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Sensitivity monitoring of powdery mildew pathogens to cyflufenamid and the evaluation of resistance risk

Masahiro Haramoto[1)], Hiroshi Hamamura[2)], Shinsuke Sano[3)], Friedrich G. Felsenstein[4)] and Hiroshi Otani[5)]

1) Haibara Agricultural Research Center, Nippon Soda Co., Ltd.
2) Agro Product Division, Nippon Soda Co., Ltd.
3) Odawara Research Center, Nippon Soda Co., Ltd.
4) EpiLogic GmbH, Agrobiological Research
5) Faculty of Agriculture, Tottori University

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Abstract:
Sensitivity monitoring studies for a novel fungicide, cyflufenamid, (*Z*)-*N*-[α-(cyclopropylmethoxyimino)-2,3- difluoro-6-(trifluoromethyl)benzyl]-2-phenylacetamide, were performed on various pathogens causing powdery mildew. The mean EC_{50} value for *Blumeria graminis* f. sp. *tritici* was 0.029 ppm by pot assay and that for *Sphaerotheca cucurbitae* was 0.0019 ppm by leaf disk assay in Japan. The mean EC_{50} values for *B. graminis* f. sp. *tritici* were between 0.0022 ppm and 0.0111 ppm and those for *B. graminis* f. sp. *hordei* were between 0.0249 ppm and 0.0457 ppm in 2000 to 2004 by leaf segment assay in Europe. The EC_{50} values of each strain in these pathogens were distributed within a narrow range, and no classes less sensitive to cyflufenamid were found. No significant change in the sensitivity of *B. graminis* f. sp. *tritici* to cyflufenamid was observed throughout selection pressure tests in the greenhouse and field. Cross-resistance between cyflufenamid and other commercial fungicides was not observed in *S. cucurbitae*.

Keywords:
cyflufenamid, powdery mildew, baseline sensitivity

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