The power costs were calculated from basic data in this bulletin.

31083jc-3/47

A comparison of average costs when different methods of harvesting beets were used is presented in Table 3. The total cost of harvesting and loading beets with machines was $15.76 an acre or $1.10 a ton. The cost of mechanical harvesting and hand loading was $19.19 an acre or $1.34 a ton. If the crop was harvested by hand and loaded on a truck with a machine, the average cost was $26.88 an acre or $1.88 a ton. The cost of hand topping and hand loading was $30.31 an acre or $2.12 a ton. From these comparisons it appears that the use of mechanical equipment will result in substantial savings for sugar beet growers.

Table 3. Cost of harvesting and loading sugar beets yielding an average of 14.3 tons per acre by various methods, 1946.

Item	Harvesting & loading with machine	Harvesting with machine loading by hand	Harvesting by hand, loading with machine	Harvesting & loading by hand
Cost per acre				
Use of harvester	$ 5.98	$ 5.98		
Tractor power	2.73	2.73		
Wages of operator	3.33	3.33		
Use of loader	1.67		$ 1.67	
Tractor power	.80		.80	
Wages of Operator	1.25		1.25	
Use of puller (2 row)			.37	$ 0.37
Tractor power			.80	.80
Wages of Operator			1.25	1.25
Wages for hand topping*			20.74	20.74
Wages for hand loading*		7.15		7.15
Total	$15.76	$19.19	$26.88	$30.31
Cost per ton	$ 1.10	$ 1.34	$ 1.88	$ 2.12

* Hand topping was charged at $1.45 a ton and hand loading at 50 cents a ton.

In Table 3, the costs were figured on the basis of 14.3 tons per acre yield. This represents the actual average yield for the 22 farms where records on mechanical harvesters and loaders were obtained. The wages for the operator of each machine were calculated at $1.00 an hour. Wages for hand topping were charged at $1.45 a ton which was representative of the rate paid for this work in 1946. Hand loading was charged at 50 cents a ton.

In 1946, a machine that harvests and loads the beets in a single operation came into use in Nebraska. Cost information was obtained on four of these harvesters. The data is presented in Tables 4 and 5. The number of records is too small to give reliable operating costs. For this reason no comparisons should be made between the costs of using the two types of machines. An effort will be made to obtain more records as machines of this type increase in number.

Table 4. Costs of using a machine that is a beet harvester and loader combined, 1946.

	Beet harvester and loader
Number of records	4
Average cost	$2,488.
Average years of life (Estimated by the users)	8.5
Annual use	
Average acres	51.25
Average hours	196
Average tons	660
Annual Costs	
Depreciation	$ 320.74
Repairs and lubricants	71.98
Shelter, interest, insurance and taxes	88.96
Total	$ 481.68
Unit Costs	
Per acre	$ 9.40
Per hour	2.46
Per ton	.73

Table 5. Cost per acre of harvesting and loading sugar beets yielding 12.9 tons per acre with a single machine designed to do both operations, 1946.

	Beet harvester and loader
Number of records	4
Average annual use	
Acres	51.25
Hours	196.
Acres per hour	.26
Cost per acre	
Use of machine	$ 9.40
Tractor power *	3.96
Labor (one man @ $1.00 per hour)	3.85
Total	$17.21
Cost per ton	$ 1.33
Cost per hour	
Use of machine	$ 2.46
Tractor power *	1.03
Labor (one man)	1.00
Total	$ 4.49

* Frank Miller, W. L. Ruden, and C. W. Smith, Cost of Tractor Power on Nebraska Farms, Nebraska Experiment Station Bulletin 324. The power costs were calculated from basic data in this bulletin.

31083jc-3/47