

Lygus Damage to Beet Seed in Varying Stages of Development¹

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(Abstract)

EARLIER FIELD-CAGE WORK (1, 2)² by the senior author showed that various species of *Lygus* (*L. oblineatus* Say, *L. hesperus* Knight, and *L. elisus* Van Duzee) were responsible for the production of nonviable sugar beet seed. In that work *Lygus* bugs were engaged on sugar beets in the early reproductive stages (flower bud or early bloom) and allowed to remain on the plants until the seed matured. There was, therefore, no evidence of the stage of development of beet seed between flower bud and maturity, during which *Lygus* damage occurred. Further studies are in progress to determine more accurately the stage of development of beet seed most susceptible to injury from *Lygus*. These studies to date (1947) have been conducted in field cages of sufficient size to enclose the entire inflorescence of one beet-seed plant. *Lygus* bugs were introduced onto the engaged plants in varying stages of plant development, allowed to remain 1 or 2 weeks, and then killed with insecticides.

Beet seeds develop progressively on the plants; blooming begins at the bases of the spikelets and proceeds towards the tips, so that at no time are all seeds on a plant in the same stage of development. For this reason it was impossible to confine the *Lygus* exposure to a single phase of plant development, but introductions were made when most of the seeds on the test plants were in the desired stage of development. Results from experiments in 1945, 1946, and 1947 indicate that the greatest *Lygus* damage is reduction in seed viability, and that this damage comes during the early seed stage. There is also some indication that reductions in yield may result where plants in the early bloom stage are exposed to *Lygus*. Therefore, until further evidence is available to show more conclusively the effect of *Lygus* upon beet seed on plants in the early bloom stage, particularly as regards yield, the only safe practice is to prevent the accumulation of high *Lygus* populations during the period from early bloom to seed maturity by protecting the plants with insecticides at this time.

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²U. S. Department of Agriculture, Agr. Res. Adm. Bureau of Entomology and Plant Quarantine.

³Numbers in parentheses refer to literature cited.

Literature Cited

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