9-14-06 Summary of plans devised by Dennehy and Tabashnik

Plans for DNA Screening of Pink Bollworm in Arizona 2006

Goal: Screen 500 field-sampled insects (50 or more per site from 10 sites) in Arizona for the three known cadherin resistance alleles (*r1*, *r2*, and *r3*) using the PCR method described by Tabashnik et al. (2006).

Low numbers may limit the number of insects that can be collected and screened from the eradication zone. If possible, at least 300 field-sampled insects from at least 6 sites in the eradication zone will be screened. Special effort will be made to collect insects for DNA screening from any areas in which trapping data show unexpectedly high numbers of native moths in the eradication zone.

Sampling methods: As described by Tabashnik et al. (2006), insects for DNA screening will be sampled from bolls and from traps baited with sex pheromone:
"Cotton bolls were sampled from 19 cotton fields (18 in Arizona and 1 in California) from 2001 to 2005 as described by Dennehy et al. (2004). At each site, 300 to 2,000 bolls were collected from non-Bt cotton fields near Bt cotton fields. Bolls were taken to the University of Arizona Extension Arthropod Resistance Management Laboratory in Tucson. We obtained pink bollworm by collecting fourth instars that exited bolls and by opening bolls and removing larvae found inside."

"Pink bollworm males were collected in sticky traps baited with female sex pheromone (Tabashnik et al. 1999) in 40 cotton fields (36 in Arizona, 3 in California, and 1 in Texas) from 2003 to 2005. At each site, several traps were placed around the perimeter of a cotton field, collected after 1 to 2 days, and brought to the laboratory. Live males that showed normal movement of appendages were removed from traps using wooden toothpicks. A new toothpick was used for each male to avoid cross-contamination."

Progress and sampling plans:
1. Males (ca. 80) caught in July 2006 in one group of fields with relatively high native moth counts in traps will be screened with PCR.

2. To produce strains for bioassay testing, bolls have been sampled from four sites (two in the eradication zone, two outside the eradication zone). If numbers are sufficient, subsamples of 50 insects per site collected directly from bolls will be screened for *r* alleles.

3. Trapping at 10 sites in the eradication zone will be done to obtain males for PCR screening in late September. If this sampling does not yield enough males, trapping will be repeated in mid- to late October.