

COTTON INSECT GENETICS

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Two visible markers have been isolated in H. virescens. The first is a recessive body color mutation we call "orange wing." This strain is now well established and being used in linkage tests. The second marker "white larva" has been difficult to purify, first because of low fertility and second because other larval colors frequently occur in pure crosses. The strain is still under investigation.

Six new populations of boll weevils from cultivated cotton in Arizona and Baja California, along with additional populations of weevils from thurberia cotton, were analyzed for allozyme frequencies. Considerable variability was found between the thurberia populations. Some were very similar to populations from cultivated cotton, while others were very isolated. Complex genetic interactions were observed between various populations of boll weevils in Arizona and Mexico.

INSECT PATHOLOGY

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A 40-acre plot of late-planted cotton was treated on an "as-needed" basis with insecticides, pheromone (No-Mate^R), and microbial insecticides to evaluate a probable pest management program in cotton. The most significant result of this test was the control of extensive Heliothis populations by four weekly aerial applications of a mixture of a nuclear polyhedrosis virus, Bacillus thuringiensis, and COAX^R adjuvant. A population in excess of 100 eggs or larvae per 100 terminals was controlled, resulting in little damage due to this pest. Chemical insecticides were not required for pink bollworm control; however, two applications were required for lygus (Hemiptera) control.

A dust formulation of the feeding adjuvant, COAX, was applied using a simple turbofan duster, allowing the wind to carry it across the field. Bioassays of leaf samples indicated good coverage with corresponding potential for Heliothis control for at least 100 rows (330 feet) from the release point.