AQUATIC HERBICIDE USE — ADMINISTRATIVE ASPECTS

A. J. FOLEY

Agricultural Chemicals Board, MAF, Wellington

Summary

Legislation relating to the use of herbicides in aquatic situations is summarised. The factors leading to the formation of an advisory committee to the Agricultural Chemical Board on chemical control of aquatic weeds and its functions are described. A guide for the use of herbicides in and near bodies of water has been published and its provisions, if followed, should obviate the occurrence of herbicide contamination problems. A clearance procedure for testing experimental herbicides in aquatic situations is detailed.

INTRODUCTION

The need for and effectiveness of herbicides for control of aquatic weeds in drainage channels, lakes and ponds has been reported by Matthews (1962) and other authors. With extensive use of water resources for diverse purposes these materials need to be applied judiciously if problems arising from herbicide contamination are to be avoided.

Various legislation has been promulgated limiting the introduction of chemicals into water but little information is readily available for those persons who are directly involved in aquatic weed control programmes on the materials that can be applied and the factors that will ensure safe use.

Unless otherwise stated "Board" refers to the Agricultural Chemicals Board and aquatic weed control means control of floating and submerged weeds rather than emergent or ditch bank weeds.

LEGISLATION

Herbicide use in aquatic situations is limited by the following Acts and Regulations:

Health Act 1956

It is an offence under this Act to directly or indirectly pollute water supplies within the district of any local authority so as to make it dangerous to health. A Medical Officer of Health may direct a local authority to cease supplying water from any source so polluted.

Freshwater Fisheries Regulations 1951 Amendment No. 11

Wildlife Regulations 1955 Amendment No. 6

These regulations make it an offence to introduce a substance that is poisonous or injurious to fish, wildlife, their food sources and fish spawning grounds.

Water and Soil Conservation Act 1967

Under this Act "water rights" are required for the discharge of "waste" (which includes herbicides) into "natural water". Natural water includes fresh water, ground water, artesian water, sea water, geothermal steam, water vapour, ice and snow within the outer limits of the territorial sea of New Zealand but does not include water in a public authority water supply system or tank (farm ponds would be included as natural water).

Proc. 28th N.Z. Weed and Pest Control Conf.

Topical Issues and Aquatic Weeds

AQUATIC WEEDS COMMITTEE

With continuing requests from such bodies as Catchment Authorities and Drainage Boards for advice on conditions that should be imposed on herbicides intended for aquatic weed control and desirability for guidelines for users of these materials, there was obviously a need for the formation of an advisory committee. Such a committee has now been formed (Aquatic Weeds Committee) which reports to the Board. Membership is from various government departments, Industry and Regional Water Boards.

The committee initially met on an *ad hoc* basis to consider what existing herbicides should be cleared for use and draw up a code of practice for users of aquatic herbicides. Its broad representation should enable appropriate recommendations to be made in the future affecting the use, limitations and evaluation of aquatic herbicides.

AQUATIC HERBICIDE GUIDE

A 'Guide for the Use of Herbicides on Weeds in and near Water-course, Ponds and Lakes' has recently been published by the Board as a result of deliberations of the Aquatic Weeds Committee.

The need for a publication such as this has become apparent over recent years with requests being received from various quarters as to the materials that may (or may not) be applied to aquatic environments (Anon., 1973). In addition residual and growth regulator herbicides have been used for aquatic weed control (Eady 1972). A complaint of 2,4-D use in a wildlife estuary and incidents involving 2,4-D and picloram contamination of irrigation water have also been received.

The Guide is primarily aimed at those persons directly involved in the design and execution of aquatic weed control programmes. It lays down the legislative requirements together with relevant information on the safe use and principles behind the water right requirements for the cleared chemicals. There are three appendices. One specifies those chemicals for which water rights could be issued for aquatic weed control and the conditions that would apply. Another covers use of herbicides for emergent vegetation control (as a carefully directed application) and includes a listing of materials that can be applied to dry drains and ditches. This list also gives an indication of the time that should be allowed to elapse before the channels carry water. The third appendix lists addresses of Health Department, Regional Water Board and Ministry of Agriculture and Fisheries offices.

EXPERIMENTAL AQUATIC HERBICIDES

In the past there has been no agreed procedure by which experimental materials could be evaluated as aquatic herbicides. Water rights are required for field evaluations to be conducted and with this in mind the Board, on the advice of the Aquatic Weeds Committee, has issued to agricultural chemical proprietors a clearance procedure by which experimental materials may be tested. In essence the procedure is as follows:

1. An application for experimental registration is made in the normal way and registration is granted with a condition that a water right to discharge must be obtained before testing is conducted.
2. It is over to the proprietor to decide on an experimental programme and then apply to a Regional Water Board (RWB) for a water right providing details as required by the RWB e.g. the chemical, proposed use (e.g. ponds, ditches etc), quantities, whether drainage channels lead from proposed treatment sites, mode of application etc.

Topical Issues and Aquatic Weeds

3. Should the RWB require further information before issuing a water right it would approach the Board who would refer all the available technical information on the active ingredient together with details of the proposed experimental programme to the Aquatic Weeds Committee.
4. After considering the data the Committee would advise the RWB of its suggested conditions and these would (if acceptable to the RWB) be passed on to the applicant with the issue of a water right.

If a proprietor is contemplating evaluating a product which already has full registration, re-registration as an aquatic herbicide is not essential; however it is recommended that application for an experimental registration, with a single recommendation for aquatic weed control on the proposed label, be lodged as for a new active ingredient and the procedure as described above would follow.

DISCUSSION AND CONCLUSIONS

The described clearance procedure for testing experimental aquatic herbicides should ensure that problems will not arise from subsequent use of treated waters. It is important though that as much information as possible is submitted with the original application for experimental registration. In particular studies on fish and invertebrate toxicity; effects on plankton; residues in fish, water and bottom muds; metabolism in aquatic organisms are valuable. While overseas studies are of considerable value, specific local data may be necessary.

Normally experimental evaluations will be limited to small areas and usually to bodies of standing water. However for evaluation of herbicides in moving water (e.g. drainage ditches and irrigation channels) materials will need to be capable of 'on the site degradation' i.e. residual chemicals that under normal conditions take weeks or months to become herbicidally degraded or deactivated would be unlikely to gain clearance.

Herbicides are a valuable tool in controlling aquatic weeds and will possibly have an even more important role in the future. But divergences from recommended practices can have dire consequences for subsequent users of the treated water and provides ammunition for those persons striving to arouse adverse public opinion. It is therefore imperative that users of these materials are fully aware of their obligations and apply the products responsibly.

Adequate legislative safeguards are in existence but these are only complementary to the responsible practices of applicators.

Subject to the granting of water rights to discharge and provided the provisions of the Guide are followed it is unlikely problems will arise through the use of herbicides for aquatic weed control programmes.

REFERENCES

- Anon., 1973. Aquatic Weeds Course Proceedings. Report of a conference at Palmerston North on aquatic weed problems as they relate to drainage systems.
- Eady, F. C., 1972. Report on aquatic weeds in New Zealand drainage systems (Unpublished).
- Matthews, L. J., 1962. Aquatic weed control, *Proc. 15th Weed Control Conf.*: 198-201.