Pesticides - A Western Australian Overview

Report to the Department of
Conservation and Environment

prepared by

Catherine Jefferson

November 1985
"Bulletin 239"

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This and the attached reports are a result of the work undertaken by Catherine Jefferson as outlined in the work programme of May 1985.

The first attachment, Bulletin 239, is an information package for those involved with pesticides in WA and offers resources for future involvement. The second attachment includes discussions, recommendations and specific pesticide use details for the consideration of the Pesticides Advisory Committee. This report includes recommendations for the Department of Conservation and Environment.

The author feels that the pesticide situation in Western Australia would be ideally managed under the control of one piece of legislation and one body. This body would take into account the interests of health, occupational health, agriculture and the environment. It is not the author's place to suggest in which Department this function could be placed.

The co-ordination of registration, education, research, monitoring, and issues such as storage, transport, disposal and emergency action, should be dealt with through a committee with representation from the Departments of Health Occupational Health Safety and Welfare, Agriculture, the environmental departments, industry, the medical profession and the scientific community (tertiary institutions, other researchers). The Community Consultative Committee on Chemicals (CCCC) provides an example of the type of membership and mandate needed. A large committee may be cumbersome for rapid decision making but it does ensure adequate representation of issues. Sub-committees serve as a valuable means for considering and acting on individual issues.

It is recognized that pesticides are unlikely to be controlled by one department or by one piece of legislation in WA. Therefore, it is believed that raising the profile of the Pesticides Advisory Committee, and delineating its involvement in the numerous issues mentioned above, could be a viable alternative.

I believe that education and monitoring rank higher than legislation and both areas require considerable attention.

The public, and users of pesticides must be aware of what pesticides are, their benefits and the disadvantages of misuse. The potential impact of pesticides as either useful tools or hazardous substances should be recognized. Although education is a lengthy process it should prove more credible in the long term than developing and trying to enforce complex legislation.

The proposed Resource Information System which is being developed through the Pesticides Education Working Group will aid this education process. The Working Group now has a member from DCE and thus the opportunity to ensure that information developed is of a general nature, and not just health or agriculture related. DCE's involvement in the CCCC and the Western Australia Advisory Committee on Chemicals,

provide excellent channels for input of new issues to the Working Group and distribution of the material developed. It is important that issues identified as needing future consideration be addressed by the Working Group on a regular basis.

DCE should ensure that they continue to have input into the education programmes which are currently being developed for designated pesticide officers and the community. This will ensure they do not become biased towards health or agriculture. The programmes are being based on the pamphlets developed by the Pesticides Education Working Group and the booklet being produced by DCE.

Environmental monitoring is another area which requires consideration. Research and ongoing monitoring programmes should be established and could be developed by establishing a co-ordinating body to identify research and monitoring needs and support the programmes with funds. The co-ordinating body should have a wide range of inputs and should be the body responsible for control of pesticides.

Specific mandates should be identified for various government departments. For example, DCE could be responsible for environmental monitoring of water, air, soils and birds.

Baseline work on soils, waters and animals should be developed before heavy uses of new types of pesticides (organochlorines, organophosphates, carbamates, pyrethroids) are promoted. Representative sites throughout the state could be monitored on a periodic basis, perhaps every 3-5 years. In this way, if a problem in persistence, resistance, or leaching of the pesticide occurs, it will be detected early in its use, and expanded monitoring programmes can be developed if necessary.

Specific monitoring requirements include the impact of successive years of pesticides use on soil invertebrates, soil residues, and components of the food chain. If residues are identified, follow up studies on reproductive potentials may be required. This will identify if residues are affecting the population structure of birds, mammals, etc. Population studies may therefore develop as an indirect impact of pesticide use. The wheat belt could be the prime target area, due to DDT usage over large areas for a number of years.

As indicated elsewhere in the report, water analyses do not adequately address possible pesticide residues. Bioaccumulation potentials of a pesticide may not be recognized from a small, single sample of water. In situ bioassays of the aquatic environment or even of the terrestrial environment may prove more cost effective and meaningful.

