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## ***Geranium: Rust***

*Use Integrated Pest Management (IPM) for successful plant problem management.*

### ***Biology***

Rust is caused by a fungus that lives on plants and plant debris. This disease can spread by wind-blown spores or infected cuttings. Infections occur easily if leaves are wet for 5 to 6 hours in mild temperatures (55 to 75 degrees). Both leaf surfaces first develop white or yellowish spots, which enlarge and become blisterlike. The brown powdery pustules are often in target-like arrangement. The pustules occur mostly on leaves and less frequently on stems. Severe infection causes yellowing and defoliation. Cultivars range widely in genetic variation of resistance, from highly susceptible to immune.

### ***Management Options***

#### **Non-Chemical Management**

- ~ Destroy diseased leaves and severely affected plants.
- ~ Avoid wetting foliage, and water early in the day to allow for quick drying.
- ~ Reduce humidity by spacing plants for good air circulation.
- ~ Inspect new plants for disease symptoms.

*Select non-chemical management options as your first choice!*

#### **Chemical Management**

***IMPORTANT: Visit Home and Garden Fact Sheets for more information on using pesticides***

In certain situations, it may be useful to apply fungicides when rust first appears and at 10-day intervals (14-day intervals for Spectracide IMMUNOX), two to four applications per season. Apply sprays thoroughly, covering both upper and lower surfaces of leaves.

**Listed below are examples of pesticides that are legal in Washington. Always read and follow all label directions.**

- ~ Bonide Fung-onil Multi-Purpose Fungicide Conc
  - active ingredient: chlorothalonil
  - EPA reg no: 60063-9-4
- ~ GardenTech Daconil Fungicide Conc
  - active ingredient: chlorothalonil
  - EPA reg no: 67572-82-71004
- ~ Ortho Max Garden Disease Control Conc
  - active ingredient: chlorothalonil
  - EPA reg no: 239-2522
- ~ Spectracide IMMUNOX Multi-Purpose Fungicide Spray Conc
  - active ingredient: myclobutanil
  - EPA reg no: 9688-123-8845
- ~ This list may not include all products registered for this use.

## *Geranium: Rust*

### *Images*



*~ Caption: Geranium rust: upper leaf surface and lower leaf surface*

*~ Photo by: R.S. Byther*



*~ Caption: Geranium rust: close-up of sporulation*

*~ Photo by: R.S. Byther*