

## A BEST MANAGEMENT PRACTICES MANUAL FOR THE AUSTRALIAN COTTON INDUSTRY

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### **Background**

In 1993, a joint research program between Cotton Research & Development Corporation ("CRDC"), Land & Water Resources Research & Development Corporation ("LWRRDC") and the Murray Darling Basin Commission ("MDBC") was established to study "The Impacts of Pesticides on the Riverine Environment using the Cotton Industry as a Model".

It had the following goals:

1. To assess the impact of pesticides used by rural industries on the riverine environment.
2. To develop practical, cost effective methods to minimise the impact of pesticides on rivers; and
3. To provide a sound scientific basis for the development of management guidelines and regulations.

The program is managed by LWRRDC and has funding of approximately 5.5 million dollars. Endosulfan has been the main pesticide studied.

After three years of the joint research program, a system of best management practices was identified as the best way of achieving the second and third goals. It was therefore decided to create a user friendly, practical manual for cotton farmers that contains the best management practices available so as to minimise the impact of pesticides on the riverine environment (for example, by minimising the transport of pesticides off farm). Allan

Williams, in his capacity as Executive Officer of ACGRA was commissioned to collate all the relevant information and develop the best practices manual.

### **Links**

Best management practices can cover virtually all aspects of cotton industry activities from pesticide use through to ginning, and the decision was made that the Australian Cotton Foundation would take advantage of the work in the pesticides area to develop modules for the manual not included in the original brief. By doing this, consistency of approach and format in the whole best management practices system will be enhanced.

In this way the work on the best management practices system is to be expanded from the pesticides module (which currently includes sections on farm design, soil and water management, integrated pest management and application of pesticides) to cover areas such as occupational health and safety, legislation, weed and disease management and property management planning in a manner which helps ensure a manual of modules which are of a consistent design, format and concept.

The following comments relate primarily to the development of the pesticides module of the best management practices system, but would generally be applicable to other areas as well.

### **Sources of Information**

The primary sources of practices for inclusion in the best practices manual are:

- a) Cotton growers and associated industry people
- b) Current publications and technology

c) Research & Development already done and currently taking place

### **Analysis of Practices**

In the case of the pesticides module, these proposed practices have been reviewed by a reference panel, which represents a range of stakeholders in the manual. There are grower, researcher, regulatory authority (NSW Environment Protection Authority and Queensland Department of Environment & Heritage), Australian Cotton Foundation and Australian Conservation Foundation representatives on the panel. This panel will be responsible for providing comments and suggestions about the economic, practical and environmental aspects of the practices proposed to be included in the manual and includes people with expertise and experience in all the major areas to be dealt with by the manual. The involvement of the regulatory authorities will ensure that the suggested practices are appropriate from their point of view. Once the draft has been reviewed by the panel, it will be sent to growers, consultants, researchers, aerial operators and any other interested parties for comment and suggestions.

### **Adoption**

The extending of the manual will involve a campaign with all the following elements:

- communication
- education
- demonstration
- participation
- use of key groups
- persistence

It will be an industry document available to all those with a stake in pesticide use and will be continuously updated as new technologies and practices emerge, as new modules or sections are developed, and as regulatory requirements evolve. Thus it will not be able to be obtained anonymously, so that as far as possible all those who have a copy of the manual will have the most up to date version.

### **Benefits**

1. Reduction of pesticide transport off farm and reduction of the pesticide load in the riverine environment.
2. Accountability in the use of pesticides, leading to a minimising of the impact of pesticides in the riverine environment.
3. Maintenance of existing chemicals, which maintains the option to vary chemical groups, thereby reducing selection pressure on the remaining effective pesticides.
4. Maintenance of endosulfan, a relatively 'soft' chemical thereby avoiding the use of chemicals which induce secondary pest problems (which leads to more sprays being required).
5. Improved on-farm application of chemicals.
6. Improved image within the community as a responsible industry.
7. Improved understanding of the industry of its processes and interactions with the environment.
8. Clarification of future research needs and of knowledge gaps.
9. Reduce the chance of draconian legislation being imposed on the industry.

### **Why Best Management Practices?**

The creation and adoption of a best management practice approach by the cotton industry to the use of pesticides is an alternative method of ensuring that the impacts of cotton growing on the environment are minimised.

Such an approach (which tries to minimise regulatory involvement by passing much of the responsibility back to the cotton industry) can be better tailored to specific issues than the traditional regulatory method and offers farmers a practical, useable tool that will also be in harmony with regulatory requirements, as the regulatory authorities will have been involved in the development of the manual. As the development of the best management practice guidelines requires the involvement of the growers, ownership, and hence adoption, of the outcomes should be maximised. Another advantage of this type of approach is that it is a flexible, on-going system that can be adapted as circumstances and levels of knowledge change.

Importantly, it is a means by which the industry can retain some say in, if not control over, the way in which it is to be managed from an environmental point of view.

It is essential that growers do whatever they can to retain a say in how they manage the environmental aspect of their operation. This approach, apart from satisfying the basic principle that self directed initiatives are more likely to work than command and control mechanisms of change, will also ultimately improve a grower's entire operation.

An active response to the environmental issues of cotton farming is an effective way of demonstrating the industry's commitment to sustainable management. It is a visible mechanism whereby the community can see that pesticides are used in a responsible way.

Of course, in making this choice, of going down the best management practices path (as opposed to waiting for increased government intervention), there is a burden to be carried.

It could be argued that unless the industry as a whole adopts best management practices then it will not have a great deal of credibility, especially amongst the critics of the industry.

