

Biannual Progress Report # 4

CDR-AID Grant # C7-077 (DPE-5544-G-SS-7009-00)

Title: Identification and characterization of genetic strains in whiteflies

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Date: June 1, 1989

Period covered: January - June 1989

Activities:

Israel

Collection and electrophoresis of *B. tabaci* continued according to schedule. No whiteflies were found in the winter, but since March, collection of new samples has been regular and about 60 were added so far this year. Electrophoresis of the incoming samples, with staining at least for Esterase isozymes, did not lag much behind the collection date, and the results were added to the files scored in the computer.

In our previous report, the emphasis has been on geographical and host-plant-related differentiation. Recently, the data collected at 3 sites since the start of the project were analyzed for temporal variation in frequency of the fast (F) and slow (S) alleles of the polymorphic EST locus. The frequencies of F in samples from cotton fields in the Beit Shean valley - one of the principal cotton areas in the country - were high (0.8 or more) in the fall and early winter of 1987 and spring of 1988, decreased almost to zero in June-August, and recovered the highest level in September-October 1988. The June-August period is the time of the most intensive pesticide application to cotton fields against whiteflies, and the change in allele frequencies may be related to the pesticide treatments. In samples from non-agricultural areas, the frequency of F also decreased during the same period (June-August 1988) but the frequency remained around 0.5 at the lowest point. This decrease may be due to the immigration of adult *B. tabaci* from the heavily sprayed agricultural fields nearby.

In the coming months we shall pursue this issue further, by collecting samples regularly throughout the summer and analyzing them both geographically and temporally.

Colombia

Collections of whiteflies from some of the most important agricultural areas of Colombia (in particular the cotton-growing areas) continued, as well as electrophoresis of the collected whiteflies. Pupal cases were sent to taxonomists in the USA for confirmation of species identity. Partial analysis of the data seems to reveal clear geographical differentiation of populations separated by the high-altitude mountain ranges of Colombia. However, larger sample sizes are required to support these statements.