

Protectants — Session Summary

Conveners: M. Bengston and L. Zettler

The session on protectants attracted 40 papers which were grouped into 4 broad themes. Some 27 papers were presented orally.

The first theme concerned conventional synthetic insecticides. Papers reported studies on the development and steps towards registration and use of the organophosphorous compound methacrifos and the synthetic pyrethroids bifenthrin, cyfluthrin and deltamethrin. There was also considerable interest in the benzyl phenyl ureas and work has commenced on the field evaluation of diflubenzuron.

Nevertheless, it was noticeable that the number of new compounds coming forward has declined significantly since the last working conference. Speakers referred to the high cost of development, possibly \$20 million per compound, necessary to establish the efficacy and meet the stringent regulatory requirements in regard to a candidate grain protectant. In addition, it is apparent that, despite agreement by expert toxicologists in regard to safety, other authorities and consumers in many markets were not prepared to accept grain with residues of protectants.

The second theme was the study of botanical products and this was reported in several papers. Traditional use of several plant products continues in many countries and there is interest in developing these as alternatives to conventional pesticides. Supplies of appropriate plants are limited and widespread use would require additional plantings, which were reported to be under way in several countries. Use of botanical materials for grain admixture by exporting countries would appear unlikely in view of the high cost of the necessary toxicological studies.

The third topic was resistance, which continues to reduce the efficacy of compounds or groups of compounds against particular species in particular regions. One consequence has been the increased use of mixtures to control the entire pest complex. More recent trends include the development of rapid resistance monitoring methods and the implementation of resistance management strategies.

The final theme concerned residues and there was general agreement that the behaviour of residues was now reasonably well known. The equipment and expertise necessary for the measurement of residues was now generally available, if not always widely used. A recent advance has been the development of rapid tests based on ELISA technology. Several registrations and especially those in regard to minor grains had lapsed because of the absence of residue data. There was a suggestion that the requirements and timetable for presentation of data to the Codex Alimentarius Commission could be published in forums such as the *Journal of Stored Products Research* and thus enable a cooperative effort in the generation of data and the presentation of appropriate submissions.