

Watch Out For Rose Rosette

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Rose rosette, a disease new to the Dallas-Fort Worth area, has appeared in a few local rose gardens in recent years. Recognition of its symptoms, coupled with early detection, is the key to nipping it in the bud.

What are these symptoms? According to Dr. George L. Philley, Extension Plant Pathologist at the Texas A&M facility in Overton, the onset of rose rosette can look much like herbicide damage, but its effect soon becomes much more dramatic. Infected canes will sprout thick clusters (rosettes) of stubby, soft and brittle stems with elongated leaflets, a growth pattern commonly referred to as "witch's broom."

On most types of roses these abnormal growths will have a distinctive burgundy-red pigmentation, but on hybrid teas and some tea roses they may be lime-colored. The stems are usually very prickly, and the prickles tend to be soft and rubbery.

Symptoms may appear first on only one cane. If you can spot the disease then, you can try to stop it—and save the plant—by completely removing that cane. (Dr. Philley estimates that this is effective about 50 percent of the time.) Otherwise, the disease will spread quickly, and your only recourse will be to remove the entire plant, seal it in a plastic bag, and send it off to the landfill.

"Roses may show symptoms in as little as 3 weeks after infection," Dr. Philley says, "or they can have an incubation period of up to a year or more." But, once a plant is fully involved, rose rosette is always fatal, killing the rose within a year—or slightly longer in some cases.

This disease was first detected in the 1930s in wild roses growing in the mountains of California and Wyoming. Then it spread to stands of *Rosa multiflora*, an almost perfect host, and moved across the country and into the Midwest. In the late 1970s and early 1980s, it swept like a wildfire up the Ohio River valley and into West Virginia. Today, it's endemic wherever wild multiflora roses are found, including the nearby states of Oklahoma, Arkansas and Kansas.

In Texas, rose rosette was discovered around Tyler in 1990 in fields of multiflora roses being grown for use as rootstocks. It disappeared for a time but was identified in a garden in Mineral Wells in 1997. Then, in 1998, it showed up in Fort Worth and, later that summer, just north of Dallas in a large public rose garden in the city of Plano.

According to Dr. Philley, some new type of virus, not yet described, is suspected as the cause, but that's by no means certain. In any case, he says, it's almost impossible to transmit this disease mechanically, such as with clippers. Rose rosette is carried from plant to plant only by a tiny, woolly mite, *Phyllocoptes fructiphilus*. "But this isn't like a spider mite," Dr. Philley says; it's an eriophyid mite of the same general type that transmits virus diseases in wheat."



"It's microscopic in size," he adds, "but can be seen in a 10-power hand lens if you know what to look for—something like a fly larva, translucent to cream colored, and with 4 legs on one end." On a rose, it takes up residence in the axillary-bud regions under the stipules, where the petioles (stems) of the leaflets emerge from the canes.

"That's why multiflora and shrub-type roses make the best hosts for this mite," Dr. Philley says. "On those types, the petiole forms a tight crevice at the cane or stem." Hybrid teas have a more open joint and don't make nearly as good a host. But almost all types of roses are susceptible to infection (*Rosa bracteata*, the wild 'Macartney Rose' of central Texas, apparently isn't), although heavily pruned roses seem to have the fewest problems.

This tiny mite may have been blown into this area from Oklahoma by springtime weather fronts. On the other hand, it may have been introduced or simply rode piggyback on traveling aphids or thrips. "Evidence points to an introduction," says Dr. Philley, "that and some wild multiflora roses lurking along creeks and rivers."

(It was recently disclosed that rose rosette was detected in 1996 in multiflora roses inside the Hagerman Wildlife Refuge, located on the south shore of Lake Texoma, west of the town of Pottsboro. This is another possible source for the appearance of the disease in the Dallas-Fort Worth area.)

These mites can "balloon" on the wind and travel great distances, and they are commonly found in air samples collected for spore and pollen counts. According to Dr. Philley, the numbers of mites in such samples start out very low in the spring, begin to increase by June, peak in September, and then drop to zero after that.

Prevention is always the best cure, and this means killing the mite, along with its eggs, before it can do any damage. But miticides and other measures commonly used for treating spider mite infestations aren't effective because this is a different type of mite.

So far, the only chemical weapon that has proved to be effective is Cygon™ (dimethoate), a systemic insecticide and miticide. Dr. Philley says it might do the trick if sprayed twice, 7 days apart, and then monthly after that, starting early in the year as soon as the roses have leafed out. (It will also control other sucking insects and mites, but it is generally ineffective against tissue-chewing pests.)

Horticultural oil, neem oil, insecticidal soaps and the various seaweed products haven't been effective, he says, because they're not systemic. Furthermore, it is difficult to get them down into the crevices where the mites live and breed. However, horticultural oils may help prevent infestations if used to spray the bare canes just after the late winter pruning—and after all of the previous year's leaflets, with their petioles, have been removed.

Although this is a serious and potentially disastrous disease, gardeners shouldn't panic or forego the pleasures of roses. "Rose rosette is not yet a big problem in this area," Dr. Philley says, "and we hope it won't be. It just flares up now and then—like it did in Kansas in the 1970s—and somewhere out there in nature a population of mites has built up. But we don't have a large population of wild multiflora roses to keep it around, so maybe that can act as a dead end."

Only a few reports of infestations in the Dallas-Fort Worth area were received during 1999 and 2000, but that doesn't mean rose rosette is no longer a serious threat. So, since early detection is your best defense, it still pays to make close and frequent inspections of your roses.

And here's another consolation. Many budded or grafted roses are on *Rosa multiflora* root stock, which needlessly worries some gardeners. Although *Rosa multiflora* is a host for the disease and for the eriophyid mite, a rose on multiflora roots is no more susceptible to rose rosette than it would be if it were on its own roots or on another type of root stock. It is apparently the top growth and specifically the petiole-cane junction that determines susceptibility. And the type of root stock has nothing to do with that.

[This is an updated (to July 31, 2001) version of an article that first appeared in the House & Garden Section of The Dallas Morning News on January 1, 1999.]

Here are more photos of typical rose rosette symptoms:





Not every witch's broom is colored red! These are photos of the tea rose, 'Mons. Tillier'
(Photos by Jim Estes):





And here is a case on a Dr. W. Van Fleet climber that appeared in the Fall of 2000 but wasn't reported until March, 2001. (This picture was taken on March 23, 2001.)

