

# PARAQUAT POISONING IN PAPUA NEW GUINEA

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## INTRODUCTION

People in Papua New Guinea have died after drinking the weed-killer Gramoxone. It has been suggested that it should be banned from this country. Gramoxone is the trade name of a formulation of a chemical called paraquat.

Up to October 1980, 32 deaths had been reported in the Western Highlands, of people who had drunk paraquat. People in other provinces of Papua New Guinea and overseas have also died of paraquat poisoning.

This subject is very important to farmers in Papua New Guinea because paraquat is a very effective weedkiller. It is used widely by tea and coffee growers and other crop producers on plantations and by smallholders. It is also being used to help control the water weed *Salvinia* in the Sepik River.

In this article I am going to set out some of the things the government has to consider when deciding whether to ban paraquat. This should help people understand the reasons for the government's actions. It should also encourage people to think about their own responsibilities when using imported technology.

## HOW POISONOUS IS PARAQUAT?

Paraquat is extremely poisonous. The commercial preparation that farmers buy contains about 20% paraquat. As little as one tablespoonful (15 ml) of this will kill a man or woman who drinks it. If someone drinks paraquat, nothing can be done to save his or her life unless the right treatment is given very quickly.

Amongst the agricultural chemicals, only a few are more dangerous than paraquat if they are drunk. However, paraquat does not poison the environment as it breaks down very quickly when it reaches the soil.

Although paraquat is a strong poison, it is quite safe to use if care is taken. The concentrate must be handled carefully: wear protective clothing, and rubber gloves and goggles.

For spraying weeds, the concentrate has to be mixed with a lot of water (usually 200 parts of water to 1 part of concentrate). The dilute spray solution is not very dangerous. However, workers using the spray should take the same care as with any other chemical spray:

1. Do not spill on the skin. Wash at once with soapy water if any is spilt by accident.



2. Do not smoke, eat or drink while working with spray.
3. Spray in such a way that you do not breathe in spray mist.
4. Wash your whole body very thoroughly with soap and water as soon as you finish spraying, and before you smoke, eat or drink.
5. Wash the clothes you wear while spraying separately from other clothes. Throw the washing water away at once.

For more information about how to use pesticides safely see the Rural Development Series Handbook No. 18: *The Safe and Efficient Use of Pesticides* by J.A. Sutherland (D.P.I., 1983).

#### HOW DO PARAQUAT POISONINGS HAPPEN?

There are three main causes of poisoning:

##### Intentional poisoning

People have drunk paraquat because they wanted to kill themselves. Some cases of paraquat poisoning may have been murder.

##### Drinking by mistake

Several people have drunk paraquat thinking it was a drink of lollywater. This usually happens when paraquat has been stored in a drink bottle. It is dark brown and can easily be mistaken for cola or even wine.

NEVER PUT ANY KIND OF POISON IN A DRINK BOTTLE

##### Ignorance

Sometimes people do not know what paraquat is, or that it is dangerous. One man died after

rubbing it into his beard. He had probably heard that it is a strong medicine. People have drunk paraquat as a suicide gesture. They probably did not realise that they could not be treated to save their lives. There has been a poisoning where a paraquat container was used for drinking water.

ALWAYS BREAK OR BURN PESTICIDE CONTAINERS WHEN THEY HAVE BEEN EMPTIED SO THAT NO ONE CAN USE THEM FOR FOOD OR DRINK.

#### DOES PAPUA NEW GUINEA NEED PARAQUAT?

Weeds can of course be controlled without chemicals. They can be pulled out, or dug out with a spade or hoe. However, it is much easier to use a weedkiller such as paraquat. The reason why paraquat has become so dangerous is that it is such a good weedkiller that many people want to use it. Some other weedkillers are just as poisonous as paraquat, but they never cause deaths because hardly anyone uses them.

There are many different kinds of chemicals that kill weeds and they act in different ways. Some are sprayed on the soil and kill seedlings as soon as they germinate. Most are sprayed on the leaves. Some act very slowly and it may be weeks before the plants start to die. Paraquat acts very quickly. You can usually see the sprayed leaves starting to dry up 2 to 3 hours after spraying. The leaves will be quite brown and dry within a few days. Because it acts so quickly, paraquat kills weeds even if rain falls soon after it has been applied. This is very important in our wet country.