Specific areas for monitoring which require attention are: rubbish tips for leachates; sandy coastal areas where pesticides are introduced into the irrigation systems;

and frequent use areas like wetlands where mosquito and argentine ant treatments occur, or council footpaths which are routinely sprayed. The monitoring of disposal sites and sandy coastal areas may prevent contamination of valuable freshwater sources and the subsequent costs incurred in developing alternative water sources. The monitoring of wetlands and public areas will help justify the continued use of pesticides, and establish the credibility of government departments in the public's mind.

The licensing system for industrial effluents should be linked with the major pesticide co-ordinating body. Effluents from pesticide manufacturing sites may be prime targets for monitoring programmes.

There is considerable expertise at WAIT, the Wildlife Research Centre (CALM), CSIRO, the Fisheries Department and the universities which could be tapped to ensure the success of these programmes.

DCE's Roles in Pesticide Issues

Education and monitoring require attention in WA and DCE has a role in each of these areas. I have established three levels of involvement for DCE in the area of pesticides: specific action; co-ordination; and as a watchdog. There may be some overlap.

Specific Action to be taken by DCE

- be kept on the mailing lists for Pesticide and Toxic Chemical News and other relevant bulletins or newsletters

- obtain the operation manuals from Westrail, Forests Department and Main Roads and be on their update list

- liaise with pesticide industry representatives to establish environmental information on pesticides

- keep the environmental data base updated

- continue with input to the Pesticides Education Working Group, the Bentley Technical College courses and the Pest Control Centre

- continue communications with CALM, the Water Authority and the Fisheries Department on pesticide issues

DCE as the Co-ordinator

- prepare an inventory of rubbish tips in WA (the 1985 questionnaire and verbal comments made during the study indicated that the Health Department does not have a good idea of the real situation)

- determine which tips are monitored and which tips should be monitored

- support and monitor mosquito/midge control programmes

- monitor bores in heavy pesticide use areas; an inventory of bores is required and the CSIRO work on pesticide mobility should be incorporated

- develop information on integration of pesticides and alternative methods for control

- educate the media on pesticide issues, as they are major public influencers

- a establish a committee to determine priority areas for research and pesticide monitoring (and to eliminate submissions from a host of sources with no justification of need)

DCE as the watchdog

- ensure that the experimental pesticide protocol is finalized and that evaluations have input from other departments

- ensure the addition of environmental protection requirements to the Pesticide Regulations

- urge that records of pesticide use be kept and submitted annually to some central body

- urge and follow up on implementing recommendations from this overview

There appears to be a feeling in the Agriculture and Health Departments, particularly in the Health Department, that there is a lot going on and "everyone" is aware of it. However, a meeting with representatives of DCE, Health and Agriculture indicated that Health Department employees may be aware, but communication with others is not always adequate.

It is necessary to develop a well balanced relationship between DCE, public interest groups and the pesticide industry, and to develop communications among all groups.

The Bentley Technical College courses require modification, taking into account the level of literacy of the average applicant, the purpose of the job, and the safety and handling precautions required when using pesticides.

It is important not to foster the idea that WA is unique and that disasters cannot occur here. Careful attention to overseas monitoring and research may help prevent potential environmental pesticide problems in WA. This is particularly important when Australia and WA are using certain pesticides which are restricted for use elsewhere in the world.

PROPOSED WORK PLAN FOR CATHERINE JEFFERSON

(APRIL - NOVEMBER 1985)

1. INTRODUCTION

Catherine Jefferson has had considerable experience in the area of pesticides regulation, monitoring and compiling of educational material related to pesticides in Canada.

It is proposed that, given support and co-operation from Western Australia's Departments of Health, Agriculture and Government Chemical Laboratories she will work from the Department of Conservation and Environment to undertake the following exercises because:

> as an outsider with pesticide experience yet not having an historical affiliation with WA's governmental departments she can review pesticide related matters in WA objectively, identify gaps (ie monitoring, education material) and suggest possible remedies and new initiatives.

The areas of environmental monitoring and general pesticide education have been identified as requiring some attention. These first two areas have been given priority in Catherine's work programme, and this document explains the manner in which she will proceed given the approval of the Departments involved.

