Fire! The word is a scary one because fires are very frightening. In our workplace, management has done its best to eliminate fire hazards and to protect life and property if a fire should break out. But the company also relies on each one of you each day to help prevent a company fire disaster. Here are some ways in which you can do your part.

The Worst Case

Let's begin at the end, with the most important warning of all: if there is a fire, pull the fire alarm nearest you and exit the building. If you are on an upper floor, *do not take an elevator*, but use a stairway. Elevators will usually cease to operate during a fire, and many people who have tried to flee by elevator have died from heat, smoke, and deadly gases.

Do you know exactly where at least two exits close to your work area are? If not, locate them today, as soon as this meeting is over. Learn them so well that you could reach them in the dark, because the smoke from a fire may be so thick that no one will be able to see the route to the exit. In the event of a serious fire, remember, you will have to crawl on your hands and knees to an exit in order to find breathable air and to escape some of the heat.

Prevention Is the 'Cure'

It should never come to that, however, if every one of us is careful and understands how fires start. *You can stop a fire by not causing one.* Preventing fires begins with following safe storage practices, as they are set out in company safety rules. For instance, flammable liquids must be put back in their assigned place, never in a more convenient spot to be returned for safekeeping later on. Later on may never come. Store them where they belong now.

The same rule holds true for oil- or solvent-soaked rags. Don't just drop them wherever you are when you stop working; place those rags in the proper metal container with a self-closing lid.

And whatever hazards are around—and there are bound to be some in a normal, active workplace—remember to follow the smoking rules exactly as set forth by the company. If you think "Oh, it doesn't matter as long as no one's around to see me," you are mistaken—and it may be your last mistake.

Fires are also caused by carelessness with electrical appliances. If you plug something in and it smells as though it may be starting to burn, disconnect the unit at once and report a malfunction. Every time you prepare to plug in a tool or machine, check the cord. If a cord is cracked or frayed, don't use the tool or machine—turn it in or report it for repair instead.

More fires start during winter than at any other time of year. This is because heaters are often used in an unsafe manner. Any heater used in your work area must be placed so that it cannot be tipped over and must be kept out of walkways and away from flammable

materials. Never leave the heater turned on when your shift is over. Don't just turn it off, either, but pull the plug so that it won't go on automatically when no one is there. Let the next shift plug the heater in themselves, so that they realize it is on and has to be watched.

Just in Case …

Always keep aisles and exits free of obstructions. If a fire does occur despite precautions, you must be able to get out quickly without falling over boxes and machinery. Also, keep doors to enclosed stairways closed because an open door can cause extra danger during a fire, by letting smoke into the stairwell and making it difficult to escape.



November
Team Member Appreciation Event

Tuesday, November 3rd – Sunday, November 15th

Over **$60,000** in spectacular prizes and gift cards expected to be awarded throughout the event!!!

Sales Inspectors, Technicians/Specialists, Account Managers, Admin, Termite Renewal Inspectors, Svc Ctr Management, and RMs are all eligible to participate… It's OUR whole company effort to finish off another great year at Massey Services….

Where Our People Make The Difference!

We're making it easy to get recognized and rewarded for finding needs, presenting solutions, and providing services throughout our service footprint!!

TURN THE PAGE FOR DETAILS

Individual Performance Awards

Position	Min Performance Needed During Event to Qualify	Reward
Sales Inspectors	$15,000 in New Sales	For every $250 sold ABOVE THE MINIMUM, earn $5 in Gift Cards*
Account Manager/Senior Account Managers	$15,000 in New Sales	For every $800 sold ABOVE THE MINIMUM, earn $5 in Gift Cards*
National Account Managers	$30,000 in New Sales	For every $1,600 sold ABOVE THE MINIMUM, earn $5 in Gift Cards*
All Technicians, Specialists, Termite Renewal Inspectors	10 Svc Leads (entered and proposed between 11/1 - 11/15)	For every Svc Ld that gets personally created, entered, & proposed between 11/1 - 11/15 ABOVE THE MINIMUM, earn $5 in Gift Cards*
Svc Ctr Admin (incl OMs)	20 Svc Leads (entered and proposed between 11/1 - 11/15)	For every Svc Ld that get personally created, entered, & proposed between 11/1 - 11/15 ABOVE THE MINIMUM, earn $5 in Gift Cards*
Svc Mgrs/ Technicians/Specialists	$1,500 in New Sales	For every $150 sold ABOVE THE MINIMUM, earn $5 in Gift Cards*
Sls Mgrs/Re-inspectors	$5,000 in New Sales	

*Walmart or Target Gift Cards primarily but may be Visa or similar. No reward for partial segments (i.e. < $150, $250, or $800 increment). After reaching the minimum performance in total sales, the max. gift card amount awarded on any individual/single-service sale is $100. All decisions relating to this Event are at the sole and complete discretion of the VP-Business Development and/or President/CEO.

All Gift Cards will be delivered to your Service Center PRIOR to December Holidays!

