PLANT PATHOLOGY NOTE: NO.14

RIDOMIL TOLERANCE

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Ridomil is a systemic fungicide which is very effective in controlling plant diseases caused by the *Phytophthora* fungus and other related fungus species. At Keravat we have been testing Ridomil for two years against black pod disease of cocoa and have found it to be the best of the new systemic fungicides. It is slightly more cost effective than copper fungicides and is by far the best treatment for cocoa canker and seedling blight.

Seedling blight

There have been recent reports of tolerance developing to Ridomil in other countries. The aim of this note is to bring growers up to date with the current situation.

Tolerant strains of *Phytophthora* and other related fungi have been developed in laboratory studies in several countries.

In 1979, we heard reports from Greece and Israel of a breakdown in the control of cucumber downy mildew due to the natural occurrence of a Ridomil tolerant strain of the fungus.

In 1980 'the worst potato blight for years' occurred in parts of North West Europe. Ridomil was used to control the disease in Ireland, Holland and Switzerland. Resistance developed rapidly in Ireland, Holland, Switzerland (and Zimbabwe) resulting in a breakdown of blight control.

In the United Kingdom, by comparison, Fubol (Ridomil-Dithane mixture) was used against potato blight. In a nationwide survey afterwards, no Ridomil-tolerant strains of blight were found. Fubol was later tried in Irish potato fields but did not cure the disease. This demonstrated that even a Ridomil mixture does not work once Ridomil tolerance has appeared.

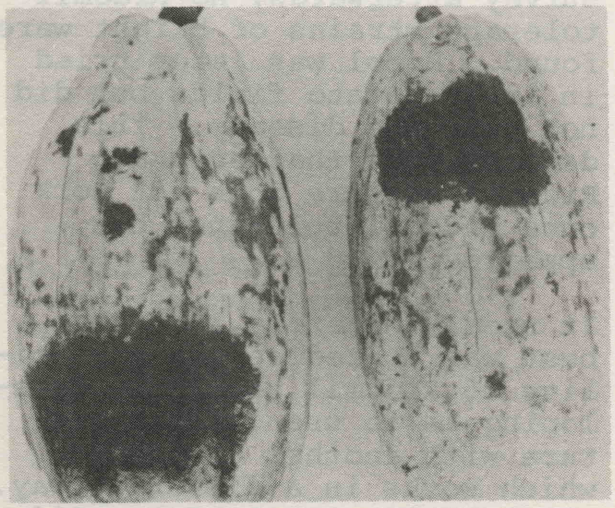
It seems therefore that the best way to reduce the possibility of Ridomil tolerance developing is to use it in a mixture with another fungicide which works in a different way. Ciba-Geigy have withdrawn Rido-

mil 25 WP from the market in almost all countries in the world and have replaced it with Ridomil mixtures.

A special case was made for Papua New Guinea. Ridomil is still available here for the following reason. Control of potato blight and diseases of protected crops involves very intensive use of fungicides. On cocoa, our applications of Ridomil are much less intensive and we use much longer spraying intervals than on any other crop. It has been argued that Ridomil tolerance would be very unlikely to occur quickly in our situation.

However, the Department of Primary Industry is currently conducting a survey of Ridomil sprayed cocoa blocks to see if any tolerant strains of *Phytophthora* have developed. No Ridomil tolerance has been detected in the 140 samples so far collected. We will continue the survey.

We expect to be conducting small scale trials at Keravat to evaluate Ridomil mixtures. A Ridomil - copper mixture will probably be more expensive to apply than Ridomil alone. We hope to have some information on their relative cost effectiveness by this time next year.



Black pod disease

Cocoa canker

If any growers who have been regularly using Ridomil for black pod control, notice a breakdown of control, we should like them to contact the Officer-in-Charge at L.A.E.S., Keravat. We will then arrange to test pod samples from the suspect areas.

Canker and seedling blight are caused by the same *Phytophthora* fungus as black pod. At present there is no suitable alternative to Ridomil for their control. A Ridomil mixture would be of no added benefit as the treatment relies on the systemic action of Ridomil for its effect. So, to protect the use of Ridomil for canker and seedling blight control it is likely that we shall be recommending, in due course, either a Ridomil - copper mixture or copper alone for black pod control.

For the time being, however, we still strongly recommend growers to use Ridomil for black pod control on their better blocks and we will continue to survey sprayed areas.

FURTHER READING

McGregor, A. (1980). Black pod disease of cocoa. *Harvest* 6(3): 157-160.

Prior, C. (1981). A new treatment for bark canker on cocoa. *Harvest* 7(2): 92.

FURTHER INFORMATION

If anyone requires information on black pod, canker or seedling blight control, they should write to the Agronomist-in-Charge at L.A.E.S., Keravat who will arrange to send current copies of the relevant bulletins.

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