

Rose Rust

Rose rust is one of the most easily recognized diseases because of the bright yellow or orange pustules on leaf undersides. The pathogen is often *Phragmidium mucronatum*. The pathogen does not affect any crop except roses.



SYMPTOMS

The spots appear light yellow when viewed from the upper leaf surface. Long, narrow, orange spots may be found on young canes and sepals as well as leaves.

CULTURAL CONTROL

Rust spores are spread through air movement (wind or fan). The disease is most severe at temperatures between 65 and 70F. The rust spores need 2-4 hours of standing water on leaves before they can germinate so anything that shortens the time leaves are wet will help control rust severity. Plant spacing to allow rapid leaf drying and irrigating in a manner that keeps the foliage dry help manage rust. Try to water whenever leaves will dry quickly, to ensure dry foliage at night. Check all new plants for symptoms upon receipt. Early detection is the best way to control any disease. Scout all plants for symptoms once a week.



The cultural steps that should be taken when growing garden roses are:

1. Destroy rose debris from previous crops —spores can live on fallen leaves and canes for long periods if the conditions are dry.
2. Space plants to allow rapid drying of leaves. As the canopy closes in, the humidity increases, making rust more severe. Crowded plants also make effective spraying almost impossible.
3. Water at a time of day that will promote the fastest possible drying.
4. Apply fungicides as soon as the first rust pustule is found. Add a wetting agent (unless the label says not to) to make sure fungicide penetrates the pustule.

FUNGICIDES FOR CONTROL

In many cases of rust control, we are still relying on protectant products available in the 1970's such as chlorothalonil and mancozeb for prevention of rust and they remain some of the best products for killing spores and preventing disease.

These fungicides worked to different degrees when applied to plants either before or after inoculation. Azoxystrobin (Heritage) could prevent disease when applied up to 15 days before infection on sunflower while it provided

curative control around 5-7 days after infection occurred. Chlorothalonil (Daconil) did not provide curative control but was very effective preventatively on geranium (15 days) but not on daylily or sunflower. Myclobutanil (Eagle) gave relatively consistent prevention and eradication for about 5 days either before or five days after infection occurred on the three crops. Propiconazole (Banner MAXX) was similar to Eagle for eradication but not effective preventatively.



If an outbreak occurs, use of sterol inhibitors and strobilurins with a wetting agent will be your most effective means of eradication. The image above shows complete eradication of active rose rust when a wetting agent was applied with Heritage. Be sure to rotate between classes of fungicides and tank mix a protectant and systemic eradicator to make sure resistance does not develop.

The newer, systemic fungicides like FRAC 3 - sterol inhibitors (i. e. propiconazole, myclobutanil, triadimefon and triticonazole) as well as FRAC 11 - strobilurins (i.e. azoxystrobin, pyraclostrobin, trifloxystrobin) provide some eradicator benefits. Use a 14-21 day interval with protectants like mancozeb when conditions are unfavorable for rust and you are in a preventative mode.

As always read the labels to make sure they are legal in your state and rotate between FRAC groups.

The table below summarizes trials performed on ornamental rusts.

| Product | FRAC Code | Rust |
|----------------------------|--------------|-------------------------|
| Banner MAXX | 3 | good/ excellent |
| Cleary 3336, OHP-6672 | 1 | very good/ excellent |
| Compass O | 11 | fair/ excellent |
| Concert II | 3 and M5 | good |
| Dithane Rainshield 75DF | M3 | very good/ excellent |
| Eagle 20EW | 3 | very good/ excellent |
| Heritage | 11 | excellent |
| Junction | M1 and M2 | good |
| MilStop | nc | some/ very good |
| Mural | 7 and 11 | excellent |
| Pageant Intrinsic | 7 and 11 | good/ excellent |
| Protect DF | M3 | very good/ excellent |
| Spectro 90WDG | 1 and M5 | very good |
| Strike Plus | 3 and 11 | very good/ excellent |
| Terraguard 50W | 3 | good/ excellent |
| Tourney | 3 | excellent |
| Triact 70 | nc | very good/ excellent |
| Triathlon BA | 44 | none/ excellent |
| Trinity | 3 | excellent |