



Frequently Asked Questions

November 2020

What is lethal viral necrosis (also called LVN, sugarcane mosaic virus or SCMV)?

Where did it come from?

It is a virus that kills Floratam cultivar (a cultivated “variety”) of St. Augustinegrass. A related virus was probably spotted on St. Augustinegrass growing in ditches within sugarcane fields in rural western Palm Beach County in the early 1960’s. However, genome testing now show the lethal viral necrosis is genetically different than those that attack sugarcane.

How long does it take LVN to kill Floratam St. Augustinegrass?

Lethal viral necrosis kills the Floratam cultivar of St. Augustinegrass, usually within three years of symptoms showing up.

How does lethal viral necrosis spread?

The virus primarily spreads when infected lawns are mowed, the equipment picks up fresh plant sap on tires, and then the same equipment is used to mow other lawns before sap or clippings completely dry out. Once sap and clippings thoroughly dry out on mowers, the equipment will not transmit any viable LVN virus to new lawns. The virus cannot survive for long outside of plant tissue. Mowing when lawns are wet should be avoided when possible because it lengthens the time that sap remains hydrated on equipment. Feeding aphids puncture plant tissue searching for sap, and may be incidental transmitters of the virus. It can also be transmitted when infected sod, plugs or sprigs are planted in lawn areas.

Do wheels on lawn mowers or lawn equipment spread the disease?

Yes, mower wheels are believed to be the primary spreading mechanism when they pick up moist plant sap during mowing or cutting. It is likely that the abrasion caused by sap covered wheels forces the infected viral material into turf leaves and other tissue.

Can the disease be spread by irrigation water, or reclaimed irrigation water? Can best management practices improve survivability?

No, the virus does not survive in irrigation water or reclaimed irrigation water. Following Best Management Practices on the Floratam St. Augustinegrass (proper irrigation, fertilization, etc.) do not improve the survivability of Floratam infected with the virus.

Does the virus survive in soil?

No. Once the virus is out of the plant tissue, and the sap dries, the virus does not remain viable. However, any remaining infected live tissue like stems or stems with roots can continue to be reservoirs for the virus.

Can non-symptomatic grass be a source of the virus?

Yes, if the grass is a known host of the virus. Lawns may not be showing obvious symptoms, but may contain the virus. Symptoms are often difficult to see during the warmer and wetter months when the turf is growing more vigorously. Symptoms tend to become more visible as we move into the fall cooling months.

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Do clippings need to be removed from freshly mowed lawns?

No, clippings dry out and deteriorate quickly. Once completely dried out, they can no longer be a source of the disease. Additionally, clippings recycle some of the nutrients back into the lawn. Clippings that land on walkways, roads, etc. should be blown or swept back on to lawn areas where they originated. Clippings should only be removed if other fungal leafspot diseases, like rust or gray leafspot are seriously affecting the lawn.

How long will Floratam St. Augustinegrass live after infection?

Lethal viral necrosis kills Floratam within three years. Sometimes death occurs more rapidly.

Why is Floratam St. Augustinegrass so widely planted?

Floratam St. Augustinegrass is the most commonly planted cultivars of St. Augustinegrass in Florida because it tolerates a wide variety of Florida conditions. It was released in 1973 by the University of Florida and Texas A&M University as an improved cultivar resistant to another virus called St. Augustine decline virus (SAD). SAD was devastating St. Augustinegrass lawns along the Texas Gulf Coast. St. Augustine decline virus is not thought to be in Florida. Initially, Floratam cultivar may also have been somewhat resistant to chinch bugs. Large chinch bugs populations can be destructive to St. Augustinegrass if not treated via an effective insecticide program.

Why do I have lethal viral necrosis on my lawn, but my neighbors do not?

It may be that your property was infected at a different time than other lawns; or that some lawns are not showing symptoms during the summer rapid turf growth time of year; or that only some of the turf was already stressed by other cultural or disease problems, and therefore is succumbing more quickly. It also appears from current surveying that St. Augustinegrass sod may contain a mix of two or more cultivars. So, your lawn may be a little different than your neighbors. Only Floratam cultivar is known to be killed by the virus.

