

Minutes of the FRAC OSBPI Working Group Meeting

April 3, 2018 – 9:00 to 12:00

Corteva Office, Versoix (Switzerland)

Participants

Corteva	Jean-Luc Genet (Chair)
	Olivier Couery
	Amandine Picard
Syngenta	Helge Sierotzki
	Stefano Torriani
	Jen Foster

Agenda

1. Welcome
2. Antitrust Guidelines
3. FRAC OSBPI Membership
4. Review of sensitivity monitoring data
 1. *Plasmopara viticola*
 2. *Phytophthora infestans*
 3. *Pseudoperonospora cubensis*
 4. Other pathogens
5. Review of use recommendations
6. Review of target site mutations identified so far
7. Monitoring methods
8. Next meeting

Membership

The working group is comprised of the following members:

Jean-Luc Genet (chair)	Corteva
Amandine Picard	Corteva
Olivier Couery	Corteva
Helge Sierotzki	Syngenta
Stefano Torriani	Syngenta
Jennifer Foster	Syngenta
Daniela Pfeifer	Syngenta

Introduction

A FRAC OSBPI Working Group was formed in 2015 to generate common resistance management recommendations for the fungicide oxathiapiprolin and other OSBP-inhibitors.

Oxathiapiprolin is a fungicide active against oomycete fungi and used for the control of Phytophthora and downy mildews of numerous crops.

Oxathiapiprolin inhibits an oxysterol binding protein (OSBP) homologue. Oxysterol binding proteins are implicated in the movement of lipids between membranes, among other processes. Inhibiting OSBP may disrupt other processes in the fungal cell, such as signaling, maintaining cell membranes, and the formation of more complex lipids that are essential for the cell to survive.

Oxathiapiprolin has been classified under the FRAC Code 49. The resistance risk is medium to high.

FRAC Code	Target site and code	Group name	Chemical group	Common name	Comments
49	F9 lipid homeostasis and transfer/storage	OSBPI oxysterol binding protein homologue inhibition	piperidinyl-thiazole-isoxazolines	oxathiapiprolin	Resistance risk assumed to be medium to high (single site inhibitor). Resistance management required. (Previously U15).

Minutes of the 2018 discussions

Review of sensitivity monitoring

Grape downy mildew (*Plasmopara viticola*)

Data presented by Corteva and Syngenta

In 2018, sensitivity data have been generated for samples originating from Austria, Croatia, France, Germany, Greece, Italy, Portugal, Slovenia, Spain and Switzerland.

All 2018 samples analyzed were sensitive. In previous years, a few isolates with reduced sensitivity have been found in a small number of trial sites located in Austria, Italy, Germany, Portugal and Spain where OSBPI fungicides have been used intensively during several years. The frequency of these isolates was however low. In some of these isolates, target site mutations have been identified at positions 770, 837 and 863. More work is needed to understand the relevance of these mutations on OSBPI sensitivity.

Potato/tomato late blight (*Phytophthora infestans*)

Data presented by Corteva and Syngenta

In 2018, sensitivity data have been generated for samples originating from Belgium, China, Denmark, Finland, France, Indonesia, Italy, Netherlands, Poland, Portugal, Slovakia, South Korea and the UK. All samples analyzed were sensitive to oxathiapiprolin except for a few single isolates from one small potato area in Indonesia which appeared to have reduced sensitivity. In some of these isolates, a mutation has been detected at position 770.

Cucurbit downy mildew (*Pseudoperonospora cubensis*)

Data presented by Corteva and Syngenta

In 2018, sensitivity data have been generated for samples originating from cucumber crops in China, South Korea and the USA. All samples from China were sensitive. Single isolates with reduced sensitivity to oxathiapiprolin have been detected in trial sites from Michigan, USA (open field cucumber) and South Korea (protected cucumber). Molecular characterization of these isolates has revealed the presence of target site mutations at *Phytophthora capsici* homolog positions 700, 767 and 793.

Lettuce downy mildew (*Bremia lactucae*)

Data presented by Syngenta

In 2018, sensitivity data have been generated for samples originating from Belgium and Spain. All the samples analyzed were sensitive.

Sunflower downy mildew (*Plasmopara halstedii*)

Data presented by Syngenta

In 2018, sensitivity data has been generated for samples from the USA. All isolates were fully sensitive to oxathiapiprolin.

General Use Recommendations

Fungicide programs must deliver effective disease management. Apply OSBPIs at effective rates and intervals according to manufacturers' recommendations. Effective disease management is a critical component to delay the build-up of resistant pathogen populations.

Apply OSBPIs only preventatively and in mixtures with

effective fungicides from different cross-resistance groups.

The mixture partner should give effective control of the target disease(s) at the rate and interval selected.

Foliar exposure to OSBPI products should not exceed thirty-three percent (33%) of the total period of protection needed per crop.

The number of foliar applications of OSBPI products within a total disease management program must be limited as follows:

Grapes:

Make no more than two (2) applications per season.

All other crops:

Make no more than four (4) applications or 33% of the total period of protection needed per crop, whichever is more restrictive.

Where the total number of fungicide applications targeting oomycetes is less than three (3), apply no more than one (1) application of an OSBPI product.

There should be no more than two (2) foliar applications of any OSBPI product for the control of soil-borne pathogens.

Applications of OSBPI products are to be made no more than three (3) times in sequence before applying a fungicide with a different mode of action.

Applications of OSBPI products can be made in alternation with a fungicide with a different mode of action.

Seed/soil treatments

No foliar fungicide application of an OSBPI fungicide should be made following a seed/soil treatment* with OSBPI fungicides targeting the same pathogen.

* Directed stem sprays are interpreted as foliar not soil application.

Multiple crops

In case of multiple crops, do not make more than six (6) foliar applications of OSBPI product per year on the same acreage, targeting the same pathogen.

Do not make more than one seed/soil treatment application of OSBPI per year on the same acreage, targeting the same pathogen.

Nursery crops

OSBPI products must not be used in nursery production of transplanted agricultural crops.

Next meeting:

8 April 2020 at the Syngenta office in Basel