

Strategy to control Peach Leaf Curl damage

Problem

Peach leaf curl is a common disease of peach and nectarine trees caused by the fungus *Taphrina deformans*. Severely affected trees reduce tree vigour, fruit quality and yield.

Solution

Generally, early treatment with copper from bud swell to bud break during humid weather and temperatures above 10-12°C is effective. A second spray 1-2 weeks later is recommended before green leaf tips are first visible as flower buds begin to swell.

Benefits

Growing varieties tolerant to leaf peach curl disease lowers copper usage and improves fruit growing and economic return.

Applicability box

Theme

Crop production, Stone fruits

Keywords

Resistance, fruit quality

Context

Peaches and nectarines growing, temperate regions

Application time

Early spring, bud swelling

Period of impact

Orchard lifespan

Practical recommendations and information

- HOST PLANTS: peaches and nectarines
- SYMPTOMS:
 - On leaves: symptoms appear about two weeks after leaves emerge from buds, deformations, blisters, thickened curling leaves, and white, yellow to red leaf discolorations (Pictures 1 and 2); affected leaves may dry up and fall off
 - On fruits: Blistered fruit tissue, later wrinkling



Picture 1. Peach leaf curl disease symptoms are deformed, blistered and thickened leaves. Photo: Vladan Falta, Biocont Laboratory, CZ.



Picture 2. Severely affected tree reduce yield. Photo: Vladan Falta, Biocont Laboratory, CZ.



Picture 3. First infection occurs during bud swelling. Photo: Vladan Falta, Biocont Laboratory, CZ.

- DAMAGE:
 - Infections on fruits make the surface corky and cracked, and affected fruits fall off
 - When trees are severely affected, the disease can strongly reduce yield and fruit quality
 - If significant premature leaf drop occurs, trees will be susceptible to drought stress and winter injury
- DISEASE TRANSMISSION:
 - The fungus overwinters in bark and bud scales

- The infection of buds happens in early spring during bud swelling (Picture 3)
- When temperatures reach above 10°C, infections are possible as early as January
- Humid weather promotes the growth and spread of the disease
- Additional spores form on the surface of diseased tissue, and these spores cause new infections if the weather remains mild and wet
- **PROTECTION:**
 - **PREVENTIVE MEASURES:** Thin out and remove infested shoots by mid-May, thin fruit if the crop load is heavy, and apply copper in the fall after leaf drop
 - **DIRECT MEASURES:** From bud swell to bud break during humid weather and temperatures above 10-12°C treat with copper; in case of persistent humid weather, repeat the treatment 1-2 weeks later
- Check records of growing degree hours +7°C (sums of active temperatures about 7°C; SAT+7) from the beginning of the year (from January 1st) at meteo-stations in or near your orchards
- The first movements of the bud scales are visible when the SAT+7 reaches the value of 800
- Ordinarily, the first treatment by copper is recommended at the value of 1100-1200 SAT+7, but it is advisable to start mostly already at the value of 1000 SAT+7 (in central Europe)
- Grow tolerant varieties to leaf peach curl disease, however fully resistant varieties do not exist
- Varieties described as the most tolerant: Bella di Roma, Catherine Sel.1, Golden Jubilee, Redhaven, Hardired, Filip, Frumoasa litoralului, Stark Saturn, Creola.; Peach varieties: Bénédicte, Belle de Montélimar and Reine des Vergers are traditional in France
- Nowadays, the offer of peach varieties is large, but the lack of reliable data concerning their suitability to organic systems makes the choice difficult

Further information

Further reading:

- Trandafirescu, M., Topor, E., Teodorescu, G. 2006. Resistance to *Taphrina deformans* (Berk.) Tul. in Peaches And Nectarines in Southeastern Romania. *Acta Hortic.* 760, 479-482 DOI: 10.17660/ActaHortic.2007.760.67
- Kaymak, S., Boyzaz, N., Bastas, K. K. 2008. Susceptibility of Some Peach and Nectarine Varieties to Leaf Curl Disease (*Taphrina deformans* (Berk.) Tul.) in Field Conditions, *J. Turk. Phytopath.*, Vol. 37 No. 1-3, 27-37.
- Ohlinger, B, Spornberger, A. and Keppel, H. 2007. Suitability of peach and nectarine cultivars for organic production under pannonic climate conditions in Austria. Proceedings of the 13th International Conference on Organic Fruit-Growing, 2008.
- Rossi, V., Bolognesi, M., Languasco, L., Giosue, S. 2006. Influence of environmental conditions on infection of peach shoots by *Taphrina deformans*. *Phytopathology* 96:155–163.

Weblinks:

- Peach Leaf Curl. University of Wisconsin-Madison.
- Stone Fruits - Peach Leaf Curl. Agriculture Victoria.
- *Taphrina Deformans*. Agricultural and Biological Sciences.
- Parveaud, C. E., Gomez, C., Libourel, G., Warlop, F., Mercier, V. Assessment of disease susceptibility and fruit quality of 28 peach cultivars. GRAB, INRA.

About this practice abstract

Publisher: Research and breeding institute of pomology Holovousy Ltd
Holovousy 129, 508 01 Hořice, Czech Republic
+420 491 848 205, info@vsuo.cz
www.vsuo.cz

Author: Radek Vávra, Jiří Kaplan, Vladan Falta,
Lukáš Maryška

Contact: radek.vavra@vsuo.cz



Review: Ilsa Phillips (IFOAM Organics Europe), Lauren Dietemann (FiBL)

Permalink: organic-farmknowledge.org/tool/45930

Project name: BIOFRUITNET- Boosting Innovation in ORGANIC FRUIT
production through stronger networks

Project website: <https://biofruitnet.eu/>

© 2023

