

Comparison of Economic and Plant Phenology-Based Thresholds for Management of *Lygus lineolaris* (Hemiptera: Miridae) in Minnesota Strawberries

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ABSTRACT. Field studies were conducted in southeastern Minnesota, 2000-2002, to assess damage potential and management options for adult *Lygus lineolaris* (Palisot de Beauvois) in June-bearing strawberries (*Fragaria x ananassa*). The first study was designed to assess the efficacy of a published economic threshold for *L. lineolaris* nymphs, compared to a plant phenology-based threshold management program, targeted at *L. lineolaris* adults. *Lygus lineolaris* nymphs were sampled using the standard white pan beat method; adults were sampled using yellow sticky traps. In the second study, during 2001-2002, caged strawberries were artificially infested with adult *L. lineolaris* at specific plant growth stages (i.e., vegetative, green bud, white bud, first blossom, peak blossom, first green fruit, and first ripe fruit), to determine the most susceptible growth stages of strawberry. The phenology-based thresholds proved to be more effective in managing *L. lineolaris* than the current economic threshold based on nymphs. Results from the infestation timing study indicate that early-growth stages (i.e., green and white bud) are most susceptible to adult *L. lineolaris* feeding damage. During the early-growth stages, only *L. lineolaris* adults were present; infestations of nymphs occurred primarily from first blossom to green berry. Results from both studies indicate that, 1) management of adult *L. lineolaris* during the early strawberry growth stages is recommended for maximizing marketable yield, and 2) that the use of plant phenology-based thresholds, when adults are present, will significantly improve insecticide spray timing, and thus minimize the number of insecticide sprays.

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