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O-83 (KEYNOTE SPEECH)

How to extend fungicides effective life without broad-spectrum fungicides

Mamadou Mboup

Corteva agriscience, Muenstertaeler Strasse 26, 79427 Eschbach, Germany

Correspondence: mamadoukane.mboup@corteva.com

Multisite fungicides are an important component for effective disease control and managing fungicide resistance as they also prevent or delay rapid evolution of resistance. Over the last decades, multisite fungicides have been under regulatory pressure in some geographies because of insufficient selectivity and potential negative impact on ecosystems. Several multisite fungicides have disappeared in some countries, making both disease and fungicide resistance management more difficult. Meanwhile, many single-site fungicides are no longer providing effective control against targeted pathogens because resistance has frequently evolved. The crop protection industry must reinvent itself by offering innovative solutions and strategies for controlling plant diseases and managing resistance to existing and new fungicides. In this context, Corteva is bringing new molecules and biologicals to the global fungicide market. Those innovative fungicides offer new MoAs in markets where most molecules are getting eroded, and others are threatened by new regulatory constraints. A key challenge is to protect such molecules from losing effectiveness in the short term.

Key words: Fungicide resistance, multisite fungicides

O-84 (KEYNOTE SPEECH)

An overview of the fungicide resistance situation of the cucurbit powdery mildew, *Podosphaera xanthii*, in Spain

Dolores Fernández-Ortuño[1,2,*], Alejandra Vielba-Fernández[1,2], Alejandro Pérez-García[1,2]

[1] Departamento de Microbiología, Facultad de Ciencias, Universidad de Málaga, 29071 Málaga, Spain

[2] Instituto de Hortofruticultura Subtropical y Mediterranea "La Mayora", Departamento de Microbiología, Campus de Teatinos, Universidad de Málaga—Consejo Superior de Investigaciones Científicas (IHSM-UMA-CSIC), 29071 Málaga, Spain

Correspondence: dfernandez-ortuno@uma.es

Diseases are a major source of crop and plant damage that can be caused by a number of plant pathogenic organisms, being fungi the number one cause of crop loss worldwide. Fungicide treatments are, and will remain, essential for maintaining healthy crops and high-quality yields. They are a key component of integrated crop management; however, their continuous use has caused in many fungal pathogens the appearance of resistant isolates soon after their introduction in the market. Plant pathogenic fungi employ several distinct mechanisms to establish insensitivity against fungicides with different modes of action. Hence, fungicide resistant strains may cause enormous economic losses. Monitoring for fungicide resistance is vital to determine whether resistance management strategies are working. During this talk we will focus on an important phytopathogenic fungus for the Spanish agriculture, the cucurbit powdery mildew *Podosphaera xanthii*, its fungicide resistance situation to the main anti-powdery mildew and how to optimize the use of fungicides to control this important disease in the field.

Key words: Cucurbit powdery mildew, *Podosphaera xanthii*, *LAMP*, fungicide resistance

O-85

Fenhexamide resistance and molecular species identification of *Botrytis* spp. isolates

Gamze Erdurmuş*, Abdullah Emre Atış, Duygu Demiröz, Senem Tülek

Directorate of Plant Protection Central Research Institute 06170 Yenimahalle Ankara, Türkiye

Correspondence: gamze.erdurmus@tarimorman.gov.tr

Botrytis cinerea (teleomorph *Botryotinia fuckeliana*) is a polyphagous pathogen that can cause damage in many vegetable species. *Botrytis cinerea* Pers. causes yield losses by infecting the leaves, stems, flowers or fruits of the plant. Fungicides with different mode of action are used to control this disease. *Botrytis pseudocinerea* has been detected together with *B. cinerea* but at lower densities in various fruit and vegetable production areas. In some studies conducted in recent years in the world, an increase in the density of *B. pseudocinerea* has been observed due to the intensive use of fungicides. Since *B. cinerea* and *B. pseudocinerea* have similar morphological and pathological characteristics, they cannot be easily distinguished under field conditions. Although *B. pseudocinerea* is hypersensitive to many fungicides, it is hereditarily resistant to the active substance fenhexamide. This resistance is reported to be associated with a 24bp deletion in an intron in the CytB gene of the fungus, which affects the formation of the G143A mutation, which has a major effect on resistance to QoI group fungicides. In this study, the susceptibility level of *Botrytis* spp. isolates isolated from greenhouses in Antalya province, where tomato cultivation and plant protection product application are intensively practiced, to fenhexamide in vitro conditions was determined by microtiter test method. According to the test results, the isolates were found to be susceptible to fenhexamide at different levels. Species identification was made at molecular level using g2944_137_F / g2944_273_R primers specific for the 24bp deletion, which is the difference in the genotypic structure of the two species, and it was determined that all of the isolates belonged to *B. cinerea* species.

Key words: *Botrytis cinerea*, *Botrytis pseudocinerea*, microtiter, fungicide resistance, fenhexamide