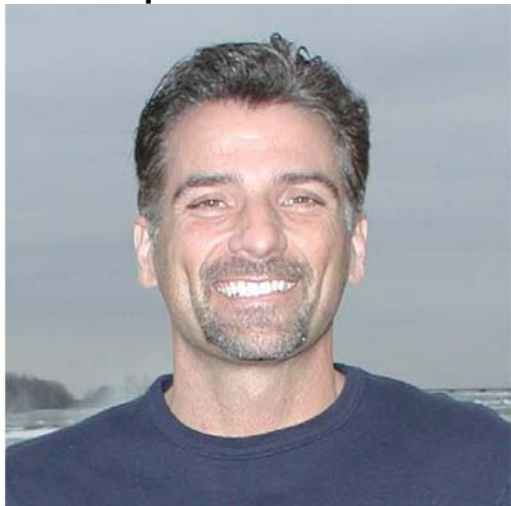


# RUST LIAISON REPORT

Mark Carpenter



## DAYLILY RUST: OBSERVATION AND TREATMENT FOR DAYLILIES IN THE SOUTH

2012 was a very important year for rust in the south here at The Lily Farm. There have been numerous improvements in the treatment of rust, and quite possibly a long term cure may be ebbing to the surface. This article will attempt to offer you some options for dealing with rust based on our observations here at The Lily Farm.

First, for those new to daylilies, let's define daylily rust or "puccinia." The AHS Daylily Dictionary defines rust in this manner: "Daylily rust is caused by the fungus *Puccinia hemerocallidis* and affects the leaves and scapes." Daylily rust is highly noticeable on the plant's foliage, as it has an orange colored appearance much like pimples and spreads rapidly. The main method it spreads is by the wind, but can also transfer by direct contact as well as other means. Most importantly, once you have rust on one plant, you in all probability will have rust on all of your daylilies due to the ease of spreading.

If you live in Zone 6 or less, the good news is that rust has not shown the ability to overwinter, meaning the rust that may be in the plants does not show the rust visibly due to the prolonged cold that Zone 6 or lower receives. In other words, even if you have plants with rust, the plants will not show rust the following year once they go through winter. But for Zone 7 or higher, winters are not severe enough to keep rust from successfully overwintering, so it will appear again in the spring or summer based on the severity (or lack thereof) of winter. For example, here at The Lily Farm we had a very cold winter 2 years ago (2010), with multiple days where the lows went to 20 or below. We never saw a hint of rust that following spring/summer until mid-June. However, last winter (2011) we had almost no days below 32, and rust was seen by mid-February this year at the farm (earliest ever seen) and spread rapidly due to the perfect mild and wet conditions in our area.

So the question I hear more than any other is this: What are my options if I have rust? That is what I will explore with the rest of this article. Progress is being made, and there are some promising products out there with one that may actually kill rust completely in the plant's tissue. Here are some options for dealing with rust:

1. **No Spray, Let Winter Kill Rust, Cut Foliage In Early Spring.** The most popular method "regular gardeners" follow that do not want to spray is to let winter kill off the rust, and then in the spring once the scapes are 1/2 way up or more, they then cut the foliage back to about 6 inches high. I thought this would look terrible but I did it anyway at my home garden in the front yard. To my surprise, what this did was actually put all the focus on the blooms, which in turn led to more people stopping and asking about "what is that pretty flower?" than I have ever had! I was actually quite pleased with this method.
2. **Do Absolutely Nothing. Rust does not kill daylilies, but it can be very unsightly.** If you want beautiful foliage all year long, this option is not for you. But if you have a decent cold winter, odds are you may make it through bloom season without having to deal with rust until blooms are done, and at that point many choose to let the rust go until the summer heat stops it (generally 97 degrees seems to be the point at which rust stops forming on the foliage based on my own local observations). Rust does affect the scapes, but it does not affect the blooms.



**Daylily Clump with Severely Infected Rust Spores (Photograph by Amerson)**



**Close-up of Rust Spores on Daylily Leaves (Photograph by Amerson)**

3. **Spray Only As Needed.** Once you go through winter, many choose to sit back and wait until they see the first signs of rust. At this point, they will then spray promptly with a fungicide to stop the rust in its tracks. The spraying options will be addressed later on in this article. But be aware that you need TWO types of spray .... one a contact spray that kills the rust that is already being seen on the plant, and a systemic spray that will suppress the rust in the plant so you will not see it on your foliage. If you have rust, spraying only a systemic will not do the trick. You need to add a contact spray as well. Once bloom season is over, you may choose to then ignore rust as most of us in the deep south will face those 97 or higher temps by June. If so, you probably will not see rust again until the fall (generally October/November) once the temps drop back below 97. You can then spray again as noted above or simply do nothing and let winter take care of it for you.
4. **Spray Constantly.** This is the method one chooses if they do not EVER want to see rust on their plants. This is the most expensive option, of course, as the systemic sprays that are proven to be effective are also very expensive. But with that said, this method is THE one way to ensure you will not have rust on your daylilies. Many will spray on a 15 to 20 day cycle, and they will do this continuously until they get a hard freeze (28 or below). They will then cease spraying until winter is over, and once days start warming up they will start back up BEFORE they ever see a hint of rust. This method, in conjunction with products on the market that I will discuss later, is THE METHOD that will allow one to completely rid their plants of rust.

