

Overview of important diseases



Botrytis

- Saprophyte- A fungus that lives on decaying or dead organic matter
- Fungal hyphae absorb sugars and nutrients from the decaying plant matter which supports sporulation.
- Considered mainly a secondary pathogen



Botrytis- High risk conditions

- Thrives in high humidity environments
- Poor ventilated areas
- Unheated areas that fluctuate in temperature
- Low light levels
- Recently trimmed plants/ exposed wounds
- Stressed plants
- Overwintered plants
- Infected plants close by or decaying material



Botrytis control strategies

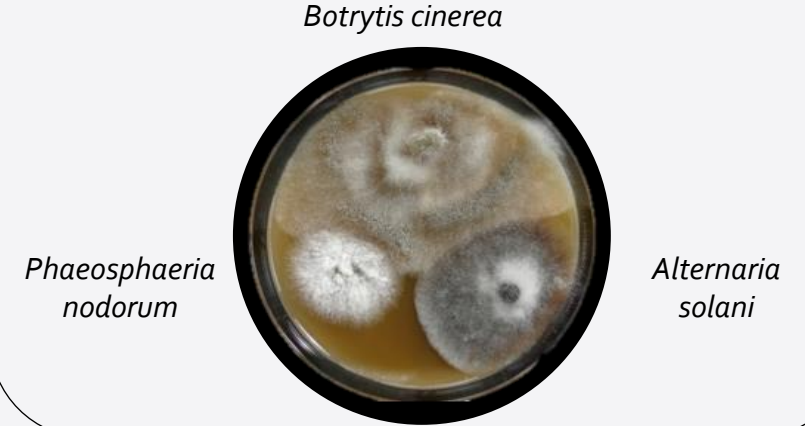
- Ventilation and airflow
- Plant spacings
- Monitoring
- Irrigation
- Variety selection
- Hygiene
- Preventative fungicide applications



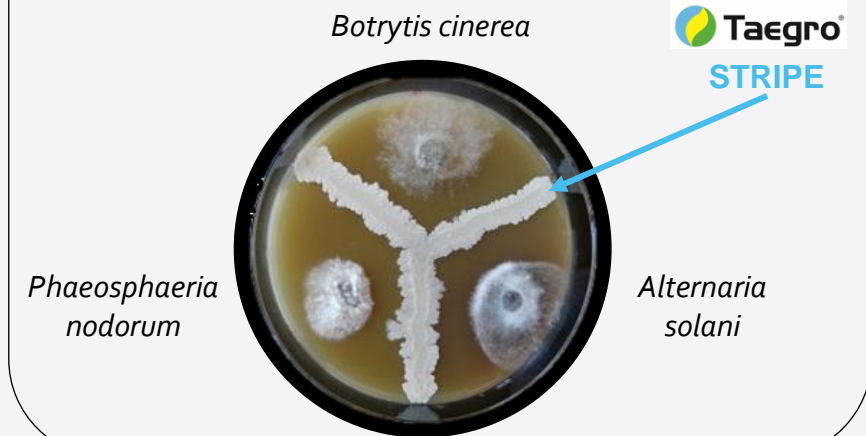
Integration of Taegro for botrytis control

- Important to apply after trimming/ if there are any exposed wounds
- Consider applying if temperatures are persisting between 15–22°C and above 85% humidity
- Reapplication every 7-10 days during high risk periods

