

# Powdery mildew (oidium) on grapevine

*Author(s):* проф.д.с.н. Марияна Накова, Аграрен университет Пловдив; проф. д-р Борис Наков, Аграрен университет Пловдив

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In recent years, there has been a trend towards more widespread occurrence and significant losses of grape yield caused by powdery mildew. The main prerequisites for this are omissions in certain elements of the vineyard cultivation technology, and recommendations for the control of powdery mildew are often not aligned with the biological characteristics of the pathogen. At this stage, more detailed and comprehensive information on the development and forecasting of the disease is necessary for the purpose of scientifically based management of control measures.

## Control measures

The biological characteristics of the pathogen require that control be carried out from the stages of shoot emergence until berry veraison. In the presence of infection on the main internodes (2–3 spots per internode), the first sprayings are carried out early, at shoot height of 2–4 cm, using systemic fungicides. The purpose of the treatment is to destroy the overwintering mycelium in the buds and on the shoots.

## Authorised plant protection products

Treatments are carried out depending on the dynamics of disease development. The phenological stages from flowering to berry veraison are also critical for protecting grapes from powdery mildew. Under favourable weather conditions and when mycelial growth is recorded on the leaves and especially on the clusters, treatments are intensified at 10–12-day intervals using systemic fungicides.

Vivando – 20 ml/da; Domark 10 EC – 25–30 ml/da; Collis SC – 0.04% (40 ml/da); Quadris 25 SC – 0.075%; Orius 25 EW/Dynasty 25 EW/Tebumax 25 EW – 0.04% (40 ml/da); Talendo 20 EC – 20–25 ml/da; Talendo Extra – 7.5–25 ml/da; Topaz 100 EC – 0.015%; Flint Max 75 WG – 0.016%; Folicur 250 EW/Horizont – 0.04%; Folpan 80 WDG – 0.15%;

Among the sulphur-containing products, dusting sulphur (3–4 kg/da) is widely used in practice, mixed with inert substances in a ratio of 80:20 for tractor dusting and 1:1 for aerial treatment. Dusting is carried out in the presence of dew and at temperatures from 10–12°C to 25–28°C. At higher temperatures, sulphur causes scorching. Among the wettable sulphur formulations, the following are used:

Akoidal WG – 0.25%, Kumulus DF – 0.2–0.3%, Solfoliquid 800 SC – 400 ml/da, Thiovit Jet 80 WG – 0.3% (before flowering) and 0.2% (applied after flowering). Preventive and prophylactic sprayings are carried out with the sulphur-containing products.

In the case of more widespread occurrence of the disease, clear formalin – 0.4–0.5% may be used, alone or in combination with another fungicide. It is advisable to carry out the treatments in the afternoon hours, when daytime temperatures are decreasing.

The results of the sprayings are more effective when combined with the implementation of green operations.

## Biological control

In organic production, control is carried out by performing green operations and using sulphur-containing products and Timorex 66 EC (tea tree extract) – 0.5%.