WILD COUSINS AND WEEVILS HARD TO RESIST

Untamed relatives may end up saving Australian graingrowers from the devastating impacts of pea weevil.

Pea weevil infests up to 30 per cent of the national field pea crop, resulting in export rejection and diminished quality of one of Australia’s highest yielding pulses.

Field pea yields consistently match lupin, but the normally lucrative $300 per hectare return can be slashed by $40 per hectare with a bad weevil infestation.

However, with the support of growers and the Federal Government, through the Grains Research and Development Corporation (GRDC), Darryl Hardie, WA Department of Agriculture and Oonagh Byrne, Centre for Legumes in Mediterranean Agriculture (CLIMA), have examined field pea’s wild cousin, *Pisum fulvum*, to bring across its pea weevil resistance.

Although highly resistant to pea weevil, *P. fulvum* produces undersized seeds and is poorly adapted to local agronomy, which means the GRDC project must be careful to transfer only the specific quality of resistance to commercial field pea.

“Molecular markers have been used to identify the resistance trait in *P. fulvum* and a genetic profile developed for the wild and cultivated pea, so that when we make crosses we can select against the poor performance characteristics,” Ms Byrne said.

Using techniques developed in previous GRDC-supported research, Ms Byrne developed a PCR-based assay for molecular markers associated with pea weevil resistance.

These are undergoing laboratory testing and promise to help identify lines which breeders can use as parental material to transfer resistance into commercial field peas.

“Hopefully, when these markers are finalised and made available to breeders, it will help introduce pea weevil resistance from *P. fulvum*, without diminishing the productivity or quality of Australia’s field pea crop,” Ms Byrne said.

Ms Byrne’s research was funded under the GRDC’s Crop Improvement program, which aims to better understand and deploy disease resistance genes to develop more productive and robust legume crops for growers.

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