

DuPont™ Zorvec® disease control: A novel tool for the control of late blight in potatoes

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Late blight caused by *Phytophthora infestans* remains one of the most important limiting factors in potato production, resulting in decreasing yields and affecting tuber quality. Applications of effective fungicides are an important part of an overall integrated pest management (IPM) control strategy for potato late blight. Characterizing and comparing the attributes and features of fungicides is critical to understanding best use in an effective late blight disease management program.

DuPont™ Zorvec® is the global trade name for oxathiapiprolin (approved ISO common name), a novel fungicide discovered by DuPont and the first member of a new class of piperidinyl-thiazole-isoxazoline fungicides. It acts at a unique site of action in oomycete pathogens with no known cross-resistance to other fungicides. Because of the unique new mode of action a new Frac classification has been issued (Frac classification 49).

In vitro studies, scanning electron microscopy (SEM), and whole plant studies were conducted to characterize performance of oxathiapiprolin compared with current commercial fungicides used to control late blight. Studies have demonstrated: 1) high intrinsic activity against *P. infestans*, 2) an effect on multiple stages of pathogen development, 3) systemic movement within the host plant, 4) protection of new growth, and 5) 20 minute rainfast.

This combination of attributes allows oxathiapiprolin to provide consistent and reliable disease control, even under the most severe conditions. The combination of attributes gives also a 3 till 4 day longer protection when compared to the current product used to control *Phytophthora infestans*.

Oxathiapiprolin is highly effective for the control of *P. infestans* and other economically important oomycete pathogens at use rates much lower than current commercial fungicides. Its new mode of action makes oxathiapiprolin a valuable option for fungicide resistance management strategies, and its minimal impact on key beneficial organisms provides a strong fit within integrated pest management programs. A favorable toxicological and environmental profile, combined with low use rates, provides a new effective tool to potato growers. With launches of the product in all parts of the globe and a registration expected in Europe soon* broad practical experience is a fact. DuPont Zorvec® is recommended for preventative use in mixture with another fungicide belonging to another group. For this reason the product will be marketed in twinpacks and followed by ready to use mixtures.

*At the time of writing the abstract, a registration for Zorvec Enicade® has been obtained in Ireland. In July 2017 Zorvec Enicade® was added to the EuroBlight table.