GM/Svc Center Performance Awards

Challenge
Be Trending Sales Budget by End of Event (11/1 - 11/15)
Minimum Requirements to Qualify
Service Center must be at or ahead of sales budget trend by the end of the Event. For example, a svc ctr must be = or > 52.6% by the end of the event with 52.6% of the month gone.
Reward
All GMs whose Service Centers qualify will receive $100 Gift Card

Regional Performance Awards

Challenge
Achieve 15% Sales Growth for November OR Achieve 15% Revenue Growth for November*
Minimum Requirements to Qualify
Region must achieve 15% Sales Growth for November OR achieve 15% Revenue Growth for November*
Reward
All Regional Managers who achieve the challenge will receive $100 bonus.

*net of acquired revenue from acquisitions made in 2025/2026. A minimum of 10% in each category is required to win

All Gift Cards will be delivered to your Service Center PRIOR to December Holidays!

Now, turn the page once more for some more really good stuff...

Mini-Contests for Top Sales Performances

Day(s)	Contest	Places Paid Out	Rewards
Daily (Fri/Sat/ Sun combined, M-Th daily)	Top Sales Dollars	**SALES INSPECTORS:** Top 10 performances each Monday-Thursday plus Friday/Sat/Sun weekend ***COMM/MF/NewCon ACCT MGRS:** Top 4 performances each Monday-Thursday plus Friday/Sat/Sun weekend **TECHS/SPECIALISTS/REIS:** Top 4 performances each Monday-Thursday plus Friday/Sat/Sun weekend	Each workday, with Fri/Sat/Sun being combined, there will be a daily mini-contest for highest volume of sales. There will be up to 18 winners each day. See the attached list for a complete listing of prizes.
Nov 3-Nov 15	Top Inspectors *Top Sr/Acct Mgr in Commercial Top Sr/Acct Mgr in MF Top Tech/ Specialist/REI Top OM/CSR	Top 5 in $$ Top 2 in $$ Top 2 in $$ Top 5 in $$ Top 5 in $$ Sold from Svc Leads they Generated and Proposed	In addition to the daily mini-contests, there will be awards for overall winners. To qualify, you must meet/exceed the minimum performance threshold for your position See the attached list for a complete listing of prizes!

*National Account Managers are excluded from eligibility for all Daily and Contest Prizes.

Winners will be contacted by Lynn Stephen each day with directions to select their rewards. TO SPREAD THE JOY, THERE IS A MAX OF 3 DAILY PRIZES PER INDIVIDUAL TEAM MEMBER. All eligible dollars count towards TOP Winners/Prizes results.

TURN THE PAGE TO SEE THE PRIZE LIST

(subject to availability)

Daily Prizes

Native Union (RE)Classic Magnetic Power Bank 10,000mAh • Amazon Kindle Paperwhite (16GB) • **SodaStream Art** • Google Nest Thermostat – Snow • **NOMAD BBQ Tool Set** • Hydro Flask Carryout Backpack Cooler • **Ninja Detect Power Blender Pro** • Cuisinart Outdoor Charcoal Smoker • **Garmin Dash Cam Mini 3** • Marshall Emberton III Portable Speaker • **Nutribullet Turbo Blender** • Nespresso by Breville • **Zadro Ultra Large Luxury Towel Warmer** • Anker Soundcore Space One Wireless Headphones • **Bose Flex 2 Bluetooth Speaker** • 43" Pioneer Smart Roku TVs • **Cuisinart Bread Maker** • iLive Cinema Pop-Up • **Cuisinart Compact Air Fryer Toaster Oven** • Ring Alarm Motion Detector – 2nd Generation • **Ostrichpillow Heated Neck Wrap – Midnight Grey** • iLive Tiki Bluetooth Speakers • **American Tourister Stratum Carry-On Spinner** •40" Insignia TVs • **Rexing 2-in-1 Jump Starter & Tire Inflator** • Putting Green Trainer • **iLive Cooler Pro Wireless Cooler** • Anker MagGo Power Bank • **Pura Home Plus Diffuser Set** • Hydro Flask Carryout • **Titleist Pro V1 Golf Balls** • Amazon Echo Spot • **Cuisinart Outdoor Tabletop Fire Pit** • Packing Cube Quartet • **JOOLA Ben Johns Pickleball Set** • Herschel Recycled Burrard Tech Organizer • **The Hangout™ Portable Hammock** • Ring Pan-Tilt Indoor Cam • **Beats Solo Buds** • iLive Waterproof Wireless Earbuds • **Grillfriend Portable Charcoal Grill** • Cuisinart Round Flip Belgian Waffle Maker • **Amazon Echo Dot** • ENO SingleNest Hammock • **Cuisinart Electric Knife Set** • Cuisinart Outdoor Grill Set • **ThermoPro Thermometer** • 32" Insignia TVs • **JBL Clip Ultra Waterproof Speaker** • BOSKA Cheese Fondue Set • **CORKCICLE® Pour Over Set**

Contest Prizes

Ninja Foodi 6-in-1 Indoor Grill & 4-Quart Air Fryer
Cuisinart Outdoors® Pizza Oven
Callaway Pro Laser Rangefinder
Beats Studio Pro Wireless Headphones
Amazon Kindle Colorsoft
Cuisinart Outdoors® Pizza Oven
55" Insignia TVs
Mophie 3-in-1 Travel Charger
Cuisinart Outdoor Chef-Style Stainless Tabletop Grill
Igloo Tag Along Spinner Cooler
Ninja CREAMi Ice Cream Maker
Solgaard Medium Carry-On