Pathogens free growth in Petri dish



Pathogens growth inhibited by TAEGR0 metabolites in Petri dish



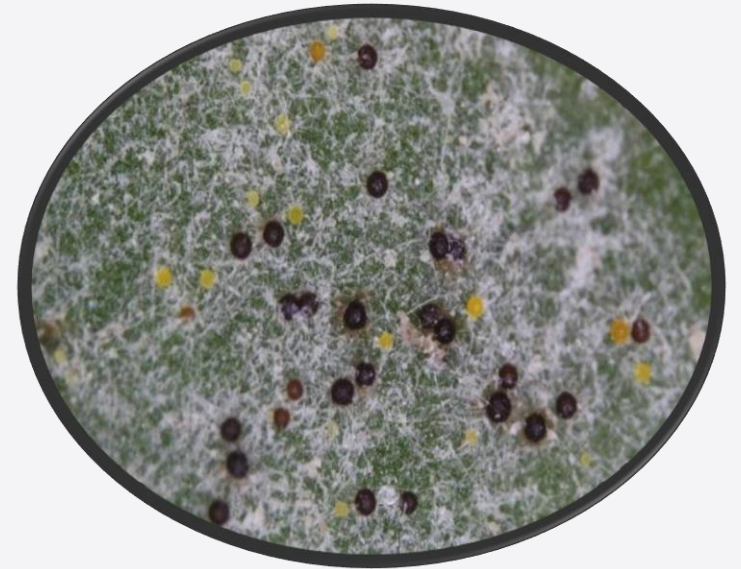
Powdery mildew

- Host specific obligate parasite
- Fungal spores germinate on the plant tissue and distinct white mycelium threads branch out
- Feeding is carried out by haustoria entering the epidermis
- Overwinter as cleistothecia- the fruiting structure or as mycelium
- Spores spread through the air, water, clothing and insects



Powdery mildew- High risk conditions

- Thrives warm high humidity conditions
- Poor ventilated and damp areas
- Areas with fluctuating temperatures
- High amounts of new vegetative growth
- Overwintered plants that are within the host plant range of the new crop



Powdery mildew control strategies

- Ventilation and airflow
- Plant spacings
- Monitoring
- Irrigation
- Variety selection
- Hygiene
- Fertiliser management
- Preventative fungicide applications

Integration of Taegro for powdery mildew control

- Important to apply during vegetative plant growth
- Consider applying if temperatures are persisting between 20-27°C
- Reapplication every 7-10 days during high risk periods



Downy mildew

- Oomycete organism
- A disease present in wet conditions as it requires prolonged leaf wetness.
- Angular damage on the leaf surface with grey spores sitting under the leaf.
- Foliar disease spread from plant to plant through airborne spores.



Downy mildew- High risk conditions

- Preference for temperatures between 15-23°C and humidity above 85%
- Poor ventilated and damp areas
- Unheated areas with fluctuating temperatures
- Overhead irrigation



Downy mildew control strategies

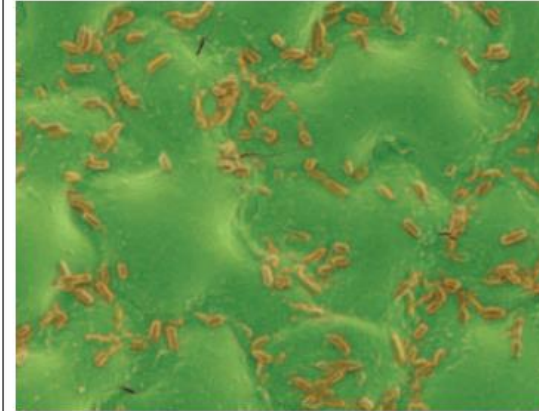
- Ventilation and airflow
- Plant spacings
- Monitoring
- Irrigation
- Variety selection
- Hygiene
- Preventative fungicide applications



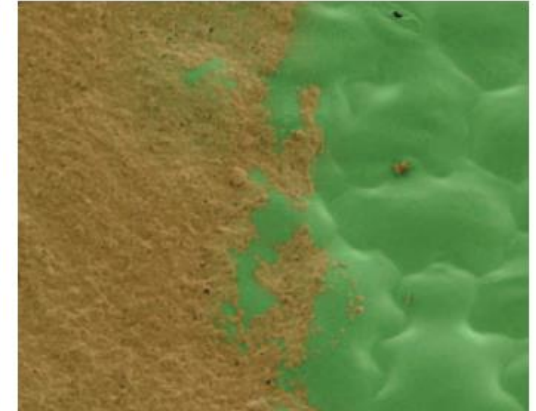
Integration of Taegro for downy mildew control

- Consider applying if conditions are persisting between 15-23°C and humidity above 85%
- Apply when first signs of the disease have been observed
- Tank mixability to increase efficacy
- Reapplication every 7-10 days during high risk periods

Figure 3: Image of TAEGR0 (*Bacillus amyloliquefaciens*) cells lying and multiplying on the leaf surface.



Colonisation via cell chains



Border of a colony

Other diseases controlled

- Mode of action
 - Surface colonisation - competition on the plant surface against pathogens
 - Release of antimicrobial metabolites.
 - Induced systemic resistance - enhances plant resistance.
- Listed diseases on EAMU- *Alternaria* and *sclerotinia*
- Additional activity has been reported in overseas trials against *Mycosphaerella*, *Xanthomonas*, *Pseudomonas* and also soil born *Rhizoctonia* and *Fusarium* but these diseases are not on the UK label and efficacy cannot be guaranteed.

Thank you for your attention are there any questions?

Fargro's technical line- 01903 256856

Email- technical@fargro.co.uk

