

# The Facts on Rose Rosette Virus

Story and photos by  
Millie W. Davenport



One of the signs that your rose is infected with rose rosette virus is excessive branching that causes a witch's broom to form.



New growth that is red in color is a sign of an infected rose bush.

Some of you may have noticed rose rosette virus (RRV) has been making an unwelcome appearance in landscapes around the Carolinas. Rose rosette disease was first detected in California, Wyoming and Manitoba, Canada in 1941. By 1994 it had spread to Tennessee, and it has since made its way to the Carolinas.

The pathogen that causes this disease was just recently identified as a virus. It most likely spread across the United States through wild rose populations such as *Rosa multiflora*. Multiflora roses are very susceptible to this disease and are also considered invasive plants in our region. The population of wild multiflora roses in the Carolinas has helped spread this virus, which is particularly lethal to multiflora roses, and is potentially lethal to other rose species and cultivars. Through these questions and answers you will learn more about RRV and how to prevent it.

## How is the rose rosette virus spread?

Other organisms called vectors often spread viruses. The primary vector of this virus is an eriophyid mite. Eriophyid mites can be found on tender new growth of buds and between stem and leaf petioles. Mites carrying the virus pass it from plant to plant as they feed on the plant sap of tender stems. Humans can also vector the virus through grafting and pruning. The virus does not stay in one place on the plant. Once a plant is infected the virus moves throughout the entire plant, including the roots and shoots.

## How did eriophyid mites get to my roses?

Eriophyid mites have four legs and are yellow to brown in color. These mites are not visible to the naked eye – they

are less than 1/200 of an inch long, which is about three to four times smaller than an average spider mite. These small mites move easily with wind currents. Eriophyid mites present on nearby populations of infected, wild multiflora roses can easily travel to your landscape. Also, infested plants could be unknowingly purchased and introduced to the landscape.

## How do you recognize this virus in the landscape?

Early detection of the virus is crucial to keeping nearby roses healthy. However, early detection can be difficult, because symptoms such as witch's brooms and misshapen leaves mimic damage typically caused by herbicides. Roses should be inspected for symptoms in the spring when new growth starts to appear. The appearance of these symptoms will increase as the growing seasons progresses. Symptoms may vary by rose species or cultivar. Some common symptoms of rose rosette virus include:

- Shoots and foliage with an abnormal red color.
- Stems that appear thick and succulent.
- Rapidly elongating shoots.
- Shoots with shortened internodes.
- Stems with an overabundance of pliable thorns.
- New growth may have many branches that create a witch's broom.
- Distorted or dwarfed leaves.
- Deformed buds and flowers.
- Abnormal flower color.
- Lack of winter hardiness.
- Spiral cane growth.

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More symptoms of rose rosette virus include: rapidly elongated shoots, distorted petals (middle) and excessive thorns (right).

#### Why is this virus showing up on disease-resistant roses such as Knock Out roses?

The Knock Out rose has become a staple in the landscape. When introduced to the market in 2000 it was named the All-American Rose Selection Winner. They were marketed as low-maintenance, drought-tolerant, self-cleaning roses that were resistant to powdery mildew and black spot. It is no surprise that this new rose took the market by storm with record-breaking sales. It became the most widely sold rose in North America. Since then, Knock Out roses have been used in mass plantings in multiple landscapes. Many plants of one variety planted closely together makes it easy for insects and diseases to spread, and that is particularly true for this disease.

#### How do I prevent this virus from infecting my roses?

It is best to start by purchasing disease-free plant material. When visiting the nursery, inspect plant material carefully and avoid buying roses that show symptoms of this virus. When planting new roses in the landscape, leave enough space for plants to mature without overlapping stems or leaves of neighboring roses. This extra space will help prevent mites from crawling from one plant to the next. Next, remove wild multiflora roses found within 100 yards of the landscape. If this is not possible, consider using a different plant species. The use of pesticides as a preventative is not a practical solution, and most miticides are not effective against eriophyid mites.

#### What if I don't know what multiflora roses look like?

Multiflora roses are often found growing wild on roadsides and pastures. They have an erect habit with arching branches from 3 to 10 feet long. This rose produces fragrant, 1-inch flowers with five petals from April to June in the Carolinas. To control multiflora roses in the landscape, cut them to the ground in the late summer and spray the cut ends with glyphosate. If the plant re-sprouts, spray the tender new growth with glyphosate.

#### What do I do if my roses are already showing signs of infection?

Unfortunately, infected plants are not curable. It is best to remove any diseased plants from the landscape. This virus is systemic and will move throughout all parts of the plant, including the roots, therefore it cannot be pruned out of the plant. Pruners used on infected roses should be disinfected before use on other roses to prevent spreading the virus. Remove and bag any plant material, including roots, to prevent spreading to healthy roses. Be aware that roots left in the ground are still infected and could re-sprout. If this happens, cut and remove the shoots.

#### Will my plants live? If not, how long will it be before they die?

Plants infected with the rose rosette virus cannot be cured. These infected plants should be removed. If diseased plants are left in the landscape they will most likely die in a couple of years, all the while allowing the virus to spread to other nearby roses.

#### Are my other plant species susceptible to this virus?

The good news is that the rose rosette virus is host specific and only roses are susceptible to this disease. The bad news is that most rose species and cultivars are considered susceptible to this virus.

#### How long will it be before I can replant the area?

The area can be replanted with a non-rose species immediately. ☺

*Millie W. Davenport is an extension agent associate at the Home & Garden Information Center with Clemson University. For additional information on these and many more topics, visit [www.clemson.edu/hgic](http://www.clemson.edu/hgic).*