

# Beet-Leafhopper Populations on Various Types of Russian-Thistle Stands

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## Abstract

Studies on small plots, 50 by 50 feet in size, were made near Berger, Idaho, in 1940 and 1941 to determine the ability of the beet leafhopper (*Eutettix tenellus* [Baker]) to reproduce on pure Russian-thistle growing in (1) dense, (2) medium-dense, (3) medium, or (4) sparse stands, as compared to that of medium-dense Russian-thistle mixed with sparse downy chess, medium-dense Russian-thistle mixed with medium-dense downy chess, or sparse Russian-thistle mixed with dense downy chess.

Quantitative collections taken at weekly intervals with the sampling fork from June to September, inclusive, revealed that the highest average populations of beet-leafhopper nymphs were produced on pure stands of medium-dense Russian-thistle in 1940 and on pure medium stands in 1941. The lowest populations found on pure Russian-thistle were produced on the sparse stands. Medium-dense Russian-thistle mixed with sparse downy chess produced decidedly higher populations than either medium-dense Russian-thistle mixed with medium-dense downy chess or sparse Russian-thistle mixed with dense downy chess. It was found, however, that any one of the pure stands of Russian-thistle produced higher populations than any of the mixtures. This was true in both seasons, even though the populations found on the pure stands were 8.5 times as great, and those produced on the mixed stands were 7.9 times as great in 1940 as they were in 1941.

It is tentatively concluded from these limited data that all pure stands of Russian-thistle can produce large numbers of beet leafhoppers, but that in the majority of cases the only mixed stands capable of producing a sufficient number of these insects to be economically important are those in which Russian-thistle is abundant and downy chess is sparse. Under the conditions of this experiment, increased densities of downy chess in the mixed stands resulted in marked decreases in the production of beet leafhoppers.

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