Thus the need for the manual to be maintained. If the level of adoption of best management practices is to be measured, then there needs to be a means of knowing who has the

manual, and whether or not they are adhering to the practices contained within it. In other words some sort of accreditation system would certainly be needed to measure adoption

levels. (This issue is discussed in greater detail in the paper by Harvey Baker following).

This then raises another issue-if an accreditation system is to have any credence or support (both within and outside the cotton industry), it may well need to provide some sort of tangible benefits to those who choose to become accredited. If there are neither benefits for participants or sanctions for non compliance, again, it is unlikely to be taken seriously.

Thus by making the decision to go down the best management practices path, a series of almost inevitable steps, or at least considerations, follow. There is more to best

management practices than simply having the manual sitting in every grower's office. Not only does the concept have to be accepted in principle, it has to be adopted in practice, with

all the attendant requirements that may entail. The alternative is having the government do it for you, and I am sure that there are not many people here who would place great faith in any government's ability to manage a cotton farm. The choice is for the industry to make.

## **ACCREDITATION AND SANCTION CONTROLS IN THE COTTON INDUSTRY**

Harvey Baker

Environmental Director, Australian Cotton Foundation

### **Introduction**

In the past controls on industry have largely been regulatory based in that government in addressing increasing community standards used legislative mechanisms to enforce the new standard. While legislative regulatory mechanisms are an essential part of our community and do, in part, achieve their designed aim, they suffer from the problem they, in order to address wide ranging situations, are broad instruments of control and cannot be "fine tuned" to address a specific situation. In some instances the control is inadequate while in others it is a 'sledgehammer to crack a walnut'. Additionally regulatory controls rely on effective policing, and without a policeman behind every tree, some instances may escape detection and generate a loss of credibility or effectiveness of the regulation.

### **Changing Regulatory Framework**

Governments and industry have recognised these impediments and there has been a shift in policy of control towards transferring the onus of responsibility for conforming to community standards to the industry itself. This has obvious advantages in that it allows the industry to participate in the framing of the rules and imposes on the industry a degree of self regulation. While there is always the legislative muscle to enforce the regulations the change in culture within an industry instilled by this self regulatory approach ensures a high degree of compliance.

Best management practice programs are an example of the manner in which industries seek not only to comply with the legislation but in the present climate address the desire of the industry to progress its performance. This may or may not have a market advantage but is part of the culture instilled by having some control of the constraints under which the industry will operate.

### **Industry Self Control**

Self regulatory approaches such as industry discipline and peer pressure have been very effective in the Australian cotton industry in the past, however recently there has been considerable discussion within the industry with respect to accreditation and sanctions as a means of ensuring that the industry moves in a focussed manner along the best management pathway. The stimulus for this is obviously the pressing need to facilitate the introduction of management strategies for INGARD cotton and the concern that if the strategy is not adhered to then the technology could be put at risk. However the discussions have widened to a whole of industry approach to determine whether accreditation programs, with or without sanction type penalties, are applicable or even warranted in the cotton industry.

Accreditation means that there is a training program designed to achieve a level of competency, recognised either by the industry or externally as being necessary for that organisation or individual to perform a function satisfactorily. The AgSafe program is an excellent case in point where industry set a series of competency standards and instituted a program where every member of the agricultural chemical manufacturing and supply industry, through training, was brought to a common competency level. It has been remarkably successful as the information gained and the competencies instilled in individuals of the industry have generated greater commitment and a higher level of skill.



Similarly the Premises accreditation program has raised the level of professionalism in the manner in which agricultural chemicals are stored and transported.

On the downside accreditation comes at considerable cost to both the individual and to the industry in both dollar terms and the fact that the accreditation scheme must have credibility. This requires continuous review to ensure standards are maintained and adapted to the changing requirements, so as to make accreditation a worthwhile exercise.

Accreditation must also have a significant on going benefit to those that do seek accreditation so that the individual has a "carrot" to self regulate their activities and be ever mindful that their actions may bring the whole scheme into discredit. There are numerous accreditation schemes that, through failure of a small group of individuals to comply, have put the industry in a worse position than if the industry had never embarked on the accreditation program.

Additionally, accreditation schemes must have a complex infrastructure to ensure that the scheme remains credible to its members, to government and to the general community. This may require external referees on the competencies and industry appeals mechanisms to address members' complaints and a constant review to adjust the competencies to address changing requirements.

### **Sanctions**

Some see that a necessary component of an accreditation scheme is provision for sanctions to be installed on the basis that if the carrot does not work then the "stick" can be used.

What form those sanctions take vary but in essence, in commercial industries, they have as a basis some restraint of trade. The devolvement to an industry of sanction type powers is not granted lightly by the authorities and involves a complex provision for warnings and

appeal mechanisms. Again a necessary component of the sanction mechanism is external involvement, counselling and advice prior to any punitive action and a tribunal appeals structure, all of which is costly to install and maintain.

The cotton industry has had an extraordinary record of compliance with voluntary programs. This is partially through its structure and through the progressive nature of individuals being aware of industry responsibilities and the reasons for such programs. It can be argued that with the growth of the industry and tighter commercial margins the tools used in the past such as peer pressure may not be as effective. However the adoption of accreditation/sanction mechanisms must be debated thoroughly within the industry and installed if necessary by all sectors of the industry. The rate of adoption of a best management program will be a guide whether controls being put in place to service the INGARD technology should be extended to cover conventional cotton growing and what form they should take.