CSE47C

Cotton Research and Development Corporation

Report on overseas travel

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REASON FOR TRAVEL

The aims of this trip were to initiate research on HaSV RNA designed to improve our ability to express insect viral genes in transgenic cotton, and to attend two important conferences relevant to the long-term biological control of major cotton pests like *IIelicoverpa armigera*: the International Workshop on the Molecular Biology and Genetics of Lepidoptera (Crete) and the International Colloquium on Invertebrate Pathology and Microbial Control (Montpellier).

SUMMARY

(I) WORK ON HASV RNA STRUCTURES AT LEIDEN UNIVERSITY

Preliminary experiments confirmed the existence of special RNA structures resembling tRNAs on the HaSV genomic RNAs. These structures are likely to be critical for virus replication, so that an understanding of their structure and function is important for engineering of the virus in order to exploit it for pest control.

This work also confirmed that the ribozyme built into our HaSV RNA expression constructs functioned as expected to generate correctly terminated HaSV genomic RNAs, but with unexpectedly low efficiency. Improvement of this efficiency may be important for achieving better pest control in transgenic plants.

(II) MEETINGS

The International Workshop on the Molecular Biology and Genetics of Lepidoptera in Crete (August 21-26)

Work reported at the meeting covered several key areas of insect molecular biology relevant to our use of insect viruses for pest control. The major areas discussed at the meeting were:
(i) insect physiology and the regulation of gene expression
(ii) molecular studies on lepidopteran genomes
(iii) progress in research on transformation systems.

The International Colloquium on Invertebrate Pathology and Microbial Control in Montpellier (August 28 - September 2)

This meeting, organised by the Society for Invertebrate Pathology, covered progress with a wide range of microbial pest control agents. Of especial significance for the use of viral insecticides were results from the first field trial of a recombinant baculovirus insecticide expressing a toxin; novel strategies for design of attenuated or contained recombinant baculovirus insecticides; and recent findings on how baculoviruses spread in infected larvae.