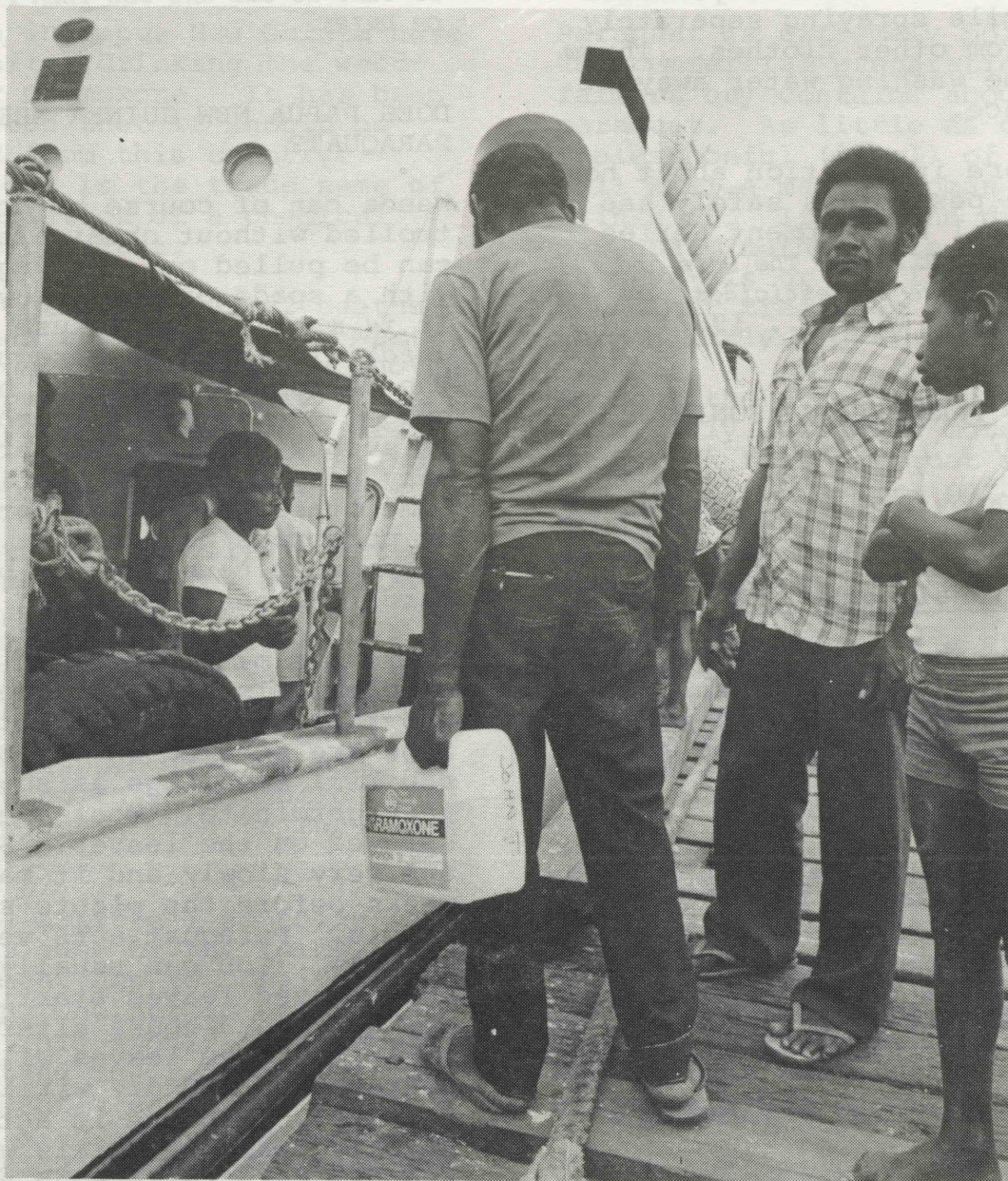
Paraquat usually only affects



the leaves that it touches. It does not affect stems with hardened brown bark. Because of this, you can spray and kill weeds growing between coffee, tea, cocoa, rubber, oil palm and coconut trees without doing any damage to the trees.