Special Notes:

1. **All prizes and Gift Cards to be delivered before Christmas – Gift cards and individual prizes will be shipped to arrive in the Service Centers prior to the end of November. Recipients will be required to acknowledge receipt for all prizes.**

2. **All sales information to come from SvcPro – All prizes and rewards will be based upon the information contained in SvcPro. All information will need to be entered by *1pm EST each day*. Managers should make the necessary arrangements to ensure that this is done as exceptions will not be able to be accommodated. THIS INCLUDES ANYONE USING SALESFORCE.COM or AUGGIE.**

3. **All service lead information to come from the lead log including resulting sales from admin created service leads– All prizes and rewards tying to service leads will be based upon the information contained in lead log. All information will need to be entered by *1pm EST each day*. Managers should make the necessary arrangements to ensure that this is done as exceptions will not be able to be accommodated. THIS INCLUDES ANYONE USING SALESFORCE.COM or AUGGIE.**

4. **Termite Renewal Inspectors, Svc Managers, and Technicians need to be in the Lead Log to track their service leads AND ensure that they are NOT marked as Inspectors in the "Manage People" section of the Lead Log - In order to track service leads for Termite Renewal Inspectors, Svc Managers, and Technicians, they will need to be added to and made "active" in the lead log. THEY ARE NOT TO BE MARKED "SALES INSPECTOR". It is imperative that these positions are added to and properly activated in the lead log in order to receive credit for the gift certificates and other appropriate rewards.**

5. **Self-collected renewal collections and reinstatement information to come from ServicePro.Net – In order for admin to receive credit, the "collected by" field will need to be filled in with the person who actually has collected the money. No distribution of gift certificates will occur until validation has taken place.**

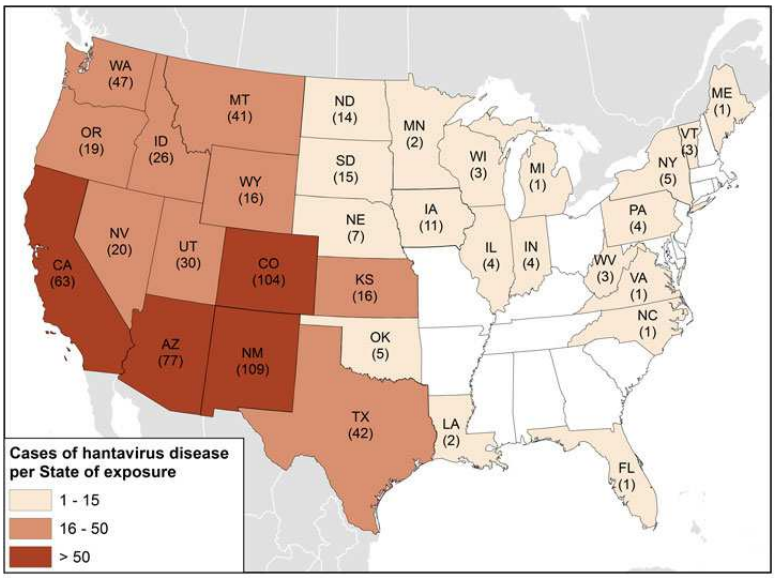
6. **Errors, Omissions, and the Like – Resolution to any and all issues arising out of errors, omissions, and the like are at the sole discretion of the VP-Business Development and/or the President/CEO. Attitude will weigh heavily in any accommodation, etc. ☺**

PART 1: HANTAVIRUS

Health threats from rodents in the S.E. can include parasites, diseases, direct damage such as rat bites, and structural damage including fires. Wild rodents also urinate wherever they travel and certain bacteria and diseases can exist in their urine and feces.

The two major rodent diseases of concern to PMPs are hantavirus and plague.

Hantavirus is a virus that is spread in the droppings, urine, and saliva of rodents. When droppings or urine are disturbed, microparticles become aerisolized and then humans can become infected when they breathe the particles. The main rodents that carry this virus are deer mice in the West, cotton and rice rats in the Southeast, and white-footed mice in the Northeast. Farm animals, dogs, cats, and humans cannot transmit the disease, nor can insects. It was determined that the virus was carried by deer mice since the late 1950's in the 4 corners region of the US (New Mexico, Arizona, Colorado, and Utah. The following map indicates the number of documented cases by the CDC during just 2017.



It has been less prevalent in the Eastern U.S. Hantavirus pulmonary syndrome (HPS), also known as Sin Nombre Virus, begins much like a flu, with muscle aches and fever, followed by shortness of breath and coughing. It then progresses rapidly requiring ventilation and hospitalization within just hours. Without hospitalization, the lungs fill up rapidly with liquid and the victim can die. PMPs working in enclosed areas should nevertheless consider CDC's warnings and advice:

How long can hantavirus remain infectious in the environment?

The length of time hantavirus can remain infectious in the environment is variable and depends on environmental conditions, such as temperature and humidity, whether the virus is indoors or outdoors or exposed to the sun, and even on the rodent's diet (which would affect the chemistry of its urine). Viability for 2 or 3 days has been shown at normal room temperature. Exposure to sunlight will decrease the time of viability, and freezing temperatures will actually increase the time that the virus remains viable. Since the survival of infectious virus is measured in terms of hours or days, only active infestations of infected rodents result in conditions that are likely to lead to human hantavirus infection.

