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THE USE OF GC/MS FOR ROUTINE ANALYSIS OF FOOD PRODUCTS FOR PESTICIDE RESIDUES

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The monitoring of food for chemical residues is important to protect Australia's export market. Our Laboratories use GC/MS to analyse foods for pesticide residues and other contaminants such as PCB's.

There are many challenges in maintaining a sensitive GC/MS system to analyse large numbers of samples with accurate quantitation and provide quality assured results within fairly stringent timeframes. A large variety of sample types increases the difficulties on the analytical and instrumental methods.

Sample clean up is essential and although the GC/MS can be set up and run to manage "dirty" samples the negative effects are present and shown by:

- degradation of analytes
- damage to gold seal / column / detector
- dirty detector / extra cleaning / downtime

A number of MS issues will be addressed

- Use of SIM or SCAN and problems
- EI or CI
- Confirmation using other systems - eg ECD's
- Difficult compounds eg FMT, Temephos, DCV, others, and
- for some compounds there are LOR issues

Some options for analysis if an LC/MS is not available for analysis of some compounds is discussed.

Examples of managing these problems in different ways are presented.