BOOK REVIEWS

RECOMMENDATIONS FOR THE CONTROL OF PESTS
Technical Report 83/84, D.P.I., Konedobu

THE SAFE AND EFFICIENT USE OF PESTICIDES
Rural Development Series Handbook, No.18, D.P.I., Konedobu

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We have decided to review these two recent publications in one article because they should be used together.

In Papua New Guinea, pesticides are becoming more and more widely used. We estimate that at least 190 different types of pesticides are used or recommended for use in this country. These are available in more than 420 different formulations, e.g. sprays, dusts, granules, aerosols, fumigants.

Many of the compounds used are very toxic (poisonous), e.g. aldicarb, dieldrin, mevinphos, monocrotophos, parathion. Others are much less poisonous, e.g. pyrethrins. Some of the compounds stay in the environment for a long time, e.g. DDT. dieldrin, lindane. Some do not leave long lasting residues, e.g. many of the organophosphates and the pyrethrins.

Table 1 shows the amounts and values of pesticides known to have been imported into Papua New Guinea in 1982.

We believe that the true amounts of pesticides imported into Papua New Guinea are much higher than shown in Table 1. Therefore, it is an appropriate time for the entomologists in

TABLE 1. PESTICIDES IMPORTED INTO PAPUA NEW GUINEA DURING 1982

Type of pesticide	Weight (kg)	Value (Kina)
Insecticides	200,559	468,088
Fungicides	36,516	49,553
Herbicides (weedkillers)	307,484	778,102
Rodenticides (rat killers)	8,708	15,534
Nematocides	2,341	3,054
Molluscides	1,642	705
Other pesticides	21,674	57,847
TOTALS	578,924	1,372,883

(Information supplied by Bureau of Statistics)

D.P.I. to bring out these two most valuable booklets. They are meant for use by agriculture and health workers who work in the field in Papua New Guinea.

Recommendations for the Control of Pests, edited by Brian Thistleton provides the current D.P.I. recommendations for the cultural biological and chemical control of insect and rodent pests of the major crops grown in Papua New Guinea, and insects of concern to public health.

The book clearly states that cultural and biological methods are preferred but if they fail, then pesticides are required. Most sensibly, only those insecticides known to be less toxic are recommended. Those insecticides that are classified by WHO as extremely or highly dangerous are not recommended. The persistent insecticides that have been included are clearly marked with advice for extra care to be taken to minimise environmental contamination.

Altogether, only 31 chemicals are recommended; this is less than half those insecticides and rodenticides presently in use in Papua New Guinea. For the use of pesticides other than those included in the book (such as the more toxic ones) the editor states that recommendations and advice will only be made by D.P.I. entomologists if the need arises and if they are satisfied that the user has the necessary training to handle the more dangerous chemicals.

One point which has not been stressed and which should be given consideration is avoiding the use of D.D.T. for agricultural purposes.

D.D.T. is used to control mosquitoes in the malaria control programme. The programme will only be successful as long as the mosquitoes do not develop resistance to D.D.T. If D.D.T. is used regularly on crops, the mosquitoes will be exposed to the chemical more often, and will build up resistance more quickly.

As indicated above, this book only includes insecticides and rodenticides and contains no recommendations for the control of fungi or weeds; also missing is control of structural timber pests. As you can see from the table above, the greatest amounts of pesticides used in Papua New Guinea are the herbicides (weedkillers), e.g. paraquat, (the most used pesticide in Papua New Guinea today). We therefore look forward to the promised later edition which will include the necessary recommendations on the control of fungi and weeds.

In the meantime, this book will serve its stated purpose well. Its general organisation is excellent; the presentation is clear and it is well indexed. It also contains a most useful list of Papua New Guinea references relevant to the control of insect pests and sets of tables enabling accurate calculation of amounts of chemicals to be used. Finally it lists a clear set of rules which should be followed for the safe use and handling of insecticides.

The second book, *The Safe and Efficient Use of Pesticides* by John Sutherland, should sit on the shelf beside the recommendations. This book describes pesticides, how to apply them, the types of nozzles to use on the spray equipment, how to calculate the correct amounts to apply, how to use these toxic chemicals safely and what to do in cases of accidental poisoning. The book is clearly presented. It contains useful diagrams and has a glossary

for those unfamiliar with the technical terms.

The usefulness of a pesticide depends not only on the type of chemical or active ingredient but also on the formulation, the concentration, the spraying method and the time of application. This is well emphasized in the book. However, one important point that is missing is that the pest species must be correctly identified before the correct chemical can be chosen.

The safety procedures are well covered although a number of small adjustments could be made in a second edition. Perhaps an extra section on antidotes could be included; not all pesticide users work near hospitals!

This book is an excellent publication which fills a great need in Papua New Guinea. Over the last few years, cases of poisoning due to pesticides have been reported here. These included poisoning by paraquat, mevinphos, dimethoate, propoxur, dichlorvos and coumaphos. It is hoped that this book will be widely distributed, e.g. to high schools and agricultural colleges which use pesticides, and through agricultural extension officers, to other users to help minimise such poisonings. Perhaps a Tok Pisin edition could be written.

We would also like to suggest that this book is used as a basis for a one or two week practical course for people who use pesticides. Such a course should be organised jointly between the Department of Health, Department of Primary Industry, private industry and the university. (This has already been done in two other South Pacific countries, Fiji and Guam).

In conclusion we highly recommend both these books to all pesticide users in Papua New Guinea.

Editor's notes

Work on translating 'The Safe and Efficient Use of Pesticides' *into Tok Pisin and Motu is now underway at Publications Section, D.P.I., Konedobu.*

D.P.I. has already held two short courses on the safe and efficient use of pesticides at the Highlands Agricultural College. More are planned for the future.

These courses are based on a more detailed Inservice Training Manual which is available to all course participants.

Further information about the courses and how to apply to join one can be obtained from:

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