Development of a crop information service

I. Sofield and S. J. Gagen

Department of Agriculture and Rural Affairs, Plant Research Institute, Swan Street, Burnley, Victoria 3121.

Farmers are under increasing pressure to increase their cost-efficiency to maintain a competitive and viable agriculture. A major area for improvement is pest control (the word pest here is defined broadly to include weeds, insects, diseases, nematodes or any other factor which reduces crop production). Despite increasing costs, many pest outbreaks are not controlled efficiently. This stems from a lack of relevant information, from the inefficient means available for alerting farmers about current pest problems, and from the inadequate and inefficient means that research staff have to access, process and integrate the information necessary to develop efficient pest control strategies.

To help solve these problems in Victoria, the Department of Agriculture and Rural Affairs (DARA) initiated in 1984 a pilot study of a Crop Information Service (CIS) (1). CIS is the first serious attempt in Australia to set up a computer-based system for the state-wide surveillance of crops. The key feature of CIS is the regular collection, using standardised methods, of information on crop conditions - such as the type of crop, its stage of development, the pests found and an assessment of the economic loss sustained. The collected information is sent to the Plant Research Institute (PRI) where it is processed and stored on a central data bank. The processed data is then passed back (via DARA extension officers) to the farming community.

Setting up such computer-based service systems is complex and time consuming. But, once set up, they permit not only a systematic means of storing and rapidly processing current information on crop health conditions, but they also lend themselves to systematically integrating this information with historical data and research knowledge to enable the development of efficient pest control strategies.

Although still in its pilot stage, CIS is already providing benefits to DARA and the agricultural community. Current services provided by CIS include a diagnostic service. This allows new pest identification for Victoria. Bulletins are issued on a monthly basis. They comment on crop problems and offer advice on the biology and control of specific pests. Where information needs to be urgently disseminated, CIS issues Pest Alerts to all District Offices via Telex and Videotex.

A central data bank has been established on the DARA VAX mini-computer. Data entry is routine, but retrieval of data to efficiently meet extension and research staff requirements needs further refinement, a task which is currently in hand.

As CIS continues to collect information, it will become increasingly useful as a research base for developing pest control strategies. The body of information will also prove invaluable for extension, quarantine and diagnostic purposes. At present, these activities make use of mainly manual records. A central computerised system will not only reduce clerical effort, but will increase the reliability and consistency of information provided to the public, and thus will improve the credibility of DARA by ensuring that important data for research and extension is accurate and available on time.

1. Amos, T. G., Perry, M. R. and Gagen, S. H. (1984).Research Project Series No. 185, Department Agriculture, Victoria. August 1984.