How do I prevent HPS?

SEAL UP, TRAP UP, CLEAN UP

Seal up rodent entry holes or gaps with steel wool, lath metal, or caulk. Trap rats and mice by using an appropriate snap trap. Clean up rodent food sources and nesting sites and take precautions when cleaning rodent-infested areas.

What are the recommendations for cleaning a rodent-infested area?

- Put on rubber, latex, vinyl or nitrile gloves.
- Do not stir up dust by vacuuming, sweeping, or any other means.
- Thoroughly wet contaminated areas with a bleach solution or household disinfectant. **Hypochlorite (bleach) solution:** Mix 1 and ½ cups of household bleach in 1 gallon of water.
- Once everything is wet, take up contaminated materials with damp towel and then mop or sponge the area with bleach solution or household disinfectant.
- Spray dead rodents with disinfectant and then double-bag along with all cleaning materials. Bury, burn, or throw out rodent in appropriate waste disposal system. (Contact your local or state health department concerning other appropriate disposal methods.)
- Disinfect gloves with disinfectant or soap and water before taking them off.
- After taking off the clean gloves, thoroughly wash hands with soap and water (or use a waterless alcohol-based hand rub when soap is not available).

Can I use a vacuum with HEPA filter to clean up rodent-contaminated areas?

HEPA vacuums are **not recommended** since they blow air around and may create aerosols.

How do I clean papers, books, and delicate items?

Books, papers, and other items that cannot be cleaned with a liquid disinfectant or thrown away should be left outdoors in the sunlight for several hours or in an indoor area free of rodents for approximately 1 week before final cleaning. After that time, the virus should no longer be infectious. Wear rubber, latex, or vinyl gloves and wipe the items with a cloth moistened with disinfectant.

I do not want to bleach my clothes or stuffed animals; is there anything else I can do?
Wash clothing or stuffed animals in the washing machine using hot water and regular detergent. Laundry detergent can break down the virus's lipid envelope, rendering it harmless. Machine dry laundry on a high setting or hang it to air dry in the sun. CDC does not recommend simply running the clothing through the dryer without washing first.

How do I clean rugs, carpets and upholstered furniture?
Disinfect carpets and upholstered furniture with a disinfectant or with a commercial-grade steam cleaner or shampoo.

What precautions should I take if I think I have been exposed to hantavirus?
If you have been exposed to rodents or rodent infestations and have symptoms of fever, deep muscle aches, and severe shortness of breath, see your doctor immediately. Inform your doctor of possible rodent exposure so that he/she is alerted to the possibility of rodent-borne diseases, such as HPS.

PART 2: PLAGUE

Humans can acquire plague by being bitten by a rodent flea that is carrying the plague bacterium or by handling a plague-infected animal. Plague is referred to as the "Black Death" that resulted in the death of millions of people in Europe in the Middle Ages. Today, antibiotics are effective against plague but the disease can cause illness or death if not promptly treated. There are still thousands of cases per year worldwide. General symptoms include high fever, delirium, rapid or irregular pulse and severe headaches or nausea. West of the Rockies many wild rodents carry plague-infested fleas. There are still a few human cases of plague that occur in the US each year.

Fleas become infected by feeding on rodents, such as chipmunks, prairie dogs, ground squirrels, mice, and other mammals that are infected with the bacteria *Yersinia pestis*. Fleas transmit the plague bacteria to humans and other mammals during the feeding process. The plague bacteria are maintained in the blood systems of rodents.

Plague can also be spread when a person has plague pneumonia and coughs droplets containing the plague bacteria into air that is breathed by a non-infected person. This is called pneumonic plague.

The typical sign of the most common form of human plague is a swollen and very tender lymph gland, accompanied by pain. The swollen gland is called a "bubo" (hence the term "bubonic plague"). Bubonic plague should be suspected when a person develops a swollen gland, fever, chills, headache, and extreme exhaustion, and has a history of possible exposure to infected rodents, rabbits, or fleas.

A person usually becomes ill with bubonic plague 2 to 6 days after being infected. When bubonic plague is left untreated, plague bacteria invade the bloodstream. When plague bacteria multiply in the bloodstream, they spread rapidly throughout the body and cause a severe and often fatal condition. Infection of the lungs with the plague bacterium causes the pneumonic form of plague, a severe respiratory illness. The infected person may experience high fever, chills, cough, and breathing difficulty, and expel bloody sputum. If plague patients are not given specific antibiotic therapy, the disease can progress rapidly to death.

About 14% (1 in 7) of all plague cases in the United States are fatal.

According to treatment experts, a patient diagnosed with suspected plague should be hospitalized and medically isolated. Laboratory tests should be done, including blood cultures for plague bacteria and microscopic examination of lymph gland, blood, and sputum samples. Antibiotic treatment should begin as soon as possible after laboratory specimens are taken. Streptomycin is the antibiotic of choice. Gentamicin is used when streptomycin is not available. Tetracyclines and chloramphenicol are also effective. Persons who have been in close contact with a plague patient, particularly a patient with plague pneumonia, should be identified and evaluated. The U.S. Public Health Service requires that all cases of suspected plague be reported immediately to local and state health departments and that the diagnosis be confirmed by CDC. As required by the International Health Regulations, CDC reports all U.S. plague cases to the World Health Organization.

