

Frequently Asked Questions

March 2018

What is lethal viral necrosis (formerly sugarcane mosaic virus - SCMV)? Where did it come from?

The related virus, sugarcane mosaic 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 (genetic) testing now shows the lethal viral necrosis is a combination of two viruses that are genetically different than those attacking sugarcane. One of the viruses has been known to occur in bermudagrass and is thought to have arrived in Florida in corn plants. It causes minor symptoms on bermudagrass, and does not kill it.

Why is lethal viral necrosis of St. Augustinegrass a problem?

Lethal viral necrosis kills the **Floratam** variety of St. Augustinegrass in three or less years.

How is lethal viral necrosis spread?

The virus is harbored in the moist plant sap from infected grasses. Freshly cut lawns release plant sap. Lawn mower wheels, trimmers, and other similar equipment are believed to be the primary transmitters. Once the sap and clippings completely dry out, they no longer transmit the virus. It does not survive for long outside the plant tissue. Mowing when lawns are wet can extend the viability of the virus on equipment because it keeps the plant sap hydrated longer. It is also believed that aphids feeding on turfgrass may occasionally transmit the disease. Conceivably, the virus could also arrive on infected sod, plugs or sprigs.

Can 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 the plant sap immediately after mowing or cutting. It is believed 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. Additionally, despite recommendations to follow University of Florida Best Management Practices on the Floratam St. Augustinegrass, proper irrigation, fertilization, etc. will not improve the survivability of Floratam infected with the disease.

Do the viruses survive in soil?

No. Once the virus is out of the plant tissue, and the sap dries, the virus does not remain viable.

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 may be especially difficult to see during the warmer

Lethal Viral Necrosis

and wetter months when the turf is growing more vigorously.

Do clippings need to be removed from freshly mowed lawns?

No, clippings dry out and deteriorate quickly. At that stage, they no longer can 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 they originated from. Clippings should only be removed if other funga leafspot diseases 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 the Floratam variety of St. Augustinegrass so widely planted?

Floratam St. Augustinegrass is the most commonly planted variety of St. Augustinegrass in Florida. It was released in 1973 by the University of Florida and Texas A&M University as an improved variety resistant to another virus called St. Augustine decline virus (SAD). SAD was devastating St. Augustinegrass lawns along the Gulf Coast, and especially in Texas. St. Augustine decline virus is not thought to be in Florida. Initially, Floratam variety 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 others do not?

This is a difficult question. It may be that your property was infected at a different time than other lawns; or that some lawns are not showing symptoms as evenly because it is the rapid turf growth time of year; or that the turf was already stressed by other cultural or disease problems, and therefore is succumbing more quickly; or that disease just developed more quickly in some spots as opposed to other spots. An unlikely, but still possible scenario might be that some patches of grass do not die out when surrounded by diseased and dead turf. It is possible that the surviving spots are slightly genetically different; or, another "contaminant" resistant variety of St. Augustinegrass was mixed in with your sod when purchased, or was brought in later on equipment, etc. The virus currently is known to be wide-spread in both Palm Beach and Pinellas Counties, and probably throughout southern Florida. It has also been found in several other Florida counties.

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 and cold damage. The best way to be sure the Floratam St. Augustinegrass has lethal viral necrosis is through laboratory testing of turf plugs that are exhibiting the characteristic splotchy yellow streaking on leaves.

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, but still living Floratam St. Augustinegrass should be shipped overnight in Ziploc type

Lethal Viral Necrosis

plastic bags to:

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

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 sample submittal form indicates a cost of \$40 for Florida residents and businesses for plant fungal disease analysis. However fungal and virus testing costs are \$60. Indicate that you want the specimen tested for virus. If only the virus testing is requested, the cost is \$20. The [specimen submittal form](http://plantpath.ifas.ufl.edu/media/plantpathifasufledu/plant-disease-clinic/PDC_Submission_form_CC-1.18.18.pdf) is available at: http://plantpath.ifas.ufl.edu/media/plantpathifasufledu/plant-disease-clinic/PDC_Submission_form_CC-1.18.18.pdf

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 even as early as September, symptoms may become more evident.

Are other lawn grasses susceptible to lethal viral necrosis?

