Weed Control Information— A New Database

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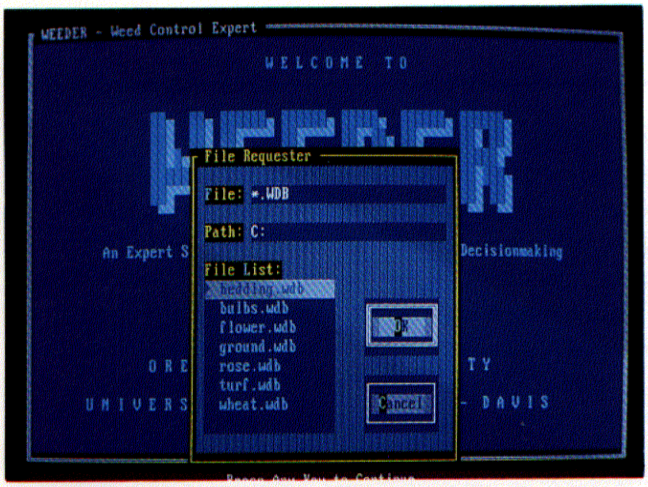
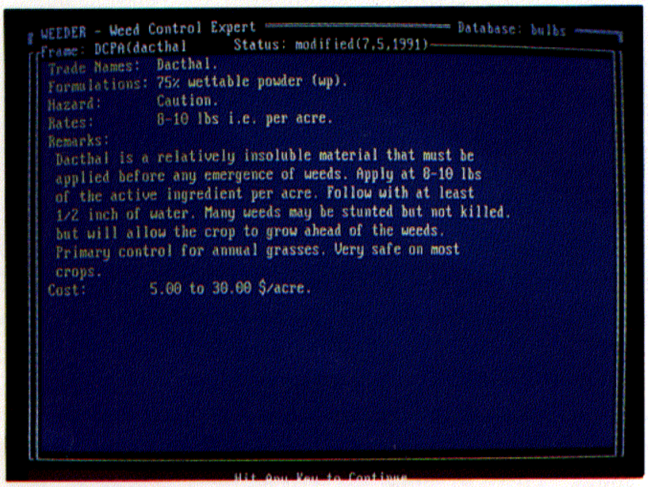
Though much information is available for the control of weeds in various ornamental plants, there is no single source that a farm advisor, nursery manager or landscape supervisor can turn to for quick reference. To provide up-to-date information for that clientele, University of California weed specialists are currently working with John Bolte of the agricultural engineering department of Oregon State University to develop a computer database of chemical and nonchemical weed control methods. It will include easy update capabilities, will be user friendly and can be upgraded into an expert system(ES) for weed control in the landscape.

The Database Components

The program is a frame-base expert system providing database functionality with inference-based recommenda-



Entering the "Weeder" database through a menu of plant types, a landscape manager or other user can then find thorough information on available weed control methods..



tions for weed control strategies. It is composed of six databases: ground covers, bedding plants, bulbs, field-grown flowers, shrubs and turfgrass, each containing a list of ornamental plant species and weed species that commonly would be found in those crops. Nonchemical control measures that include cultural management practices and mulches (both natural and synthetic) are included where appropriate.

For the control of specific weeds, herbicides available for use in California are listed under both trade and generic names.

Data includes the level of control to be expected and the cost of treatment for each of the ranked treatments. Each herbicide is described with use characteristics, precautions for use, concern for plant health (phytotoxicity) and the actual rates for use in various soils and climates. The user can select the parameters for each specific site.

Fourteen species of bulbs, 31 species of ground covers, 42 species of bedding plants, 15 species of field-grown flowers, and 68 species of shrubs have been selected for inclusion in the databases. The program provides brief descriptions of the plant species, and, where appropriate, gives information on cultural techniques, such as spacing of plants, cutting height, cutting frequency, and irrigation frequency, which would reduce or control weeds.

Weed species listed are those commonly found in growing sites. Descriptions of annual and perennial weeds include common characteristics and page number referrals to either the *Grower's Weed Identification Handbook* or the *Turfgrass Pests Manual Publication No. 4053* (both University of California publications) as additional identification aids.

Using the Databases

Developed for the IBM computer, the program is loaded onto a hard disk drive, accessed through the program name "Weeder," and a file, such as "Bedding Plants," is called up. Then the user can select the weed species and the ornamental species, view the weed, ornamental, or herbicide characteristics, or ask for a recommendation. To obtain a recommendation, the user identifies the weed species present. He or she also can select a number of species for each ornamental. The program will present a method, a chemical, or both for the user to evaluate.

If the user enters information regarding cost limits, ornamental tolerance to an herbicide or the percent of control sought, the program offers a best treatment for those specifications. Then the program will permit the user to look at other control measures and find out why those measures were not selected. The user has access to additional information on the chemical's application method, rate of application, and special precautions regarding its use.

This program will allow the user to find information on current weed control methods for a wide range of California's ornamental crops and landscape plants. We will first introduce it for trial runs at University of California Farm Advisors offices and expect that eventually it will be available to nursery managers, landscapers and others involved in growing or maintaining ornamentals and turfgrass.

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