COST OF BINDWEED ERADICATION BY THE TILLAGE METHOD¹

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It has been definitely established that field bindweed (Convolvulus arvensis L.) can be eradicated by clean cultivation under Nebraska conditions. Information on the cost of this method is meager, however. It is the purpose of this paper to present an analysis of the cost data of actual eradication operations conducted on a field-size scale in two Nebraska counties, Lancaster and York, during the period 1935 to 1937. Since the two investigations differed as to time and locality separate accounts will be given.

TESTS IN LANCASTER COUNTY

The studies in Lancaster County were made in seven fields in 1935 and 1936. The soils were of the Waukesha and Wabash series, ranging from silt loam to clay loam. All fields were summer tilled for two years. They varied in area from 1.5 to 6.1 acres. Their initial infestation with bindweed varied from medium to heavy and had been established for not less than five years.

In preparation of the fields for cultivation, all rubbish and excess plant growth were removed or burned and where necessary the fields were plowed. The cost of original plowing was excluded from all computations in the Lancaster County fields. In the tillage operations a 10–20 tractor, a duckfoot cultivator of 7½ feet width, and a student operator were employed. The duckfoot cultivator was run at a depth of 3 to 4 inches and at intervals when the plants had made a growth of 4 or 5 inches.

The extent of growth permitted following the emergence of plants was based on the findings of Kiesselbach, Petersen, and Burr.³ As early as 1924, these workers found that the number of necessary tillage operations could be reduced by permitting slight growth of the plants. Frequent tests were made to see that all plants were severed below ground. Sharp and liberally over-lapping shovels were found effective in preventing the survival of any of the shoots following each tillage.

Accurate and complete records were kept on all operations and results connected with the eradication process. The percentage of reduction of the infestation on the fields was not based on actual counts but on visual estimates, because numbers or counts do not

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