Plague can be acquired at anytime during the year.

PART 3: OTHER RODENT-BORNE ILLNESSES

LCMV

LCMV stands for lymphocytic choriomeningitis virus. In 2005 7 people died from this virus transmitted via blood transfusions. They did not die from direct contact with rodents. The tainted blood donor had a pet hamster infected with the virus. About 5% of mice, hamsters, and other rodents carry LCMV, and about 2% of the general public has antibodies to the virus. The virus usually causes little or no illness in healthy people but can be deadly in people with compromised immune systems such as organ transplant patients.

Symptoms of the virus include fever, malaise, anorexia, nausea, sore throat, vomiting, muscle aches, headaches, joint pain, and chest pain. After a short remission, it can progress again to fever, drowsiness, confusion, paralysis, and rarely death.

Exposure occurs when a person contacts urine or feces of house mice or infected rodent pets such as hamsters, gerbils and guinea pigs. Since pregnant women with LCMV can spread the disease to the fetus, they are advised to stay away from pet rodents. LCMV can be prevented by avoiding or minimizing exposure to rodents, their urine, or feces. Mice are the primary reservoir for the virus. Depending upon local population fluctuations, LCMV typically infects from 3% to 40% of any given mouse population. The higher percentage occurs in areas where LCMV is well-established. In these areas, chronically infected mice pass the virus on to their offspring. LCMV is an Arenavirus. Arenaviruses are rodent-borne enveloped RNA viruses and broken down into two groups, Old World and New World. LCMV is the only Old World arenavirus occurring in the Americas. There are a few New World viruses that occur in the Americas. These include: Junin, Machupo, Guanarito, and Sabia. Although these have mainly occurred in South America, there is a chance that they could possibly show up in the US sometime in the future.

LEPTOSPIROSIS

- **Description:** A bacterial disease that may be contracted through contact with water or ingestion of food contaminated with the urine of infected rats and mice. Also known as Weil's disease, Canicola Fever, Hemorrhagic Jaundice, Mud Fever, Swinehard's Disease.
- **Cause:** Disease caused by a bacterial spirochete, *Leptospira icterohaemorhagiae*.
- **Incubation:** period 4 to 19 days.
- **Symptoms:** Fever, headache, chills, severe malaise, vomiting. Occasionally meningitis, rash, jaundice, anemia. Clinical illness can last up to three weeks.
- **Diagnosis:** By physician although laboratory tests difficult and not always conclusive.
- **Treatment:** With antibiotics.
- **Mode of Transmission:** Ingestion of contaminated food or water with the urine of rats and mice. Also contact with water, soil and vegetation contaminated with the urine of infected animals.

MURINE TYPHUS

- **Description:** A bacterial disease caused by the bites of infected fleas. Also known as Flea-borne typhus, Endemic typhus fever, Shop typhus.
- **Cause:** Caused by the bacterium *Rickettsia typhi*.
- **Incubation:** period 1 to 2 weeks.
- **Symptoms:** Headache, chills, fever, general pain; spots/rash appear on the fifth or sixth day on upper body and ultimately spread to all of body except face, palms of hands and soles of feet.
- **Diagnosis:** By physician with lab tests.
- **Treatment:** Antibiotics and supportive care.
- **Mode of Transmission:** By fleas associated with rats. Rats are the reservoir for the bacterium. Fleas bite both rats and humans. Infection in rats is not apparent.

RAT BITE FEVER

- **Description:** A bacterial disease that can be contracted from the bite of a rat or mouse. Rat Bite Fever is also known as Streptobacillary Fever or Spirillary Fever.
- **Cause:** Streptobacillary fever is caused by the bacterium *Streptobacillus moniliformis*. Spirillary Fever caused by the bacterium *Spirillum minor*.
- **Incubation:** period 1 to 3 weeks for Spirillary Fever; 3 to 10 days, rarely longer, for Streptobacillary Fever, following a history of a rat or mouse bite, which has normally healed.
- **Symptoms:** Abrupt onset of fever, chills, headache and muscle pain. Later followed by a rash which is most pronounced on the extremities. One or more large joints then become red, swollen and painful.
- **Diagnosis:** By physician and lab cultures using blood, lymph or joint fluid samples.
- **Treatment:** Antibiotics, without treatment fatality rate is 7 - 10%.
- **Mode of Transmission:** Usually following a bite from an infected rat or mouse.

SALMONELLOSIS

- **Description:** A bacterial food poisoning that may be transmitted when rodents contaminate food by contact with their own feces or urine.
- **Cause:** Disease caused by a *Salmonella spp.* bacteria, especially *Salmonella typhimurium*.
- **Incubation:** period 6 to 72 hours.
- **Symptoms:** Sudden onset of headache, acute abdominal pain, diarrhea, nausea, sometimes vomiting, fever. Potential for dehydration especially in children.
- **Susceptibility:** Children are the most susceptible to the virus.
- **Diagnosis:** By physician.
- **Treatment:** With antibiotics.
- **Mode of Transmission:** By consumption of contaminated food or water or poorly cooked foods. Domestic pets and wild rodents (rats/mice) can also be carriers of this disease. Wild rodents transmit this disease by contaminating food and drink with their feces and urine.

