

ベンチアバカルブイソプロピルの作用性と感受性検定方法

／Biological activity of benthialdicarb-isopropyl and testing methods for sensitivity of some pathogens to the compound

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第 14 回殺菌剤耐性菌研究会シンポジウム講演要旨(2004, P1-8) ／Abstracts of the 14th Symposium of Research Committee on Fungicide Resistance

Benthialdicarb- isopropyl, isopropyl[(S)-1-[(R)-1-(6-fluorobenzothiazol-2-yl)-ethylcarbamoyl]-2-methylpropyl] carbamate is a novel fungicide which is active against Oomycete fungal pathogens of various crops. Present studies show that it effectively controls potato and tomato late blight caused by *Phytophthora infestans* and downy mildews caused by *Plasmopara viticola*, *Pseudoperonospora cubensis* or *Peronospora parasitica*. Benthialdicarb-isopropyl had not only excellent preventive, curative and penetrative activities, but also good residual activity and rainfastness. Although benthialdicarb-isopropyl does not show effect on zoospore release and motility, on the other hand, it is strongly inhibitory to mycelial growth, sporulation and germination of sporangia and cystspore against *P. infestans*. Our current studies revealed that benthialdicarb-isopropyl affect neither respiration, synthesis of nucleic acid, protein and lipid, nor the function of plasma-membrane of *P. infestans*.

However, we need further studies to clarify the precise mode of action. Sensitivity of *P. infestans* to benthialdicarb-isopropyl was tested in a leaf disk assay and an agar dilution assay. We think that both of the methods are available. For the monitoring of fungal population we recommend the agar diluting method which is more general and simple. MIC (Minimum Inhibitory Concentration) values of 68 field isolates of *P. infestans* to benthialdicarb-isopropyl were less than 0.3ppm. As for the sensitivity of *P. viticola* and *P. cubensis* to this compound, a leaf disk assay and whole plant assay were conducted. Using a leaf disk assay, MIC values of 20 field isolates of *P. viticola* and 27 field isolates of *P. cubensis* were less than 10ppm.

Qo-inhibitory fungicides - a review

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第 14 回殺菌剤耐性菌研究会シンポジウム講演要旨(2004, P9-10)

Resistance Status and Management for QoI fungicides

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第 14 回殺菌剤耐性菌研究会シンポジウム講演要旨(2004, P11-18) ／Abstracts of the 14th Symposium of Research Committee on Fungicide Resistance

QoI fungicides are used in over 80 different crops against a large number of pathogens representing over 400 crop/disease systems in 72 countries. So far, major resistance problems have been observed recently in only a few, albeit important, systems such as *Blumeria graminis* and *Mycosphaerella graminicola* in cereals in northern Europe, *Plasmopara viticola* in grape in many vineyards of France Italy and Switzerland, *Mycosphaerella fijiensis* on banana in Central America and in several diseases on cucurbits across a range of countries. In this paper, the current status of sensitivity to QoIs of field populations and the possible strategies to delay the evolution of resistance are described.

九州における耐性菌問題の現状—施設果菜類を中心に—

／Occurrence and study of fungicide-resistant pathogens in Kyushu (Mainly on fruit-vegetables)

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第 14 回殺菌剤耐性菌研究会シンポジウム講演要旨(2004, P19-26) ／Abstracts of the 14th Symposium of Research Committee on Fungicide Resistance

In Kyushu, many kinds of fruit vegetables are produced and many spray applications of fungicide are required against disease attacks, because they are cultivated for long period (from autumn to early summer) in a greenhouse with high productivity. Consequently, many fungicide-resistant pathogens occurred, e.g. benzimidazole and diethofencarb-resistant *Botrytis cinerea* (gray mold of fruit vegetables), DMI and strobilurin-resistant *Sphaerotheca fuliginea* (powdery mildew of cucumber), DMI-resistant *Mycovellosiella natrassii* (leaf mold of eggplant), azoxystrobin-resistant *Glomerella cingulata* (anthracnose of strawberry) etc. For the control of these resistant pathogens, other systemic fungicides as follows are effective, mepanipyrim for benzimidazole and diethofencarb-resistant *B. cinerea*, chlorothalonil for DMI-resistant *M. natrassii* diethofencarb-thiophanate-methyl for azoxystrobin-resistant *G. cingulata*. Integration of the use of these fungicides with cultural practice is necessary for controlling pathogen populations.

イネいもち病の発生動向と防除上の諸問題 (MBI-D 耐性菌問題を中心に)

／Occurrence and control of MBI-D fungicide resistant isolates in rice blast fungus (*Pyricularia oryzae*)

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第 14 回殺菌剤耐性菌研究会シンポジウム講演要旨(2004, P27-36)

Disease control and current status of fungicide resistance in China

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第 14 回殺菌剤耐性菌研究会シンポジウム講演要旨(2004, P37-53)