Here are facts one most understand and follow concerning spraying for daylily rust. It is vital to note that almost all recommendations on spraying include the alternating of fungicides by mode of action. So, do NOT use only Heritage when spraying for rust, but alternate it with other products that have a different mode of action, such as Banner Max, Strike, Bayelton, etc.

First, a CONTACT spray MUST be used FIRST when rust is visible on the daylily foliage. Contact fungicides include: Mancozeb (known as Dithane) and Daconil. Surprisingly, I have found regular Dawn Dishwashing soap to be an effective contact spray for active rust even though it is not a fungicide.

Next, a SYSTEMIC spray MUST be used AFTER or in conjunction with a contact spray (i.e., you can mix the contact and systemic together and spray at the same time). Here is where there appears to be a SIGNIFICANT breakthrough in the treatment of rust. There is a systemic fungicide called Cabrio (powder form) that is also available in liquid form (Headline) that appears to actually kill the rust in the tissue of the plant. This has not been confirmed through documentation yet, but Headline actually claims to kill daylily rust completely when used at maximum strength for 5 consecutive sprayings. We have followed this spray regime here at the farm this year and we will wait until next spring to determine if indeed the plants are rust free. I also mix Dawn in with any systemic spray that I use (generally one teaspoon of Dawn per 1 gallon of water used) to act as the contact spray.

Also, many have voiced concern over what the “average” gardener can get their hands on in terms of sprays for rust without spending a ton of money for the big name products. Here was another surprise for me this year

at my home garden in Nacogdoches. I purchased an over the counter spray at Lowe's by the name of Garden Safe Spray III for about \$5 dollars. I sprayed my plants that had rust already on them at my home garden first with Dawn, and then I followed it with the Garden Safe Spray. The results were that the rust was still on the plants, but at visually acceptable levels for the most part. In other words, it did not stop the rust, but it proved to be acceptable in terms of how the foliage looked to me from a distance. Those same plants do not have a trace of rust currently in the home garden (August), but I do expect them to show it again this fall. But with that said, it appears that some "over the counter" fungicides that are specifically labeled for rust (usually rose rust on the label) do appear to do a decent job at slowing rust down. Another option of course is where some clubs will go in and split the cost of a product like Cabrio and then disperse among the members, thus lowering the cost per use to each member.

Other findings that I have confirmed with trials here at the farm include:

- A. Rust needs water to actually formulate on the foliage. The more you starve the plants of overhead water, the slower rust will take hold. Overhead watering allows the foliage to stay damp, forming a perfect vehicle for the rust to appear. If you can water the plants via drip irrigation that would be the preferable method.
- B. You can receive plants that appear to be rust free, but they may not actually be. At the time of receipt of a new plant, the rust may be latent in the foliage. Many choose to quarantine these plants in pots and keep them separate from their other daylilies until they go through a full winter period. I agree with this method as a precaution.
- C. Many plants come from "rust free" nurseries. However, this again does not mean the plants are guaranteed to be rust free. For example, if a nursery is on a continuous spray regime, they will never see rust at their farm, and therefore can ship their plants claiming to be "rust free." In my view, if a nursery sprays for rust for any reason, they probably had rust at one time. In the past, if a plant had rust, it will eventually show it again, but this may change with the use of Cabrio/Headline, which may actually eliminate rust in the day-lily. Again, this has not been confirmed, but tests here at the farm are proving very hopeful in this area.
- D. Try not to plant your daylilies too close together, as this also helps control the spread of rust.
- E. I am wary of claims that there are plants that are "rust proof." We have over 5 acres of daylilies here at the farm, and only a handful showed super rust resistance. But even those over time showed at least small signs of rust once exposed to it on a continuous basis. So I would treat every new plant as if it may have rust just to be safe. There are some plants that do have greater rust resistance than others, but from my observations here at The Lily Farm the majority of daylilies on the market today are for the most part average at best for rust resistance.

In summary, there appears to be exciting progress being made as we evaluate fungicides and their affect on rust in our beloved daylily. I am finding that the general public is not nearly as bothered by rust as collectors were initially, as John Q Public tend to purchase their plants for the beauty of the bloom, and they deal with the rust by the most part ignoring it. This is also true of those who wish to be chemical free with their plants. But the advance of products such as Cabrio and Headline offer important advances for the future, as ultimately the control of rust in the south is paramount to being able to grow this market to the average consumer. Ideally they need to be able to buy plants where rust is not an issue. For most of us, the truth is we will never give up our precious daylilies, as nothing on earth compared to the variety of blooms that they give us!!!

LONG LIVE HEMEROCALLIS!!

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Region 6 Rust Liaison