

# New Fungicide Technology for Sustainable Crop Management

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**P**PROMOTING sustainable disease-management practices in cucurbit crops is an important goal of research being undertaken at Ayr Research Station in Australia's Burdekin cropping region.

This season, collaborative trials between the Queensland Department of Employment and Economic Development and Crop Care have delayed and suppressed powdery mildew with fewer fungicide applications, using new fungicide technology.

One of the most important economic diseases in Australia's cucurbit crops, powdery mildew is considered high-risk for developing fungicide resistance, with growers urgently requiring a new approach to its management.

DEEDI plant pathologist Dr Gerry MacManus has been managing zucchini trials with two new types of fungicide being introduced to Australia by Crop Care.

Dr MacManus: "Preliminary results from Colliss and Vivando (on their own or in combination) showed promise in both delaying and suppressing powdery mildew, compared with the equivalent number of sprays of sulphur.

"This was evidenced by less infection on leaves and no infection on stems – compared with untreated plants and plants treated with sulphur, where symptoms were very prominent.

"There were no obvious signs of phytotoxic reactions to the new fungicides on either the foliage or fruits, and general growth habit of plants was not affected.

"Introducing fungicides with different modes of action is an added benefit to growers in their war against the development of disease resistance.

"Our studies over the past three seasons have shown evidence of buildup of resistance to the other commonly-used systemic fungicides, which has minimised their effectiveness.

"There are several aspects of disease management that are the growers' responsibility – to ensure they derive the best outcome from these new fungicides, and to maintain their usefulness into the future.

"We can't reinforce enough the importance of following label directions with these new products. Colliss needs to be applied as a protectant spray before the disease becomes established – and prior to flowering because of withholding period restrictions – with no more than two sprays per crop.

"Regular monitoring is important, so that growers know when best to strategically apply these fungicides for maximum success.

"Particular emphasis on spray application technology is also a must."

Research and development officer for Crop Care, Nicholas Mathews, Townsville agrees that an important aspect of introducing a new product is to ensure that users understand the way it works – especially a product with a new mode of action.

"It is important for everyone involved to steward these new products – to devise,

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investigate and promote robust fungicide programs, so they can be used sustainably over many seasons.”

Crop Care has already released Colliss onto the market this season, and expects Vivando to be available to growers early next year.

Crop Care national horticulture business manager Kerrie Mackay said the registrations of Colliss and Vivando represents a major opportunity for growers to give their cucurbit spray programs renewed vigour.

“Colliss contains two fungicides from different chemical groups – a new strategy to delay the onset of resistant disease strains.

“Vivando consists of metrafenone – from a new fungicide group, never used before on cucurbits. It works by stopping the fungus from entering the leaf and causing damage, but does not kill the initial stages of the disease.”

She said that Crop Care would provide clear instructions on the use of Colliss and Vivando, including options for rotation, as well as instructions to preserve the use of this important chemistry.



Ayr Research Station plant pathologist Gerry MacManus inspecting the impact of powdery mildew in a zucchini crop, and the effectiveness of a variety of treatments.



Familiarising themselves with the action, effectiveness and best use of two new powdery mildew fungicides Colliss and Vivando are (from left) Romano Parisotto and Richard Statham from Landmark; Otto Kath from Rapisarda; and Brent Wilson from Landmark. They are pictured at a recent field day at Ayr Research Station, inspecting a zucchini crop 15 days after the last application of a variety of treatments, including Colliss and Vivando.



Zucchini plants protected against powdery mildew with two treatments of Vivando then two treatments of Colliss.

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