How can you identify lethal viral necrosis in your lawn versus nutritional deficiencies, fungal or other problems?

Symptoms to the untrained eye can often be confused with other common St. Augustinegrass maladies including nutritional deficiencies, fungal problems like rust, cold damage, or even herbicide burn. The best way to be sure the Floratam St. Augustinegrass has lethal viral necrosis is through laboratory testing. Submit "plugs" of the turf that are exhibiting the characteristic elongated, yellow spotting on leaves. Also, a good quality photo or two of the symptoms emailed to the UF/IFAS Extension, Palm Beach County office can be reviewed by an extension agent to see if the disease can be easily identified, or further testing is necessary.

How do I collect, send and pay for lab testing?

Sod plugs at least 4 or 5 inches across and a couple of inches deep into the roots of symptomatic (yellow or necrotic spotting), but still alive Floratam St. Augustinegrass should be shipped overnight in Ziploc type plastic bags to:

University of Florida Plant Diagnostic Center
2570 Hull Rd, Bldg. 1291
Gainesville, FL 32611-0830
Telephone: 352.392.1795
Email: pd@ifas.ufl.edu

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Samples can have most of the soil gently shaken off to reduce shipping weight. Send samples early in the work week so they do not sit over the weekend waiting for lab analysis. The specimen submittal form is available at: https://plantpath.ifas.ufl.edu/misc/media/PDC/PDC_Submission_form_CC_1-18-8.pdf

The form indicates a cost of \$40 for Florida residents and businesses for plant analysis, but fungal and virus testing combined cost \$60. Indicate that you want the specimen tested for virus. If only the virus testing is requested, the cost is \$20.

Why does my virus affected Floratam St. Augustinegrass look great in the summer, and bad in the fall and winter?

Floratam St. Augustinegrass is a tropical grass and grows much more vigorously during the warmer and wetter months. Once growth begins to slow, usually around October or November, but sometimes as early as September, symptoms may become more evident.

Are other lawn grasses besides Floratam susceptible to lethal viral necrosis?

No, most of our warm season grasses can become infected with the virus, but are not killed by it. In some turf cultivars and species the elongated yellow spotting may be evident. We call those symptoms **mosaic**. Known turf hosts of the virus include all cultivars of St. Augustinegrass, Bermudagrass, Paspalum, Bahiagrass, some ornamental grass and crabgrass. Zoysiagrass is not a host. Again, only Floratam cultivar of St. Augustinegrass is killed by the virus.

Are other landscape plants susceptible to, or carriers of the virus? How about weeds, pets, birds, other wildlife or people walking on the lawns?

Broadleaf plants are not affected. A few other “monocots” like sugarcane, ornamental grasses, etc. can be carriers. Pets, wildlife, people walking on affected lawns, hoses for watering, spray hoses used by your pest control company, or bicycles are all unlikely to spread the disease to healthy lawns. There may be a possibility that aphids feeding on the affected grass may incidentally spread the virus. However, we do not really know for sure. Aphids may just be probing the St. Augustinegrass as a possible food source, without actually feeding on it. No other insects are believed to be possible vectors.

What are the suggested mowing and lawn maintenance practices for an affected Floratam St. Augustinegrass lawn?

University of Florida Best Management Practices (BMPs) are recommended for maintenance of lethal viral necrosis affected Floratam St. Augustinegrass. However, BMPs are unlikely to extend the life of the turf. This includes the proper 3.5 to 4 inch mowing height for Floratam.

Are there any chemicals, fungicides, pesticides or “vaccines” that can be applied to lawns to cure the lethal viral necrosis?

No. However, the fungal problem take-all root rot (TARR) is often found in virus affected areas. Weeds also tend to be more of a problem in virus weakened Floratam St. Augustinegrass, just as they are in lawns mowed below recommended heights, or that receive inadequate or excessive irrigation, or inadequate nutrition.

