Apple scab (Venturia inaequalis): Control strategy for organic pome production

Problem
Apple scab is the primary fungal disease in apple cultivation affecting entire harvests as well as the following year's production (Picture A-C). The damage can occur both in the plant and during storage.

Solution
In organic farming, scab control is mostly carried out using precautionary measures. Plant protection products are used for direct control before the onset of rain and during spore germination as "scab stop".

Benefits
Combining robust and resistant varieties with the proper agronomic practices and forecasting methods to optimise treatments reduces the need for biological plant protection.

Practical recommendations
Precautionary measures
- Use resistant varieties, e.g., Topaz, Inored story, GoldRush.
- Use sanitary measures, e.g., rake up fallen leaves in late autumn and shred them with a mulcher to promote leaf degradation.
- Use forecasting models to estimate ascospore flight and calculation of degree-hour (Picture D).
- Use drip irrigation systems; if overhead irrigation is used, avoid plants to remain wet for more than eight hours.
- Set up the tree structure open to light and with limited vegetative development.

Direct control
Preventive control
- Preventive treatment should be carried out immediately before the onset of rainfall.
- For susceptible varieties, it is always recommended to cover all rainfall from the red bud stage until full flowering (Picture E-G).
- In case of strong spore propagation, treat with sulphur or copper. Alternating copper and calcium polysulphide application increases the risk of fruit russetting even with non-susceptible varieties. After flowering, continue treatments with calcium polysulphide as it is less phytotoxic.

Early control (Scab stop)
- Treatment is carried out during the spore germination phase on wet leaves.
- Calculate treatment based on forecasting models (e.g., RimPro²) (Picture D) or calculating degree hours (average temperature from the start of rainfall by the hours of wetting).
- Use 250-degree hours for early intervention. Repeat treatment if rainfall occurs.
Calcium polysulphide is the most effective product. Use the same dosages as for preventive control. Alternatively, use bicarbonates in combination with wettable sulphur.

Copper-based products are not recommended because of their phytotoxic effects on the leaves and fruit.

Further information

Further reading

- Kelderer, M., Casera C., Lardschneider, E. 2008. Formulated and unformulated carbonates to control apple scab (Venturia inaequalis) on organic apple. Germany.
- Ecofruit: 13th International Conference on Cultivation Technique and Phytopathological Problems in Organic Fruit-Growing.

Weblinks


- Check the Organic Farm Knowledge platform for more practical recommendations.

About this practice abstract

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