HEPATITIS E

A 1999 study suggests that wild rats may be carriers of this virus, which would explain how people may become exposed to the hepatitis E virus (HEV) and why those in urban areas are more likely to test positive for hepatitis E when donating blood. There is no evidence that the HEV carried by the rats is dangerous to human health, however.

Overall, 90% of rats from Hawaii, 77% from Maryland, and 44% from Louisiana had signs of HEV exposure, according to a report in the American Journal of Tropical Medicine and Hygiene. In the

study, Dr. Yamina Kabrane-Lazizi, of the National Institute of Allergy and Infectious Diseases (NIAID), and colleagues tested 239 wild rats for antibodies to the virus.

HEV infects the liver, and it is believed that it is spread by fecal contamination of drinking water. The viral infection can be particularly dangerous in pregnancy, and is a problem in developing countries, where it is the first or second most important cause of hepatitis in Asia, the Middle East and North Africa. Those cases that do occur in developed nations, such as the United States, occur almost exclusively in people who have traveled to other parts of the world.

It is not clear why up to 5% of people in the US have antibodies to the virus, but have remained healthy, according to senior investigator Dr. Robert Purcell, chief of the hepatitis viruses section at NIAID.

“Since hepatitis E is so rare in this country, it's puzzling that so many people have antibodies to the virus in their blood,” said Purcell in a statement issued by NIAID. “It may be that the high prevalence of HEV antibodies in the absence of disease is due to infection with a strain of HEV that doesn't cause disease. Another possibility is that animals serve as reservoirs of HEV and pass a weakened form of the virus on to humans.” There is no evidence that rat HEV poses a threat to human health.

MONKEY POX

Although not established in America, Monkey Pox has made its way over from Africa. In 2003, US health officials investigated the first outbreak in the Western hemisphere of the “monkeypox” virus, a smallpox-like disease spread by rodents and monkeys that rarely is fatal in humans and may have infected at least 28 people in three Midwest states.

Federal and state health officials were trying to find out why 17 people in Wisconsin, ten in Indiana and one in Illinois became sick with symptoms such as fever and rashes following contact with sick Gambian rats and prairie dogs. No one in the United States has died from the illness.

Prairie dogs are wild rodents that dig and live in holes on the western US plains, and are sometimes kept as pets or traded by North America animal dealers.

The Atlanta-based Centers for Disease Control said that laboratory tests confirmed the US outbreak of monkey pox, a rare viral disease that is found mainly in central and West African rain forests where primates flourish. Animals susceptible to the disease also include rabbits and some rodents.

Monkey pox had been virtually unknown outside of Africa and had never before been found in the Western hemisphere.

The symptoms in people are similar to smallpox although monkey pox is less infectious and is seldom fatal, the CDC said. Doctors should look for rashes, fever, enlarged lymph nodes and other symptoms in people who have been in contact with prairie dogs or Gambian giant rats.

A pet dealership called Phil's Pocket Pets in a suburb of Chicago was quarantined after the person in Illinois suspected of having the disease reported close contact with exotic animals at the facility, the Illinois agency said.

Health officials were investigating if the virus may have been spread when prairie dogs and an ill Gambian giant rat were obtained from the Illinois dealership by a Milwaukee, Wisconsin animal distributor.

RABIES

Rabies is extremely rare in rodents. It most often is spread among raccoons, skunks, foxes, otters, groundhogs, woodchucks, and insectivorous bats, not rats, mice, or squirrels.

CONCLUSION

There are many more exotic rodent-borne diseases that could potentially travel to our country. It's just a matter of time. The above health threats have the highest chance of occurring in our area. Although quite low in probability, the chance does exist for any of these threats to surface. It is important to be aware of these threats and to protect ourselves whenever we work near rodent activity to prevent contacting any of these diseases.

Name:_____ Date:_____

Pre & Post Tests

1) The 2 most serious rodent-borne disease threats in America are presently:

a) Ebola and Sin Nombre

b) Salmanellosis and Rabies

c) Hantavirus and Plague

d) Plague and Hepatitis E

2) Monkey Pox showed up in America as recently as:

a) 2001

b) 2002

c) 2003

d) 2004

3) LCMV

a) will often cause death in healthy people

b) is extremely virulent in immune-suppressed individuals

c) is carried in 3-40% of the rat population

d) all of the above

4) Rat Bite Fever

a) is a form of salmanellosis

b) causes extreme fever and death in a couple of days

c) causes nausea and bleeding ulcers

d) can follow a bite of a rat and is easily treated with antiobiotics

5) Murine Typhus

a) is a viral disease

b) is a bacterial disease

c) has an incubation period of from 2-6 days

d) is usually transmitted by ticks

6) Hantavirus is most often spread by

a) Cotton rats and Rice Rats in the SE

b) White-footed mice in the 4 Corners region of the US

c) Rat bites in the Northeast

d) Rat feces US-wide

7) Hantavirus Pulmonary Syndrome is also known as

a) HP

b) Sin Nombre Virus

c) Junin or Sabia Virus

d) None of the above

8) To date there have been _____ cases of Hantavirus documented in the US since inception

a) Between 200-300

b) Between 300-400

c) Between 400-500

d) Between 500-600

9) Symptoms of HPS include

a) immediate rash

b) itchy eyes

c) nausea

d) lungs fill rapidly with fluid

10) After rodents are killed, Hantavirus can remain in the environment for

a) at least a few days at room temperature

b) only an hour or so

c) up to a day

d) only exists around live rodent activity

11) How should rugs be cleaned of Hantavirus?