How can virus spread be stopped?

Grass clippings and plant sap should be blown off mowing equipment on lethal viral necrosis affected sites. Spray equipment after with recommended sanitizers and allow to dry to destroy any virus that may remain on the equipment. A good management technique for commercial lawn maintenance companies is to mow lethal viral necrosis affected lawns as the last lawns of

the day. Unfortunately though, sanitation practices by even committed companies have proven not to be very effective in slowing the spread of this virus in real world situations.

What are the current recommended mower and trimmer sanitizing materials?

Spray sanitize mower/line trimmer equipment after working on affected properties with one of the following (studies have demonstrated 100% destruction of the virus on equipment when cleaned and sanitized with the first two products below):

- DuPont **Virkon S** at a 2% solution (follow label)
- Household Bleach (9 parts water mixed with 1 part bleach) *Caution: bleach rusts steel*
- Other sanitizers like Pine-sol type products or Lysol are almost as good, but did not perform quite as well in trials

Can the disinfectant materials or other products be applied to lethal viral necrosis affected lawns for control?

No disinfectants or other materials will not effectively destroy the virus inside the living plant tissue. Additionally, disinfectants are labeled for legal disease management on lawns, and would likely damage the turf. Be careful with companies recommending otherwise.

What are other management options?

Replace dying Floratam St. Augustinegrass with any other St. Augustinegrass cultivar, or other appropriate turfgrass species. Currently, **Palmetto** is likely the best St. Augustinegrass cultivar option for Palm Beach County, although it does tend to suffer a bit more from some fungal diseases than Floratam. Another promising cultivar, **CitraBlue** is available, but the University of Florida is not quite ready to state it will be resistant to the virus until some additional research is completed. The University also has not yet tested Scotts ProVista cultivar for resistance. The very old cultivar, Bitterblue is no longer recommended because surveying shows that it tends to be a mix of other cultivars, and may even contain some Floratam. Bitterblue genetic purity was probably lost unknowingly to growers many years ago through standard cultivation practices. In other parts of the state where specific St. Augustinegrass cultivars make sense, research has shown the following so far to be resistant to the virus: DeltaShade, Raleigh and the dwarf cultivars Delmar, Sapphire or Saville. All tend to have greater fungal problems, and some have greater chinch bug problems than Floratam. Lawn areas can be completely resodded with recommended varieties, or they can be “plugged” with smaller pieces into existing affected Floratam St. Augustinegrass lawns. Plugging may not make good economic sense for large area replanting though. None of the listed St. Augustinegrass cultivars can be planted from seed. Other resistant turf selections can include bermudagrass, bahiagrass, paspalum or zoysiagrass. It must be noted that each of the non St. Augustinegrass selections have their own set of management criteria that tend to be quite different from Floratam.

Overseeding virus affected and thinning Floratam in the fall with a cool season grass like Ryegrass can be a temporary aesthetic measure for the winter “snowbird” season. Lawn dyes are also available. These provides a temporary greening for better visual appeal. Enhanced weed management probably will be necessary.

What about getting rid of the old Floratam before replanting?

Remaining Floratam and weeds should be killed with an appropriate herbicide like glyphosate, and debris be raked up before replanting. If you prefer to avoid herbicides, old turf should be

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peeled up with a sod cutter or other appropriate device before replanting.

What research is underway to help solve the problem?

Research continues at University of Florida to determine genetic variations that occur in some key St. Augustinegrass cultivars. CitraBlue cultivar evaluation continues, along with additional turfgrass breeding. Mixed cultivar sod is also being explored as an option to reduce disease and insect management issues.

*For further information, contact the University of Florida/Palm Beach County Extension Master Gardener Hotline at telephone: **561.233.1750** or email: mgardenfwd@pbcgov.org and visit our Lethal Viral Necrosis web page at: <http://discover.pbcgov.org/coextension/horticulture/Pages/Lethal-Necrosis.aspx>*

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