

Anilinopyrimidines  
Working Group

# FRAC

FUNGICIDE RESISTANCE  
ACTION COMMITTEE

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## INTRODUCTION

The anilinopyrimidines (APs) are a group of fungicides highly active against a broad range of fungi. Commercialised APs include cyprodinil, pyrimethanil and mepanipyrim. The mode of action includes inhibition of methionine biosynthesis and secretion of hydrolytic enzymes. APs are cross resistant, but show no cross-resistance with other fungicide groups.

The FRAC-AP group discusses the sensitivity situation and use guidelines for control of Botrytis and Venturia.

The use of APs for control of Black Sigatoka is included in the FRAC banana working group.

[http://www.frac.info/WG\\_Bananas/bananas\\_wg.html](http://www.frac.info/WG_Bananas/bananas_wg.html)

### **Update following the latest FRAC-AP meeting held on December 06th, 2005:**

The current sensitivity status of Botrytis in vines and Venturia in apple was discussed.

### **Botrytis:**

Normal disease pressure was present at commercial vineyards in Europe, Australia and New Zealand in 2005.

Sensitivity monitoring in commercial vineyards was carried out in Europe New Zealand and Australia. All data available up to date show that the frequency of resistant isolate continues to remain low in 2005.

Products, applied following the FRAC-AP guidelines, maintained very good performance in the field, after more than 10 years of commercial use.

Nevertheless, evidence from previous field and laboratory trials has shown that there is a medium resistance risk of Botrytis to APs. The fact that resistant isolates can be found in commercial vineyards, albeit at low levels, reinforces the importance of strict adherence to the FRAC-AP guidelines to control Botrytis.

### **Venturia:**

Moderate to high disease pressure was present throughout the season at commercial orchards in Europe in 2005.

Sensitivity monitoring in commercial orchards was carried out in Europe. Resistant isolates were found at low frequency. Samples showing resistance were detected in the following countries: Germany, France and Switzerland. The field performance of spray programmes was generally not affected.

Evidence from previous field and laboratory trials has shown that there is a medium resistance risk of Venturia to APs. The fact that resistant isolates can be found in commercial orchards, albeit at low levels, reinforces the importance of strict adherence to the FRAC-AP to control Venturia.

In 2005, AP-containing spray programmes continued to show good performance in commercial orchards.

### **General Guidelines**

The guidelines for the use of AP fungicides against Botrytis grey mold were not changed on account of the stable situation recorded in the monitoring studies.

The Venturia guidelines were modified to take into account the development of resistance observed at a small number of sites in Europe.

The purpose of the use guidelines for AP containing products is to maintain the sensitivity in the target pathogens and to prevent crop losses due to the emergence of resistant pathogen populations.

Where different AP-containing products are used in one season, the cumulative number of applications with cyprodinil, pyrimethanil or mepanipyrim-containing products must not exceed the maxima as mentioned below.

The guidelines were reviewed during the meeting on December 06th, 2005.

### **Botrytis Guidelines**

Where two treatments are made per season, the number of applications of AP-containing products is limited to one.

In situations where up to six Botrytis treatments are made per crop and season, a maximum of two applications with AP-containing products are recommended.

In specific situations where seven or more Botrytis treatments are required per crop and season, a maximum of three applications with AP-containing products is recommended.

For specific crops and products, follow use recommendations of individual companies.

## **Venturia Guidelines**

When AP solo products are used, apply a maximum of four sprays per season. Where spray programmes include AP-containing mixtures, the maximum is five treatments per season. The mixture partner must be an effective scab fungicide. In locations where resistance has been reported, it is recommended to use APs only in mixture up to a maximum of 4 times per season.

Individual products should always be used at recommended dose rates and during the period when they are most effective.

Curative use only in conjunction with reliable scab warning systems.

## **Communication plan**

- ☞ Recommended methods for AP fungicide sensitivity testing will published first quarter 2006
- ☞ 2006 meeting will be held Tuesday the 5<sup>th</sup> of December.

## **Contact**

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