Sterol Biosynthesis Inhibitor (SBI) Working Group - Minutes

Annual Meeting 2006
Protocol of the discussions and recommendations of the SBI working group of the Fungicide Resistance Action Committee (FRAC)

Date of main WG meeting:	11th October 2006
Date of 2nd meeting with monitoring data update:	28th November 2006
Venue of the meetings:	Bayer CropScience AG, Monheim, Germany
Hosting company:	Bayer CropScience AG

Participants of the working group meetings October and November 2006:

BASF	Kristin Klappach Martin Semar Gerd Stammler
Bayer CropScience	Friedrich Kerz-Möhlendick Andreas Mehl Klaus Stenzel (Chair)
Dow	Greg Kemmitt
Du Pont	Jean-Luc Genet Robert Bird
Isagro	Osvaldo Puppin
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Cereal Diseases

1. DMI and Amines : Cereal Diseases

1. 1. Wheat

1.1.1. Leaf Spot (*Mycosphaerella graminicola* / *Septoria tritici*)

Presentation of monitoring data: BASF, Bayer CropScience, Syngenta

- Disease pressure in 2006 was heterogeneous in Europe but high in the UK.

- DMI's field performance was generally good when used according to the manufacturers and FRAC recommendations.
- After the slight increase in the frequency of less sensitive isolates from 2002 to 2004, the situation has stabilised in 2005 and 2006.

1.1.2. Powdery mildew (*Blumeria graminis* f.sp*. tritici* / *Erysiphe graminis* f.sp*. tritici*)

Disease pressure was medium to high across Europe.

DMI's

Presentation of monitoring data: Bayer CropScience

- No complaints from field use in practice. The performance of DMI based products was as expected.

- Sensitivity data being presented confirmed that the situation was generally stable remaining in the range of variability seen over the past 10 years.

Amines

Presentation of monitoring data: BASF, Bayer CropScience

- Field performance of amine based products was good with no complaints in practice.

- Sensitivity data being presented confirmed that like with DMI's the situation was generally stable remaining in the range of variability seen over the 10 years.

1.1.3. Wheat brown rust and wheat yellow rust (*Puccinia tritici*na and *P. striiformis*)

Presentation of monitoring data: Bayer CropScience

Brown rust disease pressure was high in Belgium, Germany and UK, low to moderate in the rest of Europe. Yellow rust incidence was high in UK.

Performance of DMI's on both brown and yellow rust has been maintained. Sensitivity data from 2006 for wheat brown rust showed that the sensitivities in 2006 were in the range of those of the last years.

1.1.4. Eyespot (*Tapesia* spp, syn. *Oculimacula* spp.)

Presentation of monitoring data: Bayer CropScience

Sensitivity data have been presented for prothioconazole (W and R types). Between 2003 and 2006 there is no change in the sensitivity of both types, stable situation has been observed during the last 4 years.

1.1.5. DTR / HTR (*Pyrenophora tritici-repentis*)

Presentation of baseline monitoring data from Bayer CropScience.
First year of monitoring started.

1.2. Barley

1.2.1. Powdery Mildew (*Blumeria graminis f.sp. hordei* / *Erysiphe graminis* f.sp. *hordei*)

In 2006, disease pressure was generally moderate.

DMIs

Presentation of monitoring data: Bayer CropScience

- Sensitivity data were reported for prothioconazole. The sensitivity of the populations stayed in the range of normal variation.

Amines

Presentation of monitoring data: Bayer CropScience

- Amine products performed well with no farmer complaints.
- The sensitivity of the populations stayed in the range observed in previous years.

1.2.2. Scald (*Rhynchosporium secalis*)

Presentation of monitoring data: BASF, Syngenta.

- Normal disease infection levels in 2006.

- Generally stable situation. Sensitivity monitoring data were presented for 2006: the sensitivity of the populations stayed in the range observed in the previous years.

1.2.3. Net Blotch (*Pyrenophora teres* /*Drechslera teres*)

Presentation of monitoring data: Syngenta

- Disease incidence was moderate in 2006.

- Field disease control was good with no problems reported.

- Limited monitoring data from 2006 available, further data expected. The sensitivity of the populations in 2005 stayed in the range observed in the previous years.

General Recommendations for Cereals

The recommendations for the use of DMI and amine fungicides in mixture or alternation programmes with different mode of action fungicides remain unchanged.

Repeated application of DMI or amine fungicides alone should not be used on the same crop in one season against risky pathogens (e.g. cereal powdery mildews, barley net blotch, scald) in areas of high disease pressure for that particular pathogen.

Reduced rates of DMI's have been shown to accelerate the shift to less sensitive populations. It is critical to use effective rates of DMI's in order to ensure robust disease control. DMI's must provide effective disease control and be used at manufacturers recommended rates.

