

How to assess blossom blight / brown rot disease on apricot trees (*Monilinia*)

Problem

Brown rot, or blossom blight, on apricot trees is a fungal disease attributed to *Monilinia spp.* (often called *Monilia*) which can cause the loss of the entire apricot production. Contamination occurs on the petals at blooming time during the susceptible stages of flower buds (from BBCH 57 to BBCH65), and depends on weather conditions, namely rainfall, mean temperature, and relative humidity during and after rainfall events. Infection risk is complicated to predict, making it difficult to anticipate and apply phytosanitary protection at the right moment. The infection spreads from the flowers into the shoots. Flower petals turn brown, then dry and remain on the shoot. Three weeks after infection, symptoms of canker spread to the shoots, often with gummosis.

Solution

To effectively evaluate brown rot damage on apricot trees, the first mandatory step is visually scoring flower density. This allows you to score the infection's impact on the tree one month after full bloom. The solution to assess brown rot due to *Monilia* infection is therefore a visual counting of the percentage of infected shoots over the total number of shoots bearing flowers.

Applicability box

Theme

Crop production, pest and disease control

Keywords

Plant disease control, blossom blight, apricot trees

Context

Apricot growing areas

Application time

One month after full bloom

Period of impact

The year of scoring regarding fruit set and productivity

Equipment

Notation sheet or tablet

Best in

Apricot cultivars/genetic resources under organic or low fungicide protection during blooming period

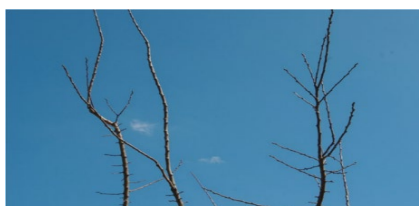
Benefits

This practice helps breeders and evaluators to identify apricot genotypes mostly susceptible to blossom blight to avoid their use in breeding programs (step 1 + step 2, see below). The evaluation procedure is improved when no phytosanitary protection is used in the orchard during the susceptible period. On the contrary, the less susceptible genotypes have to be confirmed over several years of observations and the calculation of the cumulative risk score during the susceptible stages can help to provide a better reliable conclusion (step 3).

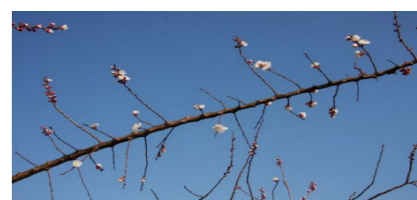
Practical recommendations

• Step 1 – Assessing flower density (the density of flowers on the shoots)

The scoring is performed at BBCH61 when 50% of the flowers are fully opened, with a scale of [1 to 9]



1: no flower or very few flowers



3: few flowers

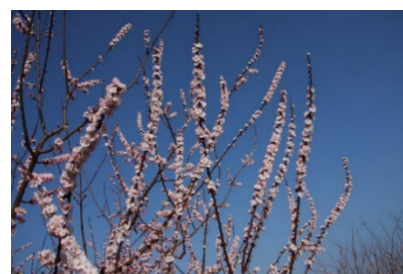
PRACTICE ABSTRACT



5: intermediate bloom



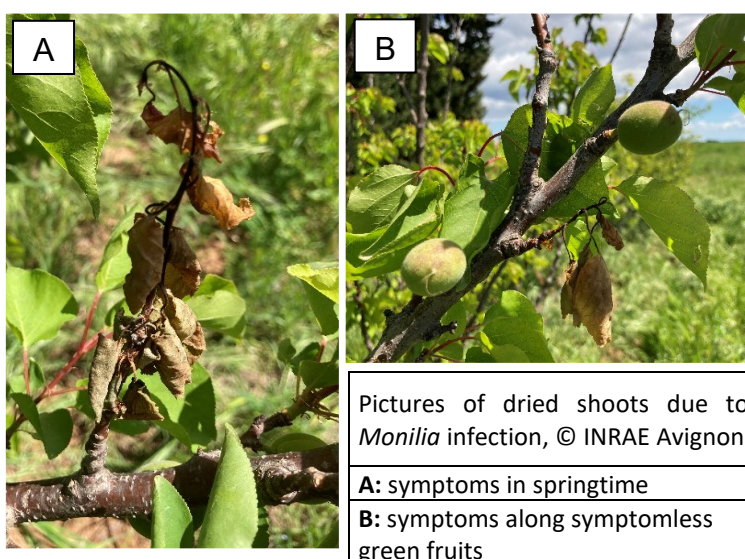
7: heavy bloom



9: very heavy bloom

• Step 2 – Assessing *Monilia* symptoms on shoots

The scoring is performed one month after the end of the blooming period



Symptoms scoring	Visual counting (%) of infected shoots over the overall shoots bearing flowers
1	0% shoot with symptoms
2	0-1% very few infected shoots
3	1-5% few infections, easily visible
5	+/-25% (15-30% of infected shoots)
7	+/-50% (45-60% of infected shoots)
9	>75% of infected shoots
Intermediate scorings can be applied (4-6-8)	

• Step 3 (optional) – Calculation of cumulated risk score

Which takes into account different elements over several years of observations. Additional measures that need to be considered to develop the risk score are:

- The assessment twice a week of the **% flower buds from BBCH53 to BBCH67 stages** (julian days)
- For each rainfall episode during the susceptible window, the **hourly records of rainfall (mm), temperature (°C) and moistening period (hour)** **Dataset (step 1 + step 2 + step 3).**
- **INRAE Gotheron** (see contact below¹) can be contacted to share a tool, under agreement, able to predict if flower buds were exposed to *Monilia* risk infection during the susceptible stages ($p < 0.05$).

Further information

- Tresson P., Brun L., de Cortázar-Atauri I G., Audergon J-M., et al. Future development of apricot blossom blight under climate change in Southern France, European Journal of Agronomy, Volume 112, 2020, 125960, ISSN 1161-0301. <https://doi.org/10.1016/j.eja.2019.125960>.

About this practice abstract

Pictures: © INRAE Avignon & Gotheron

Authors: David Tricon, Jean-Marc Audergon (INRAE GAFL Avignon), Laurent Brun (INRAE UERI Gotheron)

Contact: laurent.brun@inrae.fr, david.tricon@inrae.fr

Review: Fulya Batur (ARCADIA), Lauren Dietemann (FIBL)



Permalink: [Organic-farmknowledge.org/tool/58237](https://organic-farmknowledge.org/tool/58237)

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