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The Occurrence of the Potato Tuber Worm in Nebraska¹

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A sample of potatoes showing tuber worm injury was submitted to the Entomology Department by a farmer of Elmwood (Cass County), Nebraska in September 1939. A few days later the farm was visited and a bin of about 125 bushels of potatoes was found to be heavily infested with the potato tuber worm. In compliance with instructions, the grower either used or destroyed the entire crop during the early part of the ensuing winter. Potato fields in the same vicinity were examined the following year, but no specimens or evidence of injury by this pest could be found. Apparently, this is the first record of the potato tuber worm, *Gnorimoschema operculella* (Zell.), in Nebraska.

In August, 1940 potato tuber worm larvae were collected in small numbers, both in growing plants

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and later in cull tubers left in the field, near Lincoln (Lancaster County), Nebraska. Although the same area was planted in potatoes the following year (1941), there was no evidence of tuber worm injury.

The exact source could not be ascertained, but on the basis of available information it seems evident that the seed stock for the above fields was obtained by local wholesale dealers from outside the state.

In the spring of 1942 the Department of Entomology in cooperation with the U. S. Bureau of Entomology and Plant Quarantine began a potato tuber worm survey of Nebraska. During the growing season of this year (1942) from 100 to 300 plants were examined in each of about 75 different fields of potatoes, more than half of which were in the seed producing area of western Nebraska. Also, large numbers of other Solanaceous plants, including egg-plant (*Solanum melongena*), buffalo bur (*S. rostratum*), horse nettle (*S. carolinense*), and several species of nightshade (*Physalis* spp.) were examined. The potato tuber worm was found in small numbers on growing potato plants in four localities; namely, Lincoln (Lancaster County), North Platte (Lincoln County), Kearney and Gibbon (Buffalo County), and Alliance (Box Butte County). At Alliance only two specimens were found, although extensive searches were made both during the growing season and following harvest, and at North Platte only a single specimen was found.

Seed potatoes in eastern Nebraska, where commercial plantings are relatively small, are obtained to a large extent from outside sources. In central Nebraska a considerable proportion of the seed stock also is obtained from other states; and except for a short interval during and immediately following harvest, a large proportion of the table stock in each of these localities is obtained from other areas. In western Nebraska seed stock is entirely of local origin except possibly for occasional isolated instances, and table stock is largely home grown, but there is sufficient importation of the latter to easily account for the single isolated infestation found here. These records along with certain observations suggest that the tuber worm infestations have resulted from seasonal importation, especially in the western commercial seed producing area. This probability is given further support by the fact that the tuber worm previously has been taken in a number of other mid-western states, including North Dakota, South Dakota, Minnesota, Iowa and Colorado, but apparently has not become established.—11-30-42.

LITERATURE CITED

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1941. Records of distribution of the potato tuber worm (*Gnorimoschema operculella*, Zell.) in the United States. Insect Pest Survey 21 (Supplement to No. 9).
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