a) Vacuumed with HEPA filter attachment

b) A normal vacuum wil do

c) Use a disinfectant and steam clean

d) Any of the above

12) Plague

a) also known as Sin Nombre caused thousands of deaths in the 16th Century in Europe

b) is spread by rodents via fleas

c) is spread via rat droppings

d) is easily treated with antibiotics, even if diagnosed after 2 weeks

13) _____% of all plague cases in the US are fatal.

a) 3

b) 7

c) 9

d) 14

14) Prevent Hantavirus by

a) put on gloves, vacuum droppings w/HEPA filter

b) put on gloves, disinfect area with solution of 1.5 oz bleach per gallon of water

c) keep on gloves, absorb solution with towel and finally mop with clean water

d) all of the above

15) LCMV

a) is a virus causing fever, nausea and chest pain, progressing to paralysis

b) is a virus that causes internal bleeding

c) is commonly spread via blood transfusions

d) recently caused the death of a child playing with a hamster

ANSWERS

1) c

2) c

3) b

4) d

5) b

6) a

7) b

8) b

9) d

10) a

11) c

12) b

13) d

14) b

15) a

WEEKLY TRAINING SESSION

November Application Procedures

Topic Category: Lawn
Recordable Verifiable Training Hours: 1.5

Objectives: This lesson is designed to teach our Application Procedures for November.

Length of lesson: Approx 1 Hour and 30 minutes.

Materials needed:

- Training Guideline
- November Applications Training Document and What We Apply – What We Expect document located in the G: Drive\Shared\GreenUp Reference Materials\GreenUp Protocols\Monthly Applications Information\2026\November
- **6 pounds** of 12-0-14 Shrub Fertilizer (16 ounces in a measuring cup is close to one pound)
- 1000 sq. ft. area of shrub bed
- Pre- and Post-tests.

Training Guidelines:

- Make copies of the tests and training materials for all Team Members attending.
- Set up the training area in an area of the office that will minimize disruptions.
- Hand out the Verifiable Training Record Form (VTRF)
- Begin the meeting by defining the training topic and handing out the Pre-test
- Distribute and review the training materials on November Application Procedures
    - Allow the Team Members to complete the Pre-test as the application information is discussed.
- Use the Training outline as a guide for key points.
    - Encourage active participation from all Team Members
    - Ask probing questions to discuss key points.
    - Read and answer questions from the test and have the Specialists write in their answers.
    - Encourage group reading.
- After reading and reviewing all materials, ask questions to verify the lesson has been understood.
    - Collect the pre-test and discard.
- Hand out the Post-tests. When complete, have each Specialist pass their test to another Specialist for grading.
- Grade the tests as a group and discuss the answers.
- Collect the tests
- Take all Specialists to the pre-measured shrub bed area. Apply the **6** pounds of 12-0-14 to the shrub bed area so they get an idea of how much fertilizer is being applied to all new shrub care services.
- End the training session.
- Record the post test scores on the VTRF for each Team Member.
- Place with the verifiable materials in the Service Center Verifiable Training File.
- Make copies of the VTRF and place in each Team Member's training file.
- Complete all Weekly VTM's through Massey University
-

WEEKLY TRAINING SESSION

November Application Procedures

Name _____ Date _____

PRE & POST TEST

1. T or F The fertilizer applied to all St. Augustine grass customers (Except Hernando County) contains Atrazine.

2. T or F 0-0-1 is used as a liquid broadcast application for all new St. Augustinegrass customers.

3. T or F SBM1 is used to control broadleaf weeds in St. Augustinegrass (in all Service Centers except South Service Centers) at 2 ounces of per 1000 sq. ft.

4. The fertilizer applied to Zoysia starts is
   a. 20-0-6 + **Sulfur** Straight at 4 pounds per 1000 sq. ft.
   b. 20-0-6 + **Sulfur** with Pendimethalin at 5 pounds per 1000 sq. ft.
   c. 0-0-3 Pendimethalin at 5 pounds per 1000 sq. ft.
   d. All of the above are true depending on the geographic area and nitrogen ordinances.

5. T or F SBM2 can be mixed with Sedge Hammer.

6. T or F When nitrogen blackout ordinances are not in effect, 8-0-12 is applied to the shrub bed containing small palms and sagos when performing a shrub fertilization service.

7. Annual aerations are fertilized with.
   a. 0-0-20 at 4 pounds per 1000 sq. ft.
   b. Granular Sulfur at 4 pounds per 1000 sq. ft.
   c. Either 0-0-3 or Granular Sulfur (depending on the soil pH) at 5 or 4 pounds respectively per 1000 sq. ft.
   d. None of the above.

8. Grassy weeds in Bermuda and Zoysia grass are treated with.
   a. Celsius and Dismiss
   b. Change Up
   c. SBM1 plus Auguzine

9. T or F Every shrub on the property should be sprayed with the I&D Slurry.

10. T or F Following the initial lawn care treatment, a *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular monthly lawn care protocol for the month in which the regular service is performed.

