

The Best Practice Guide to UK Plum Production Plum Rust

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Background

Plum rust is caused by the fungus *Tranzschelia discolor* which attacks plants of the genus *Prunus*. Its spores **infect plum leaves**, becoming systemic and spreading through the plant. The fungal spores are able to **survive over winter in twigs or leaves** (1), meaning that this disease can persist over multiple growing seasons if sufficient control measures are not employed.

Symptoms

The main symptoms of plum rust are **yellow-green lesions** on the upper leaf surface which over time form **pale brown raised dots (pustules)** on the corresponding areas on the underside of the leaf where the infecting fungal spores develop. These leaf lesions are generally more visible of plum varieties which have lighter coloured leaves, and they become more visible towards the end of the growing season when they turn dark brown/black (2; 3). Young leaves may develop a **puckered appearance** with pustules and become heavily infected, while older leaves are less susceptible although they may still form **necrotic symptoms**. The disease also causes **premature defoliation**, causing **fruits to be smaller** and have **lower sugar** content (4; 5). Other symptoms include twisting of leaves and reduced flowering (6). Twig cankers are also a symptom of this disease in peach, appearing as longitudinal splits in the bark between 3 and 6 mm in length and rupturing the epidermal tissue (2). In UK plum orchards, the first symptoms of plum rust are usually observed in July, although in years with hotter summers this may be delayed until August. **Fruit lesions** may also develop, appearing as brown spots with green/yellow halos. In the long term, plum rust results in lower yields and poor tree health (5).

Plum rust infections are most detrimental to yield loss when they occur early in the growing season since infected leaves have a reduced photosynthetic capacity and defoliate early, thereby diminishing the carbohydrate capacity of the tree, which causes lower fruit production the following year.

Contributing Factors

T. discolor grows optimally under **very humid, wet conditions**, with greater outbreaks occurring during years with high rainfall during the growing season.

Control Treatments/Prevention

There is no cure for plum rust, and it is therefore critical that control measures are taken as soon as any symptoms are detected to avoid continued spread of the infection. In the UK, it is recommended that **fungicide applications** for the control of plum rust are applied in **late spring** when *T. discolor* spores are likely to infect plum trees. The availability of fungicides targeting plum rust in the UK is limited, as several products such as myclobutanil (Systhane) are no longer permitted for use. The use of copper phosphite has been reported to reduce peach rust severity by more than 30% (7) but is not approved for use on stone fruit in the UK.



Figure 1 Leaves showing plum rust symptoms - yellow dots on the upper leaf surface (left) and brown/black pustules on the lower surface (right) (© Arnold Grosscurt).

Growers can reduce the risk of plum rust in their orchards by selecting more **resistant varieties**, such as Ferbleue, Guinevere and Merton Gage. **Pruning** can also help to lower the risk of plum rust infections as it can result in lower humidity in the tree canopy, thereby creating a less favourable environment for the fungus to grow.

Caution

The information contained within this Best Practice Guide is correct to the best of the authors' knowledge at the time of compilation but it must be understood that the biological material/systems and the regulatory framework referred to within these guides are subject to change over time. Anyone looking to make use of the information should check it against prevailing local conditions.

All pesticide recommendations and approvals are subject to change over time and the user of this Guide is reminded that it is his/her responsibility to ensure that any chemical intended for use by them is approved for use at the time of the intended application. The user is reminded that they must carefully read and follow the label on each chemical before applying any treatments.

References

1. *Host range of plum anemone rust, Tranzschelia discolor*. **Linfield, C.A. and Price, D.** 1983, Transactions of the British Mycological Society, Vol. 80, pp. 19-21.
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3. *First report of leaf rust on plum (Prunus cerasifera) by Tranzschelia pruni-spinosa var. discolor in the eastern Mediterranean region of Turkey*. **Soylu, S., Soyly, E.M. and Kurt, S.** 2, 2004, Plant Pathology, Vol. 53.

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7. *Potassium, calcium and copper phosphite to control peach rust and brown rot*. **Kowata, L.S., et al., et al.** 3, 2012, IDESIA (Chile), Vol. 30, pp. 93-96.