In Papua New Guinea paraquat was first used by plantations more than 15 years ago. They found it was cheaper to kill

weeds by spraying than to pay workers to dig them out. But the workers also saw it was easier to spray weeds than to dig them out. Some of them used paraquat in their own coffee gardens. So today paraquat is used by some village people as well as by plantations. But many of the village people do not understand how careful they should be with the chemical.



*This man was seen boarding a ship in Rabaul. He was using an old Gramoxone container to carry his drinking water. This could cause poisoning to happen. ALWAYS BREAK OR BURN PEST-ICIDE CONTAINERS WHEN THEY HAVE BEEN EMPTIED.*

(Photo: A.K. Sharp )



Paraquat and other agricultural chemicals are just a small part of the western technology introduced to Papua New Guinea over the last 50 years. One effect of western technology, especially medicine, has been to increase the population. If this country is to feed its growing population, we must accept modern technology in agriculture, as well as in medicine transport and other areas. But this also means that our people must learn the right way to handle modern technology because it is often dangerous. Things like motor cars, electricity, circular saws, medicines and agricultural chemicals can make our lives much easier when we use them the right way but they can - and do - kill people when they use them carelessly or in the wrong way.

Our farmers need to learn to handle agricultural chemicals in the right way, but we must also try to make them as safe as possible.

It was agreed by D.P.I. and the Health Department in 1980 that the form in which paraquat was being sold was too dangerous. New restrictions were recommended.

#### PAST RESTRICTIONS ON SELLING PARAQUAT

The following restrictions existed before 1980 on the sale of paraquat:

1. Paraquat could only be sold to people known by the seller to be concerned with farming.
2. The seller had to store paraquat separate from food (for man or animals)
3. Paraquat had to be sold in secure packages with a large label saying POISON in red

letters. The label also had to state the special purpose of paraquat and that it should not be used for anything else.

The main reasons why these restrictions did not have much effect were:

1. No one checked to make sure that sellers obeyed the rules.
2. Many people could not read the English labels.
3. Paraquat could only be sold to farmers, but not all farmers know how to handle agricultural chemicals safely.
4. Most poisonings happened after the paraquat passed out of the hands of the person who bought it originally.

#### NEW RESTRICTIONS

In December 1980, new restrictions were put on the sale of paraquat. These should help reduce the chances of people dying from paraquat poisoning.

1. Paraquat can be sold only if it contains an emetic and a stencher. An emetic is a substance which makes a person vomit. If paraquat is drunk, the emetic should make the person vomit out the poison before it has time to kill him or her. A stencher gives the preparation a very unpleasant smell, so people will realise that it is not a drink. Of course, paraquat is still just as poisonous and care must be taken when using it. But adding the emetic and stencher makes the chances of accidental poisoning much smaller.



2. Only people who are licenced to sell poisons are allowed to sell paraquat. Every sale must be written in a register, with the name and address of the person who bought it. The buyer must sign his name. If he can not sign, he is not allowed to buy it.

#### WHAT ELSE CAN BE DONE?

The new restrictions should reduce the risks of paraquat poisoning but more is needed. Educated people, plantation owners and didimen all have an important part to play.

For example:

1. Always take great care with pesticides, medicines and other dangerous substances. Keep them where children cannot reach them. Keep liquids that will burn (petrol, kerosene) a long way from fires and cigarettes. Keep all dangerous substances away from food and drinks.
2. If you own any poisons, read the instructions for

use very carefully. Follow the instructions exactly. Always keep pesticides locked in a safe place.

3. Never put a pesticide into any other container (except for its final use - such as mixing Gramoxone in a sprayer).
4. If you supervise people who must work with dangerous substances, teach them the correct methods very carefully. Repeat the instructions often. If someone does not follow the instructions he should not be allowed to work with the poison.
5. Take every opportunity to teach other people - children, village people, workers - what substances are dangerous and how to handle them safely.

The Department of Public Health and the Department of Primary Industry are making new laws to better control the use of Gramoxone and all other dangerous agricultural chemicals in Papua New Guinea. These should soon come into effect.