

Vegetable ~~Matters of~~ Facts

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Brassica

White Blister (*Albugo candida*)

Strategies for White Blister Control

- **Control watering** and **Avoid** long periods of leaf wetness as spores germinate and infect surface water on plant parts.
- **Time irrigation** to coincide with dew periods to minimise the duration of leaf wetness.
- **Maintain good air movement** to allow leaves to dry off quickly. Avoid dense planting.
- **High levels of nitrogen** may increase susceptibility to white blister.
- **Plant varieties** with the highest tolerance to white blister.
- **Plant disease free** transplants.
- **Remove volunteer** plants and contaminated crop debris. These can be a source of infection for adjacent or new crops.
- **Rotate** with a non-Brassica crop.
- **Chemical control** using registered contact and systemic fungicides.
- **Brassica^{spot}** the white blister 'risk predictive model' called is currently under evaluation as a decision support tool to determine whether or not to spray crops.
- **Brassica^{spot}** can be used to forecast likely time for infection.
- **Monitor crops** and target application of fungicides.
- **Post Harvest management** - when levels of white blister are low, blisters can be picked off heads during the post harvest handling.

What is white blister?

The disease white blister is caused by the pathogen *Albugo candida*. It affects many economically important brassica crops including broccoli, cauliflower, Brussels sprouts, rocket, radish and many common brassica weeds. Plants infected by *A. candida* show two types of symptoms: white pustules or 'blisters' of various sizes on leaves and heads of broccoli and cauliflower, and/or distortions and swellings of leaves, stems and heads.



White blisters on flowers, leaves and gall on seedling stem

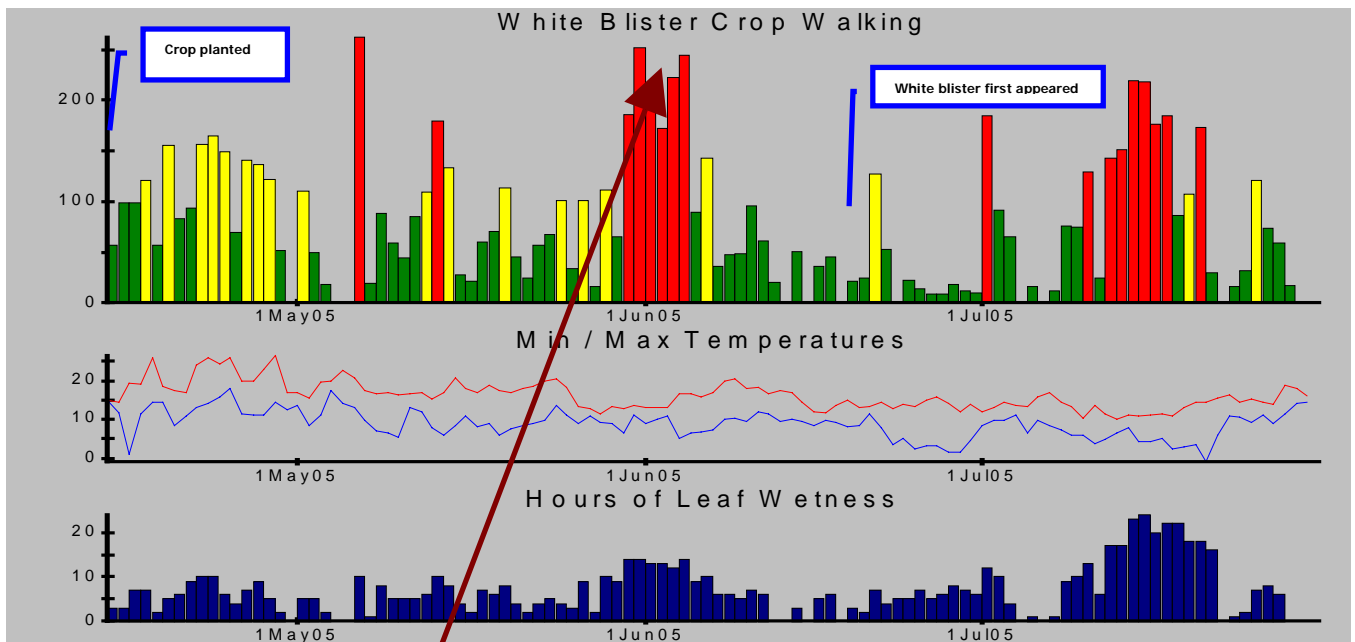


Fig. 1 Case study: output from the Brassica^{Spot} model. Red bars – high infection risk. Yellow bars – moderate infection risk. Green bars – low infection risk. No bars – no risk.

Steps to use model

- The disease develops 7-21 days after infection. The crop is monitored at 7, 10 and 14 days after a cluster of red bars to detect emerging white blisters.
- In Fig. 1 white blister appeared 8 weeks after planting and 2 weeks after the first cluster of red bars, signifying 'high infection risk'. A fungicide was applied when the disease was first observed.
- A high infection risk (red bars) appeared for the second time, 2 weeks before harvest. The amount of white blister was very low so no fungicides were sprayed to protect broccoli heads.
- **Only one fungicide was applied for white blister control in the above crop.**

Benefits of using the model

- Determines the time to look for white blister in the crop.
- Fungicides can be applied when they will have the maximum efficacy.
- Avoids weekly spraying for white blister control.

Brassica^{Spot} was developed by Roy Kennedy at Warrick HRI in the UK.

White blister predictive model reduces sprays and controls disease

Brassica^{Spot} is a computer based, disease-forecasting system for some fungal diseases and insect pests of brassicas.

The model predicts the risk of white blister infection periods for broccoli (and other brassicas) using weather data such as temperature, leaf wetness, relative humidity and rainfall.

The model indicates the time to inspect crops for white blister and, depending on the results, a decision is made whether or not to spray.

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