Please note in point 2 subsection 6, that progress reports will be circulated to all involved at various stages in order that the aims, as perceived by each group, are addressed satisfactorily.

2. MONITORING PESTICIDES

The monitoring of pesticides in the environment has not been well addressed in the past in Western Australia. In order to work towards adequate but efficient monitoring programmes some background work should be done.

(1) An inventory of pesticides used in WA will be established to include:

- pesticides used
- approximate geographical areas of use
- quantities of pesticide used
- general method of use (aerial, spray boom, granular applications)

(2) This will be accomplished by:

- examining lists of registered pesticide products (active constituents)
- by consulting with the Department of Agriculture and agricultural advisers
- by consulting with the Department of Health
- by consulting with other agencies who may have done or are dong surveys of pesticide use in WA

(3) Given what is used, quantities used and where the high use areas are, a list of pesticides considered to be priority* for Western Australia can be developed.

(4) Together with this list, priority pesticide lists from other parts of Australia, problem pesticides in other countries, and pesticides determined by public pressure will be examined, and a list will be established for close scrutiny(ie physical chemical properties, toxicity, and environmental experience) will be collated as a start to an environmental data base.

(5) Monitoring programmes can then be developed based on identification of a heavy pesticide use area, a problem pesticide, and/or combination with an environmentally sensitive area.

(6) Progress reports will be done for circulation to appropriate committee members for comment before the stage here marked as (4) and (5) are started.

*priority in this context is deemed to mean those pesticides of greatest significance to be considered first for potential monitoring programmes.

3. EDUCATION (to be done concurrently)

The committees already established to develop educational material will be contacted to develop educational material with emphasis on environmental implications of pesticide use.

(1) Pesticide Handbook to be compiled with aid from the Canadian experience, current information and internal existing documents by the Health Department and the Agriculture Department.

(2) Slide sets to be compiled based on the Pesticide Handbook structure.

(3) General pesticide educational material (as outlined on the attached pages).

4. LEGISLATION

To work in developing quidelines or compiling existing guidelines for use of pesticides in specific areas. To liaise with Agriculture, Health, etc, in order to achieve this result.

5. REPORTING PROCEDURE/IMPLEMENTATION

The above work programme is large and broad in scope for a relatively short time. However, it is hoped that Catherine can translate her Canadian experience fairly quickly and where agreed get a number of the suggested projects started. Then, by working with appropriate people and committees in the State Government system such initiatives should be able to be effectively continued and completed.

Additionally, Catherine will provide progress reports during her work and on completion a brief overview report which summarises her views of the WA approach and makes suggestions for future directions and priorities.

GENERAL PESTICIDES EDUCATIONAL MATERIAL

1. Proper Application Techniques (pesticides for land, air and water)

   - agriculturalist, forester
   - homeowner
   - commercial applicator (government employees as well).

2. Disposal of Pesticide

3. Disposal of Containers

4. Storage of Pesticides

   - pamphlets for homeowners, storeowners, agriculturalists, others
   - warning placards

   *Notification to fire brigades as to what, where, how much, is stored (quantity minimum).

5. Pesticide Handbook - available to all pesticide applicators, agriculturalists, homeowners, etc.

   This handbook would be pocket size to include sections on:

   generally what is a pesticide; basic types (OP, OC, carbamates, etc).

   - safety in handling
   - storage
   - disposal
   - transportation
   - symptoms of poisoning
   - mixing; types of formulations
   - drift, near water, aerial spraying
   - the importance of equipment maintenmance and calibration
   - list of other available brochures
   - relative toxicities
   - agencies involved, contact numbers.

6. Slide sets of various combinations and permutations of the Pesticide Handbook.

   - agriculturalists, environmental groups, fire brigade, industry, educational institutions.

   *Extremely useful with cartoons, words, general visual impact if the audience is non-English speaking or of a lower educational level than expected.

7. Label brochure - all groups

   - to simplify the label of a product so the user understands the label's importance and knows it is there to be read.

8. Re-entry information is needed - homeowners, commercial applicators.