

A Summary of Results from Insect Studies in Stub and Planted Cotton
from 1978 - 1981 in Arizona

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Boll weevil

Boll weevil, Anthonomus grandis Boheman, square and/or boll infestations were found in 3 stub cotton fields on 2 ranches near Gila Bend and a single adult was caught in a trap operated in a stub cotton field in Rainbow Valley during 1978 and 1979. Boll weevil infestations were found in 7 stub cotton fields on 5 ranches and were caught in traps operated on another ranch in the Cosmos (Cotton Center) area in 1980. Infestations also occurred in a stub cotton field near Gila Bend.

Boll weevil infestations increased dramatically in 1981 and were found in 39 stub and planted cotton fields in western Maricopa and eastern Yuma Counties. Square and/or boll infestations were found or adults were caught in traps on 1 ranch in Rainbow Valley, 2 ranches near Buckeye, 1 ranch in the Harquahala Valley, 12 ranches in the Cosmos area, 3 ranches near Gila Bend, 3 ranches in the Hyder area and 3 ranches near Aztec.

Boll weevil infestations are again wide-spread in southwestern Arizona cultivated cotton. These results support the conclusions of earlier authors that the early destruction of cotton stalks and subsequent burial of all debris are essential cultural control practices to prevent the development of high boll weevil populations in Arizona.

Pink bollworm

In a randomized block experiment where no insecticides were applied, more pink bollworm, Pectinophora gossypiella (Saunders), moths from overwintered larvae emerged in stub cotton than in planted cotton. Approximately 62% of the moths emerging in stub cotton compared to ca. 10% of the moths emerging in planted cotton had host material (squares) available for reproduction. Significantly greater infestations in blooms and bolls were found in planted cotton adjacent to stub cotton which was open rather than protected from moths from outside sources.

Significantly more male moths were caught through June in stub cotton fields than in adjacent planted cotton fields on commercial ranches from 1978 - 1980. Square and boll infestations were found ca. 5 weeks earlier in stub cotton than in adjacent planted cotton. Average weekly boll infestations ranged in stub cotton fields from ca. 0 - 6% and in planted cotton fields from 0 - 3%. The numbers of insecticide applications made to commercial stub and adjacent planted cotton fields from 1978 - 1980 were 11.1 and 10.3, respectively. Thus, currently available insecticides used by commercial growers effectively controlled pink bollworms in both stub and adjacent planted cotton.

Heliothis spp.

Heliothis spp. eggs were present ca. 5 weeks earlier in stub cotton fields than in adjacent planted cotton fields on commercial ranches from 1978 - 1980 but 2% or less of the terminals in the stub cotton were damaged by larvae during this period. Average peak terminal damage occurred mid-August (15%) in stub cotton fields and late-September (17%) in adjacent planted cotton fields.

Plant bugs, cotton leafperforators and insect predators

Plant bugs (includes lygus, cotton fleahopper and black fleahopper) populations were low and of little consequence in either stub or adjacent planted cotton from 1978 - 1980. Cotton leafperforator numbers also were low in both stub and planted cotton fields.

High numbers of beneficial insects were found early in the season in both stub and planted cotton fields. Populations remained high through early-July and declined thereafter when fields began scheduled insecticide treatments.