When used in mixture recommended effective rates of the SBI should be maintained. Split and reduced rate programmes, using multiple repeated applications at dose rates below manufacturers recommendations, provide continuous selection pressure and accelerate the development of resistant populations, and therefore must not be used.

To ensure good performance in situations of high disease pressure it is of importance to adhere to dosages and spray timings as recommended by manufacturers. Highly curative applications should be avoided. Application timing has to be appropriate to all mix partners' characteristics. Mixing with a non-cross resistant fungicide at effective dose rates may contribute to a higher level disease control.

The amine fungicides are effective non-cross-resistant partner fungicides for DMI's on cereals for the control of powdery mildew.

Non-Cereal Crops and Diseases

2. DMI and Amines: Non-cereal Diseases

2.1. Soybean:

Asian soybean rust (*Phakopsora pachyrhizi*)

Presentation of monitoring data: Bayer CropScience

- The development of an appropriate monitoring method for baseline establishment and monitoring was presented by Bayer CropScience. Harmonization of the method is in progress by FRAC-BR. First baseline studies were carried out, no less sensitive isolates were detected.

- No specific recommendations yet: Use the general recommendations for SBI's.

2.2. Vine:

Powdery Mildew on grape vine (*Erysiphe necator*)

Monitoring studies for 2006 still in progress, data for 2005 presented by Bayer CropScience.

- For 2005: Disease pressure was normal in 2005. Performance of DMI's and amines was as expected. Stable situation for the amines over the last years, sensitivity for DMI's in the normal range of fluctuation. No complains from practice.

- Recommendations:

  DMI´s and amines should only be used preventative and not in a curative manner.

  The existing strategy for effective disease control and resistance management continues to be successful and the use recommendation is a maximum of 4 applications per season, before symptoms occur. The strategy includes the use of mixtures or alternation with non-cross resistant fungicides.

  To ensure that SBI's can remain the effective basis for control of *Erysiphe necator* in grape vine, their use should adhere to the full recommended rate (either alone or in mixture) at the recommended timing and application volume and an accurate treatment of each row.

2.3. Apple:

2.3.1. Apple Scab (*Venturia inaequalis*)

Presentation of monitoring data: Syngenta

- The performance of DMI's was good on this disease in 2006 when compounds were used according to the manufacturers' and FRAC recommendations within spraying programmes.
- From 2005 to 2006 no increase in frequency of less sensitive isolates was observed.

- Recommendations:

  DMI fungicides, which are labelled for scab control, are not recommended for season long use and a maximum of 4 DMI sprays either alone or in mixture is recommended.

  Where repeated fungicide applications are required, DMI's should be used in mixtures or (block) alternations with a non-cross resistant fungicide. Application of recommended label rates is important.

  Preventative applications should always be the first choice with DMI's. Curative applications are only recommended when accurate disease warning systems are available.

2.3.2. Powdery Mildew on apple (*Podosphaera leucotricha*)

- No 2006 data were presented.

- No complaints were received on the performance of DMI's when compounds were used according to the manufacturers' recommendation and FRAC recommendations.

- For recommendations see General Recommendations.

2.4. Banana:

Banana Sigatoka (*Mycosphaerella fijiensis*)

The conclusions and guidelines of the Feb. 2006 meeting of the FRAC Banana Working Group are available on the FRAC Website (http://www.frac.info/frac/index.htm).

SBI-Class III (Hydroxyanilides)

3. SBI-Class III (hydroxyanilides: Fenhexamid)

Botrytis cinerea on grape vine

Presentation of monitoring data: Bayer CropScience

- Monitoring data were presented for the 2005 season. The 2006 monitoring studies are in progress.

- No complaints were received on the performance of fenhexamid in 2005 and 2006 up to now.

- Field samples from 2005 showed a similar sensitivity pattern compared to baseline isolates.

Recommendations for the use of fenhexamid:

- Use fenhexamid only protectively.

- Straight product:

  Spray schedules with a maximum of 3 treatments per season: max. 1 application with fenhexamid
  Spray schedules with 4-5 treatments/season: max. 2 applications with fenhexamid
  Spray schedules with 6 and more treatments: at the maximum one third of all Botryticide-applications

- Mixtures:

  Both partners - if applied alone at the dose used in the mixture - must have sufficient activity against Botrytis. Not more than 50% of all Botryticide-treatments should be made with fenhexamid-containing mixtures.

Next Meeting

Next annual meeting is planned for November 29, 2007, in conjunction with the QoI WG meeting on November 28, 2007.

Venue of the meeting: BASF

Status: December, 2006