Yes, but **it does not kill them**. Along with all St. Augustinegrass varieties, known turf hosts of lethal viral necrosis are bermudagrass, paspalum, bahiagrass, and ornamental fountain grass (*Pennisetum spp.*). Also, crabgrass, sorghum, corn and sugarcane can be hosts to the virus. Zoysiagrass is **not** a host.

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

No, **broadleaf plants are not affected**. Other grasses beyond those listed above are not known to be carriers of lethal viral necrosis. Pets, wildlife and people walking on affected lawns are unlikely to spread the disease to healthy lawns. Aphids feeding on the affected grass may incidentally spread the virus. No other insects have yet been identified as vectors.

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

University of Florida Best Management Practices are recommended for maintenance of lethal viral necrosis affected Floratam St. Augustinegrass, although they are unlikely to extend the life of the turf. This includes **mowing to 3.5 to 4 inches in height** (<http://edis.ifas.ufl.edu/pdf/LH/LH01000.pdf>) for this turfgrass variety.

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 variety St. Augustinegrass, just as they are in lawns mowed below recommended heights, or that receive inadequate or excessive irrigation, or inadequate nutrition.

Lethal Viral Necrosis

How can virus spread be controlled?

Grass clippings and plant sap should be blown off mowing equipment on lethal viral necrosis affected sites. It is recommended that sanitizers be sprayed on equipment and allowed to dry to destroy any virus that may remain. A good management technique for commercial lawn maintenance companies is to mow lethal viral necrosis affected lawns as the last lawns of the day. Theoretically, newly planted lethal viral necrosis infected sod could be a source. However, this is unlikely because lethal viral necrosis infected Floratam variety St. Augustinegrass would not grow well enough to produce a salable turf.

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 products. Note: studies have demonstrated 100% destruction of the virus on equipment when cleaned and sanitized as described:

- DuPont **Virkon S** at a 2% solution (follow the label directions)
- Household Bleach (9 parts water mixed with 1 part bleach) *Caution: bleach rusts steel*

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

No. The materials are surface disinfectants, and would not destroy the virus inside the living plant tissue. In addition, they would likely damage turf, and are not legally labeled for disease management on lawns.

What are other management options?

Replace dying Floratam St. Augustinegrass with one of the following St. Augustinegrass varieties including **Bitterblue**, **DeltaShade**, **Palmetto**, **Raleigh** or the dwarf varieties **Delmar**, **Sapphire** or **Saville**. All have been demonstrated through University of Florida research to be resistant to the virus. Be aware that 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 allows the resistant varieties to fill in as the Floratam declines and dies. None of the varieties can be planted from seed. Other resistant turf replacement selections can include **bermudagrass**, **bahiagrass**, **paspalum** or **zoy-siagrass**. 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 variety of St. Augustinegrass.

Overseeding the virus affected 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.

What are the long-term solutions for lethal viral necrosis on Floratam St. Augustinegrass lawns?

Minimize the spread with recommended sanitation practices, and replace infected Floratam with resistant turf varieties.

What research is underway to help solve the problem?

Research is underway by the University of Florida to determine what the genetic differences are occur within Floratam and Bitterblue St. Augustinegrass varieties, and if there are possibly

Lethal Viral Necrosis

genetic variations within Floratam variety (accessions) that are resistant to the disease. Additionally, “molecular markers” are being determined to help accurately identify St. Augustinegrass varieties. Currently, the genetics, especially with older varieties like Bitterblue, are not well understood. This will help improve the ability to get the varieties of St. Augustine turfgrass accurately identified, and may distinguish specific “types” within varieties that are resistant or susceptible to the disease.

How can I track the confirmed spread of the virus in Florida?

The University of Florida Plant Pathology Department provides a link to a [tracking map](https://maps.bugwood.org/presence/index.cfm?sub=56472¬itle&states=fl&limitstate) (<https://maps.bugwood.org/presence/index.cfm?sub=56472¬itle&states=fl&limitstate>) of counties that have had the disease identified via laboratory analysis. There might be a slight delay between when positive identifications occur, and when they are reflected on the map.

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>

Revision Date: March 2018

Author: William L. Schall, Palm Beach County Extension

Special thanks to Dr. Phil Harmon, University of Florida for much of the technical information in this publication, and to Laurie Albrecht, Palm Beach County Extension for helping determine which questions to include.