

# Pulverization and crop protection notice

Made by Chambre d'Agriculture of Côte d'Or

## Pulverization

Spray equipment pool consists mainly of pneumatic sprayers to ensure an optimal penetration of crop protection preparation in the heart of vegetation. Most are dragged behind a narrow width vineyard tractor. In general, these sprayers treat 2 ranks (1 full rank and 2 half ranks). Some of them can even spray 2 full ranks. In pneumatic configuration, some can over-arch rank. More rarely, producers can own stream carried sprayers that combine a nozzle mount combined to air support.

## DISEASES

### **Oidium** (*Sphaerotheca mors uvae*)

All cultivated varieties are sensitive to oidium, particularly Noir de Bourgogne and Royal of Naples, slightly less Blackdown. Frequency and intensity of disease are also variable according to plantation age, vigour and parcel settings.

*Crop protection strategy:* no simulation model as management tool exists to help monitoring. We rely on our observation experience.

It's recommended to begin treatment at half bloom and to end at half June. It represents 3 to 5 treatments per year.

Post harvest period can represent 1 to 2 treatments.

*Registered products in France:* products with bupirimate, myclobutanil, kresoxim-methyl, boscalid + pyraclostrobin.

### **Anthracnose** (*Pseudopeziza ribis*) and **white pine blister rust** (*Cronartium ribicola*)

Anthracnose is present in all parcels, usually without negative impact if crop is protected. Anthracnose is more frequent during important rainy years.

Rust remains more discontinuous and can express symptoms after harvest.

*Crop protection strategy:* no simulation model as management tool exists to help monitoring. A follow-up of apothecia maturity and ascospores projections enclose period of treatment.

During spring, first treatment depends on first contamination; protection period can start at the beginning of sensibility stage of blackcurrant (3 leaves deployed at half bloom). It represents 0 to 4 treatments according to mainly rain during spring. Mancozeb use is recommended. Thereafter, products used to treat oidium allow controlling anthracnose.

After harvest: one to two treatments with mancozeb or registered product for oidium use if there is simultaneous presence of oidium

*Registered products in France:* products with mancozeb, dithianon, boscalid + pyraclostrobin. Bupirimate, myclobutanil, kresoxim-methyl, boscalid + pyraclostrobin.

### **Botrytis cinerea**

Botrytis is more frequent in the Loire Valley area (West of France with oceanic climate). In other production areas damages are less important. This disease is present on flowers and fruits if a long, wet period occurs during spring.

*Crop protection strategy:* during bloom, a monitoring is necessary. Low symptom situation is controlled by products used for oidium treatment (especially boscalid + pyraclostrobin). For high pressure of botrytis, fungicides with specific use (product with iprodione, cyprodinyl + fludioxonil, pyriméthanil) must be employed.

### **Phomopsis ribis**

Post-harvest treatments used to control *Synanthedon tipuliformis* are useful to minimise phomopsis impact.

## PESTS

**Aphids (mainly *Hyperomyzus lactucae*, *Aphis schneideri*, *Cryptomyzus ribis*, punctually : *Aphis grossulariae*, *Cryptomyzus ribis* and *Eriosoma ulmi*)**

Green aphid is the most frequently encountered and causes damages; more punctually yellow and ashy aphids can affect crop.

*Crop protection strategy*: monitoring from E2 to I2 stage. In case of low attack, auxiliary species (like ladybird larvae, hoverfly,...) can be sufficient to control aphids. In case of high level of attack: one treatment, positioned at the right moment, is often sufficient.

*Registered products in France*: products with pyrimicarbe (they respect auxiliary's species), lambda-cyhalothrin.

**Mites: big bud mite (*Cecidophyopsis ribis*) and two-spotted spider mite (*Tetranychus urticae*)**

Big bud mite concerns essentially the Loire Valley production area, elsewhere it is rarely present. Since the very hot summer of 2003, big bud mites populations have been greatly reduced. They are currently increasing.

*Crop protection strategy*: protection is needed during the larvae spreading period. This period extends from April the 1<sup>st</sup> to mid may (C - C3 to I3 stages). It represents 5 to 6 treatments, which is not realized by producers in practice.

*Registered products in France*: pyridaben

Two-spotted spider mites are less problematic. The preservation of species of Phytoseiidae family (auxiliary predatory mites) and no use of pyr  thrinoids products helped to restore the balance between pest and predator.

*Registered products in France*: Clofentezine, pyridab  ne

**White peach scale (*Pentagona pseudaulacaspis*)**

This pest presence is increasing across the French production area. Symptoms are observed in local areas with a very important impact for affected parcels (loss of yield, death of bushes).

*Crop protection strategy*: deletion of affected stems is indispensable. Follow-up phase of larvae hiving off helps to decide treatments dates.

Winter mineral oil treatments are insufficient. There is still no registered products to eradicate mobile larvae during vegetation phases.

**Currant clearwing (*Synanthedon tipuliformis*)**

It is present in many parcels with variable impact. Its damage serves as a gateway for phomopsis.

*Crop protection strategy*: the follow-up of flights by pheromonal traps allows positioning treatments (one to two treatments per year)

Treatments are possible on flights late May - early June (lambda-cyhalothrin). This strategy may cause destruction of auxiliaries (species of the Phytoseiidae family).

During winter: destruction of older stems (shoots renewal) extends life of orchard.

**Caterpillars of different species (*Archips rosana*, *Incurva capitella*,...)**

Their presence is not frequent but, some year, their impact is important in affected plots.

*Crop protection strategy*: using products with *Bacillus thuringiensis* (product certified in organic agriculture without effect on auxiliaries) or lambda-cyhalothrin in case of damages of other pests (aphids)