

## **The potential to value add to the Australian residue monitoring survey**

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### **Summary**

*The national wool residue monitoring survey conducted by Australian Wool Innovations provides useful information on residue levels in the Australian clip and provides an insight into trends in chemical use by farmers. Currently results are not passed onto growers but a proposal is suggested to involve wool brokers in notifying growers of nil results. This may be relatively easy to organise and may help increase awareness and understanding of brokers about wool residues.*

### **Keywords**

Wool, pesticide, residue, survey, brokers

### **Introduction**

Australian Wool Innovations (AWI) (formerly The Woolmark Company) has randomly surveyed Australian wool clips since 1992. A total of 600 clips are tested annually, including approximately 200 from Western Australia. The Australian Wool Testing Authority selects the clips to be tested at random and sends the core samples to the CSIRO laboratory in Geelong, Victoria. The results from the testing give a broad indication of the average level of specific pesticides in the Australian wool clip and current trends in chemical use.

To gain a better understanding of the relationship between residues at shearing and on-farm chemical use, NSW Agriculture surveyed nearly 976 woolgrowers who had wool randomly selected for testing from September 1992 to May 1994 (Plant, 1995). A similar postal survey was conducted on Queensland woolgrowers during 1995-97 (Ward and Armstrong, 1998). The response rate for both these surveys was over 75%, indicating an interest by growers in this issue. These studies also identified several benefits from contacting growers directly, including increasing awareness of wool residues and tailoring extension activities to focus on key findings e.g. highlighting the risks of mixing an organophosphate with cyromazine for fly control.

Surveys of this nature require substantial resources and have primarily focused on scientific outcomes rather than extension benefits that could be derived. Bearing in mind the perennial scenario of State agricultural agency budget constraints, an opportunity may exist to promote awareness of wool residues with minimal or no government input from information generated from the national residue monitoring survey.

Since January 2000, Agriculture Western Australia has worked collaboratively with major wool brokers to notify Western Australian woolgrowers of residue test results obtained through the national residue monitoring survey. This project has three aims, with the second aim being the most important.

### **Aims**

1. To determine whether the residue status of WA wool compares favourably with the national clip;
2. To increase awareness and understanding of pesticide residues on wool by woolgrowers and wool brokers;
3. To obtain information relating to on-farm practices used to produce low and high residue wool.

Undertaking this initiative has revealed several benefits including increasing awareness and understanding of wool residues amongst wool brokers and woolgrowers, using information from the survey in extension and adding to data already collected which links greasy wool residue levels with on-farm practice. This paper outlines the procedure undertaken by Agriculture WA and suggests a framework for a modified approach on a national level.

## Methods

An Excel® spread sheet of the results for all Australian clips selected for testing is received monthly from AWI. The 11 different chemicals tested are:

Organophosphates:

- Chlorvenfinphos (e.g. Supona®, Suprex®)
- Diazinon (e.g. Di-Jet®, Topclip®, Jetdip®, Eureka Gold®)
- Propetamphos (e.g. Ectomort®, Seraphos®)
- Temephos (e.g. Assassin®)

Synthetic pyrethroids:

- Cyhalothrin (e.g. Outlaw®, Grenade®)
- Cypermethrin (including alphacypermethrin) (e.g. Outflank®, Spurt®, Vanquish®, Duracide®)
- Deltamethrin (e.g. Clout S®)

Insect growth regulators:

- Cyromazine (e.g. Vetrazin®)
- Dicyclanil (e.g. Clik®)
- Diflubenzuron (e.g. Strike®, Fleececare®, Magnum®)
- Triflumuron (e.g. Zapp®, Epic®)

The Western Australian clips are identified through recognition of the broker and sampling centre. Each wool broker is sent results in the form of a feedback sheet on a monthly basis. This feedback sheet is then forwarded to the relevant client with a request to complete the form and fax information relating to chemical use direct to Agriculture WA.

## Results

The WA results are reviewed on a monthly basis to determine the percentage of clips that meet the following criteria and the percentage of the clip that meets the specified criteria for all chemical groups.

Criteria for residue levels used by AWI	
Organophosphate (OP)	1 ppm
Synthetic pyrethroid (SP)	0.5 ppm
Cyromazine (CM)	10 ppm
Diflubenzuron (DFB)	1 ppm
Triflumuron (TFM)	1 ppm
Dicyclanil (DCL)	No criteria

Each clip is assessed and the percentage of clips that meet the AWI criteria are calculated for each chemical group tested (see Table 1). In the future, when levels have been determined for export harvesting intervals, these figures will be used as the benchmark rather than the AWI criteria.

**Table 1. Percentage of clips tested meeting AWI criteria for each chemical.**

Month	Total	OP	SP	CYR	DFB	TFM
July 00	6	65%	85%	100%	85%	100%
Aug 00	35	85%	95%	100%	100%	85%
Sept 00	8	100%	100%	100%	100%	75%
Oct 00	28	75%	70%	80%	70%	80%
Nov 00	22	70%	90%	95%	80%	85%
Dec 00	10	60%	90%	90%	100%	60%
Mean	18	75%	90%	95%	90%	80%

Trends and areas of concern are identified from the data and this information is used to alert growers. For example, the percentage of clips meeting the criteria for OPs were relatively low. Individual results are

also tabled for each month and for July to December 2000 a high number of clips (34%) were found to contain a SP residue. The months recording the highest number of clips containing a SP were August and October. Despite the actual levels being fairly low, it is a major concern that SPs are still being used by woolgrowers, presumably to combat lice.

## **Discussion**

Agriculture Western Australia has developed a system to use the information gathered through the national residue monitoring survey. Other state agencies may not have resources available to collate and distribute all results and to provide a feedback mechanism. However, there may be an opportunity to explore the potential to involve wool brokers directly in feeding back information to growers in those states that cannot provide a government based coordinator.

This initiative relies upon cooperation from wool brokers to receive the information from AWI, and to then identify and contact clients to notify the results.

### ***Suggested format***

Results could be sent to major wool brokers monthly from AWI as an Excel spreadsheet. These can be sorted to the state of origin based on where the wool was sampled. This list can be further sorted based on the wool broker. For the larger brokers, results could be sent to the national office which could then distribute the results to each state branch. Depending on the level of resourcing available through brokers, two options may be followed.

#### ***a) Notification of nil results only to growers***

Wool brokers may choose to notify growers whose test result shows nil residues. This would require no interpretation and would involve a minimal amount of time. Growers who receive a nil residue result are given an assurance that their current on-farm practices are not causing unacceptable pesticide residues. AWI could sort the data and distribute only the nil results to brokers.

#### ***b) Notification of all results to clients***

Wool brokers may choose to notify all results. This would require some interpretation and is likely to involve more time than if only nil results were notified. A guide to interpretation could be developed and distributed through AWI.

## **Conclusion**

The national residue monitoring survey is a useful indicator of the residue status of Australian wool, but this information is not generally available to individual growers or brokers. With the recent introduction of the voluntary vendor declaration for residues by AWEX (AWEX, 2001), wool brokers will be providing more advice to growers about the implications of residues on wool. It is timely to invite brokers to participate in dissemination of information that has direct relevance to their clients.

## **References**

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