COTTON BOLL SUSCEPTIBILITY TO *LYGUS HESPERUS* IN RELATION TO BOLL AGE

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Abstract

Lygus is an emerging cotton pest in the Texas High Plains. It causes injury to both squares and young bolls that may result in fruit abortion. If the maturing bolls are infested, it could cause significant damage to developing lint. Determination of the cotton boll developmental stage that is safe from *Lygus* damage will help reduce the insecticide use. The objective of the study was to determine when cotton bolls are safe from *Lygus hesperus* feeding injury using heat units (HU) as the indicator of boll maturity. Treatments included cotton bolls of five maturity levels (150, 250, 350, 450, and 550 HU >60 ^{o}F). A total of 540 white blooms were individually caged using ventilated foam cups. When a cohort's HU accumulation was reached, one adult bug was released per cage and allowed to infest for 48 h. Infested bolls were then removed from the plant and observed for external lesions and internal damage. External damage spots were counted and then each boll was cut open so that internal damage spots and warts could be counted. Our data suggested that nearly 100% bolls received external lesions at 150 HU, but only 60% bolls received internal damage at this HU. While *Lygus hesperus* could cause external lesions on bolls throughout the boll development, it could not cause appreciable damage once the bolls get the age over 350 HU. Thus, 350 HU appears to be the cut-off point for *Lygus* being able to damage developing bolls. Penetrability of hardening carpel walls suggested that the cotton bolls are safe from *Lygus* damage when the pressure required to penetrate the carpel wall is > 0.69 lb/ft^2.