

VG07070 - A new option to control white blister in Chinese cabbage

New options for control of white blister on Chinese cabbage are being investigated by Dr Elizabeth Minchinton and her team at DPI Knoxfield under a Horticulture Australia Ltd funded project 'Benchmarking disease predictive models' VG07070. White blister on wrap leaves was 50% less in crops with only one fungicide spray where its application was based on predictions of a disease predictive model, rather than on a weekly fungicide spray programs.

White blister is a major disease of Chinese cabbage which appears on the undersurface of leaves, necessitating their removal from heads at harvest, consequently increasing production costs.

"It is an extremely difficult disease to control on wrap leaves", said Dr Minchinton.

An alternative method to control this disease is timing spray applications based on predictions of a disease predictive model, such as Brassica_{spot}TM. This model was developed in the UK. It uses microclimate data collected by a weather station located in a crop to predict when conditions are conducive for disease and, consequently, when to spray the crop with fungicides. If conditions are not conducive for disease, spraying will not be necessary. In this way the disease can be managed with fewer fungicide sprays.

We evaluated two versions of the Brassica_{spot}TM model, the infection model (old) and the latent incubation period model (new) in Chinese cabbage against weekly spray programs for control of white blister. The weekly program received five sprays starting at week 3; the old and new models predicted one spray each at weeks 4 and 6, respectively.

Trial results

White blister first appeared in the crop four weeks after sowing in all treatments, which was about half way through the crop's life. At harvest, leaves appeared to be infected with white blister from oldest to youngest, suggesting conditions were favourable for white blister consistently throughout the trial, which was confirmed by both models.



"The new model reduced 4 weekly sprays and was the only treatment to significantly reduce incidence and severity of white blister on Chinese cabbage, by 30% and 50%, respectively", said Dr Minchinton.

The new model recommended a single spray 14 days before harvest, based on disease progression data from the crop inspections and environmental data, but spraying 14 days prior to harvest may co-incidentally be the best time to protect the 4 unfolding wrap leaves.

Future directions

Further work is suggested to compare spraying according to new Brassica_{spot}TM model against a single spray of fungicide 14 days before harvest..