

Implementation Programs

Miscellaneous Apple and Pear Pests

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A computer based insect/mite identification program is being developed for apple and pear. This program will use a Windows-style Graphical Users Interface, which will allow for the identification of pest and beneficial species with a minimum of text. Users will be led through a series of windows, analogous to nodes on a dichotomous key. Each window will present the user with two or more graphical choices from which he/she will select one by pointing and clicking with a mouse. The program will go through several such choices until it comes up with a likely organism that fits the description. At this time it will present the user with a window with a viewer for looking at photographs of various life stages of the organism and with a text box containing general information on range, damage, life history, etc. All windows within this program will have an identical format that will follow standards set up for most Microsoft Windows-based programs. All will give the user an option to back up through the key if he/she believes an incorrect path is being followed or to start back at the beginning.

A prototype of the program has been developed which concentrates on identifying larvae of Lepidoptera. The list of 30 lepidopteran pest species included in the prototype covers all of the major lepidopteran apple/pear pests found in any of the major orchard areas within the United States and Canada.

In the prototype, for most organisms the program uses non-technical characteristics in the identification process and therefore is easy to use even for people with little training in entomology or acarology. Insect characteristics used include shape, color, size, where the specimen was found, the time of year, etc. For those organisms that cannot readily be distinguished based on these characteristics, the program shows the user a list of possible insect species. Users now are given the option of viewing the information on these insects or attempting to key them out. Users attempting to key at this point are warned that the key relies on technical characteristics that require some knowledge of entomology or acarology and may also require the use of a dissecting microscope.

The program will make extensive use of digital photographic images, which means that relatively large amounts of storage space will be needed. Because of this, the program will best be distributed on CD-ROM disks. These disks will be packaged in a plastic jewel case with a printed insert providing general information on the program. CD-ROM readers on computers are currently selling quite readily and will probably be standard fare in the near future for home and business computer systems.