Rose rust, a fungal disease common in the western United States where environmental conditions are conducive for the fungus, is specific to roses and not transmissible between roses and other types of plants. It is not a major rose pathogen in Texas, but can be bothersome, burdening rose growers by diminishing the quality of the flower and, if left unchecked, can completely defoliate and kill the plant. The most common rose rust infections in Texas occur on roses grown in greenhouses. Luckily, it does not happen often and is not a very serious affliction. In fact, most infections do not require much control.

**Cause**

Several species of fungi in the genus *Phragmidium* cause rust on roses. These fungi are parasitic biotrophs of roses, meaning they need the living host to survive. They cannot survive on dead plant material unless they produce an overwintering spore (teliospore). Susceptibility varies widely among rose cultivars.

**Symptoms**

Rust is a “complete fungi”—it has five spore forms in its life cycle. Each spore form can cause infection; however, only three to four spore forms are observable, with two (teliospore and uredospore stages) seen quite often. While other rust species have alternate hosts (other plants that the rust can infect), rose rust does not.

The initial symptoms appear as orange pustules on the underside of the leaves (Fig. 1). These pustules lead to a reproductive or uredial stage, which produces uredospores (Fig. 2).

This spore stage repeats every 10 days to 2 weeks and serves as a constant source of inoculum for new infections. While other rust species can completely defoliate and kill the plant, rose rust can be both burdensome and costly, burdening rose growers by diminishing the quality of the flower.

**Figure 1.** Rose rust is easily recognizable by its orange pustules. *Source: Ashley Brake, Texas A&M AgriLife Extension Service*

**Figure 2.** The uredial stage of the rose rust fungus looks like an orange wart or pustule on the back of a leaf. Every 10 to 14 days, this reproductive stage produces massive amounts of spores that can re-infect the plant or new plants. *Source: Maddi Shires, Texas A&M AgriLife Extension Service*

**Figure 3.** As the rust infection increases, more pustules appear on multiple leaves of the plant. Chlorosis (yellowing) begins to occur on the affected leaves. *Source: Ashley Brake, Texas A&M AgriLife Extension Service*
continued infection on the plant. Typically, older leaves show rose rust symptoms before younger ones do, but the fungus can grow to cover the entire leaf and stem of a rose plant. Yellow spots on leaves and eventual chlorosis occur later during infection (Fig. 3). If left untreated, the rust infection will kill leaves and stems, causing premature defoliation and possible plant loss. The disease produces overwintering teliospores when conditions become less favorable for the fungi.

**Disease Movement**

In the spring, the wind carries overwintering teliospores to living plant material. Although most active in spring and fall, rose rust can persist and reproduce throughout the summer. High humidity and cool temperatures (64 to 69°F) favor disease development, and the fungus especially thrives in rainy, foggy, or misty conditions. Transmission of the fungal spores occurs via insects, rain, or wind.

**Control**

As with most plant pathogens, cultural practices that reduce favorable conditions for the pathogen and ensure plant health offer the best control:

- Plant resistant varieties, such as floribunda, musk, and shrub roses to minimize future control efforts.
- Prune and space plants far enough apart and in full sun to guarantee adequate air circulation to dry up free water on the plant, which the pathogen requires for survival and infection. In greenhouses, avoid condensation, another source of free water.
- Prune out infections as soon as you detect them to prevent the production and spread of spores throughout the growing season.
- Collect and destroy (do not compost) debris during autumn cleanup to reduce the number of overwintering spores.
- Use fungicides to control the disease. As with any chemical control, use caution, read all labels and directions, and do not overapply or improperly apply fungicides.

**Sources**


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**Texas A&M AgriLife Extension Service**

*[AgriLifeExtension.tamu.edu](http://plantclinic.tamu.edu)*

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