Attitudes to Integrated Pest Management in the Australian Cotton Industry

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Background

The adoption of Integrated Pest Management technologies and strategies, which are being extensively researched and developed in the cotton industry, has been very limited. The development of effective extension programs is totally dependent on an understanding of the attitudes of growers and consultants to IPM. The Cooperative Research Centre for Sustainable Cotton Production supported a Special Initiatives project in 1997 to investigate the Attitudes to Integrated Pest Management in the Cotton Industry.

The aims, using focus group techniques were to:

- Investigate the attitude of cotton growers and cotton crop consultants to pest management and other issues.
- Determine the barriers to adoption of IPM practices and new insect management technologies.

Methodology

Focus groups were established in selected major cotton growing areas to discuss crop management in cotton with an emphasis on pest management strategies in May 1997. Focus group training was conducted at Goondiwindi by Jeff Coutts and Gerry Roberts of the Rural Extension Centre, UQ Gatton College. The group meetings facilitated by cotton industry extension officers supported by other extension officers from NSW Agriculture, QDPI, CRDC, Cotton Seed Distributors and the Bureau of Sugar Experiment Stations in Qld. They were held on the Wednesday, May 28 in all regions. In total twenty one officers were involved in the project.

Group meetings were held in the following centres:

- Growers at Emerald/Theodore, Dalby, Goondiwindi, Moree, ACRI Narrabri, Warren and Gunnedah,
- Consultants at Dalby and Narrabri and,
- Researchers at ACRI.

Results

The purpose of this study was to increase the understanding of the issues impacting on the adoption of IPM technologies and strategies in the Cotton industry. Focus Groups permitted exploration of the social, economic and technological aspects of IPM *as they were raised by participants.*

Grower perspectives

There was a high level of awareness of IPM at a general level amongst growers, and of the range of tools being used or promoted within IPM. The increased adoption of IPM approaches *over time* due to insect resistance and community pressure was viewed as inevitable.

Traditional chemicals remain the primary insect control mechanism in the industry. A number of other IPM components are being used across the industry at various levels, however there appears to be a lack of widespread adoption of comprehensive and integrated IPM strategies on farms.

There was concern that IPM approaches and implications were still not fully understood and developed, and that management of neighbouring crops needed to be addressed alongside IPM in cotton.

The generally positive attitude across the industry towards the reduction of chemicals is a major factor which will contribute to wider adoption of IPM approaches. Increasing growers understanding of the underlying principles of IPM, and their trust in the approaches through localised research and the experience of other growers, appear to be significant factors in assisting wider adoption.

The relatively low cost of chemical approaches in relation to their positive impact on yields is a major disincentive to use softer approaches with their *perceived* higher costs and risk. This was the case for the growers themselves and their consultants whose on-going 'employment' depends on crop performance. Industry emphasis on yield rather than Gross Margins or long term sustainability, and the lack of economic data linked to IPM recommendations inhibit adoption.

Other issues included the need to define benefits of IPM more broadly, to address community attitudes towards the industry, and the need to target consultants as well as growers in IPM educational programs.

In many cases the allocation of responsibility for pest management to consultants was a result of a lack of grower understanding and confidence in IPM issues.

Consultants perspectives

There appears to be constraints on some consultants in using/recommending IPM approaches because of the need to ensure high yields, in the absence of convincing economic data for IPM approaches. There was a strong belief that increased attention to grower education was a key to greater IPM adoption. Local trials involving consultants were also seen as an important component.

Extension officer perspectives

The lack of clarity about the ideal IPM strategy, with its regional variations, was considered a significant limitation to adoption. On going educational programs, including sharing of positive grower experience, were seen to be essential in changing attitudes and encouraging growers to take greater responsibility for management decisions.

Researcher perspectives

There was a perception by researchers that the industry did not have a comprehensive IPM strategy, with the piecemeal release of new products and the differing emphasis by different people further complicating the development of such a strategy. Researchers emphasised biological control, with selective chemicals also seen as a key element of an IPM strategy.

Key Issues Emerging

A number of key issues **for extension** have emerged from these focus groups. These are listed below:

There is a positive environment for the acceptance and adoption of IPM strategies in the industry.

- There **is** strong general support for IPM, in principal, in all sectors of the cotton industry at all levels.
- Growers **are** concerned about long term viability of the industry in the absence of an effective resistance/IPM strategy.
- Growers, in general, are concerned about **community perceptions** of the industry and issues related to environmental and community health.
- A number of IPM components are in widespread practice.

There is a lack of clarity about the current best-practice IPM comprehensive strategy.

- There appears to be a 'fuzziness' about the term IPM and variation in how different groups perceive and describe IPM.
- Growers are perceived to lack detailed understanding of the biological and chemical aspects relating to pest control.
- There is a perception that local and seasonal conditions require different applications of IPM approaches which are not clear.
- There is confusion about best recommendations for Ingard.
- The emphasis on 'earliness' by growers is questioned.

Economic issues remain the chief determinants of management strategies and yields remain the primary indicator considered for a successful crop.

- Consultants are under pressure to ensure high yields to maintain credibility.
- Chemical costs are low in relation to potential yield protection/benefits.
- There is a lack of clear economic data and extension material in relation to IPM components/strategies being promoted.
- The medium/long term economic implications of not taking IPM approaches are not available to impact on decision making.

Recommendations/ Implications

In view of the key issues identified through the focus groups, a number of implications can be identified and recommendations made.

A comprehensive educational package is needed which clarifies the latest best practice for IPM as identified by industry experts.

- In this case, 'experts' includes researchers, extension officers, consultants, and growers who have had expertise in IPM approaches.
- This ***extension package*** is of the highest priority and should be developed by a committed working group. A week long meeting of this working group could be a mechanism to develop the package, for wider circulation and comment. The emphasis should be on ***rules of thumb*** **and** ***simplicity of explanation*** rather than complexity (expertise in this area should be employed). A clear, industry wide accepted, approach should be the aim!
- The package should identify areas of local/seasonal variation, and link in with grower planned trials/demonstrations aimed at providing localised information and confidence.
- The package should also appeal to the concern by growers about community perceptions of the industry and community/environmental health.

Economists should be contracted to develop economic links to IPM strategies with a short, medium and longer term time frame.

- The messages from the resulting analysis should be clear and linked to the educational package.
- Short term losses, if evident, should be up front, but put in the context of the longer term benefit of the farm and industry.

An extension program assisting growers to 'take responsibility' for management decisions, and emphasising economic sustainability rather than yield, should commence and be given a wide profile.

- Crop competitions based on yield should stop, and changed to awards based on IPM approaches and gross margins.
- A series of workshops for growers/consultants, based on adult learning principles, which include understanding of biological and chemical aspects, as well as focusing on IPM management decisions and the growers roles and responsibilities could be developed and instigated in all areas.
- Grower IPM best-practice groups should be established to permit growers to learn and share from local experience and to encourage grower trial and testing of approaches. There is also a need to link these experiences with economics of production in a top-crop type approach.

These recommendations are now being implemented through:

- The appointment of an IPM Training Co-ordinator to develop training workshops and packages.
- The development of a specific project to complete a cost benefit analysis of IPM in the industry.
- The formation of a focus group within the extension team to develop extension programs promoting improved pest management and a greater participation of growers in pest management decisions.

Further research

Follow up interviewing was recommended with the following two groups:

Growers and family members who are identified as genuinely attempting to implement IPM strategies on their farm; and
Growers and family members who have not adopted/resisted adoption/or have low adoption of IPM strategies.

These interviews have yet to be conducted.