Azanapthalene (AZN) Working Group

Annual Meeting February 25th, 2013

Protocol of the discussions and recommendations of the AZN Working Group of the Fungicide Resistance Action Committee (FRAC)

Participants

Greg Kemmitt (Chairman)	Dow AgroSciences, UK
Jean-Luc Genet	DuPont, France
Przemyslaw Szubstarski	DuPont, Poland
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Venue:
Teleconference

1. Resistance Monitoring 2012

1.1 Wheat powdery mildew (*Blumeria graminis* f.sp. *tritici*)
(Results generated by DuPont for proquinazid)

Routine monitoring for quinoxyfen was started using airborne spore trapping in 1996 and was discontinued in 2006. Isolates with reduced sensitivity to quinoxyfen were first detected in Northern Germany in 2001 and a year later in France and the UK. The frequency of these isolates was seen to vary significantly between monitored regions within countries and also from year to year over the period of monitoring from 2002 – 2006.

Routine monitoring for proquinazid has been conducted annually since 2003 in UK, France, Germany, Poland, Czech Republic, Hungary, Italy and Sweden.

Isolates able to grow in the laboratory at a discriminatory dose of proquinazid controlling baseline isolates have been found at levels which vary between fungicides, regions and seasons.

Where isolates are sometimes found one year growing at the discriminatory dose, they may not be detected in that region the following year.

In 2012, these isolates were primarily found in the East Anglia area of the UK and in Northern Germany. The EC_{50} values of the least sensitive isolates collected in 2012 remained very low.

Field performance with proquinazid is not affected and there were no complaints.

1.2 Grape powdery mildew (*Erysiphe necator*)

(Results generated by DuPont, Dow)

Monitoring has been conducted on an annual basis in Germany, Austria, Switzerland, France, Italy, Spain and Portugal since 2003 for quinoxyfen and since 2007 for proquinazid.

No significant change of overall EU wide sensitivity of the population was recorded in 2012 compared to 2011.

As in previous years, adapted isolates able to grow actively at a discriminatory dose of either proquinazid or quinoxyfen which controls baseline isolates have been found across Europe. The frequency of these isolates has been seen to vary significantly between monitored regions within countries and also from year to year over the period of monitoring from 2003 – 2012.

In 2012, such isolates have been found in the Trentino , Alto Adige, and Veneto regions of Italy, the Burgundy, Champagne, Charente/Cognac and Gascony/Armagnac areas of France, in the Burgenland, Weinviertel and Wachau regions in Austria, in the lake Geneva area of Switzerland and to various degrees in the Rheinhessen, Wurzburg, Neckar, Baden/Breisgau and Pfalz regions of Germany.

In 2012 strongly adapted isolates were not detected in the Mosel region in Germany; the Tuscany, Emilia Romagna and Lombardy regions in Italy; the Bordeaux, Loire, Languedoc and Rhone areas in France; the Barania region in Hungary; the Dao region in Portugal and the Cadiz, Navarra and Rioja areas of Spain.

1.3 Cucurbit powdery mildew (*Podosphaera fusca*)

A quinoxyfen sensitivity baseline was established using isolates collected between 2002 and 2004 in Southern Spain prior to the commercial launch of quinoxyfen in cucurbits in 2006.

No monitoring was conducted in 2012. Field performance remains as expected when the product is used according to label recommendations.

2. Use Recommendations

2.1 Recommendations for cereals

- Apply Group 13 fungicides preventatively.
- Apply a maximum of 2 Group 13 fungicides containing sprays per crop solo or in mixture (co-formulations or tank mixes) with effective mixture partners from different cross-resistance groups.
- If a second application is needed, it should be in tank-mix with an effective mildewicide with another mode of action.
- Always follow product specific label recommendations for resistance management.

2.2 Recommendations for grapes

- Apply Group 13 fungicides preventatively.
- Group 13 fungicides must be applied in spray programs with fungicides of a different mode of action.
- Apply a maximum of 3 Group 13 fungicide containing sprays per season, solo or in mixture (co-formulations or tank mixes) with effective mixture partners from different cross-resistance groups.
- Do not exceed 2 consecutive applications of Group 13 fungicides per season.
- Always follow product specific label recommendations for resistance management.

2.3 Recommendations for cucurbits, fruiting vegetables and strawberries

- Apply Group 13 fungicides preventatively.

- Group 13 fungicides must be applied in spray programs with fungicides of a different mode of action.

- The number of sprays of group 13 fungicides per crop should not exceed 50% of the total number of powdery mildew sprays per season, solo or in mixture (co-formulations or tank mixes) with effective mixture partners from different cross-resistance groups.

- Do not exceed 2 consecutive applications of Group 13 fungicides per season.

- Always follow local product specific label recommendations for resistance management.

3. Next Meeting

The next annual meeting is planned for February, 2014.