WEEKLY TRAINING SESSION

November Application Procedures

PRE & POST TEST ANSWER KEY

1. T or F The fertilizer applied to all St. Augustine grass customers (Except Hernando County) contains Atrazine.

2. T or F 0-0-1 is used as a liquid broadcast application for all new St. Augustinegrass customers.

3. T or F SBM1 is used to control broadleaf weeds in St. Augustinegrass (in all Service Centers except South Service Centers) at 2 ounces of per 1000 sq. ft.

4. The fertilizer applied to Zoysia starts is
   a. 20-0-6 + **Sulfur** Straight at 4 pounds per 1000 sq. ft.
   b. 20-0-6 +Sulfur with Pendimethalin at 5 pounds per 1000 sq. ft.
   c. 0-0-3 Pendimethalin at 5 pounds per 1000 sq. ft.
   d. All of the above are true depending on the geographic area and nitrogen ordinances.

5. T or F SBM2 can be mixed with Sedge Hammer.

6. T or F When nitrogen blackout ordinances are not in effect, 8-0-12 is applied to the shrub bed containing small palms and sagos when performing a shrub fertilization service.

7. Annual aerations are fertilized with.
   a. 0-0-20 at 4 pounds per 1000 sq. ft.
   b. Granular Sulfur at 4 pounds per 1000 sq. ft.
   c. Either 0-0-3 or Granular Sulfur (depending on the soil pH) at 5 or 4 pounds respectively per 1000 sq. ft.
   d. None of the above.

8. Grassy weeds in Bermuda and Zoysia grass are treated with.
   a. Celsius and Dismiss
   b. Change Up
   c. SBM1 plus Auguzine

9. T or F Every shrub on the property should be sprayed with the I&D Slurry.

10. T or F Following the initial lawn care treatment, a *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular monthly lawn care protocol for the month in which the regular service is performed.

GREENUP LAWN, TREE & SHRUB CARE SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

Geographical Areas Defined: "South" - Sarasota to Vero and South of this line. "Central" - Clearwater, Tampa, Odessa, Leesburg, Volusia and South of this Line to Sarasota and Vero - "North" - Brooksville, Ocala, to Palm Coast and North of this Line - "Tallahassee and Baton Rouge" – Tallahassee and Baton Rouge.

Lawn Care Accounts

1. St. Augustine
   a. New Customers (All Service Centers except Orange, Alachua, and Hernando Counties)
      Apply **4** pounds of 20-0-6 + **1.15% Atrazine** per 1000 sq. ft.; typically, this will be setting 15 with the Lesco Calibration tool.

   b. New Customers (Orange and Hernando Counties)
      Apply **5** pounds of 20-0-6 + **0.92% Atrazine** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

   c. New and Regular Customers (Alachua County)
      Apply **5** pounds of 0-0-3 **Pendimethalin** per 1000 sq. ft.

   d. Regular Customers (All Service Centers except Alachua County)
      Apply **5** pounds of 20-0-6 **Pendimethalin** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

All broadleaf weeds in St. Augustine lawns (Except South FL) must be spot treated with the SBM**1** Slurry at **2** ounces of pre-mixed material plus **3** ounces of Auguzine per gallon of water per 1000 sq. ft., using the backpack sprayer and the 11010-spray tip. These materials should be mixed in the following manner: Add half of the measured water into the backpack sprayer. Measure the SBM**1** add it to the water and agitate. Measure the Auguzine, add it to the water and agitate. Add the other half of the measured water and agitate. Do not allow concentrate SBM**1** to touch the concentrate Auguzine or the two materials will coagulate.
South FL Service Centers (Sarasota to Vero Beach and south) continue to use SBM**2** Slurry at **2** ounces plus **3** ounces of Auguzine, per gallon of water per 1000 sq. ft.

If chinch bugs are found at the time of service, spot treat the affected area and at least a 5-foot border around the area with **1** ounce of Bifenthrin, **0.32** ounces of PBO-8, and **0.33** ounces of Wetting Agent per 1000 sq. ft. from a backpack sprayer using the 8020E spray tip.

2. Zoysia
   a. New Customers (Central and South Service Centers)
      Apply **4** pounds of 20-0-6 **+ Sulfur** Straight per 1000 sq. ft.; typically, this will be setting 15 with the Lesco Calibration tool.

   b. New and Regular Customers (Alachua County, Northern Service Centers, Tallahassee, and Baton Rouge)
      Apply **5** pounds of 0-0-3 **Pendimethalin** per 1000 sq. ft.

GREENUP LAWN, TREE & SHRUB CARE
SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

c. New Customers (Orange and Hernando Service Centers) Regular Customers (All Service Center except Orange and Alachua Counties, Northern Service Centers, Tallahassee, and Baton Rouge)
Apply **5** pounds of 20-0-6 **+ Sulfur with Pendimethalin** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

d. Regular Customers (Orange County Service Centers)
Apply **4** pounds of 20-0-6 **+ Sulfur with Pendimethalin** per 1000 sq. ft.; typically, this will be setting 15 with the Lesco Calibration tool.

3. Bermuda

a. New Customers (All Service Center except Alachua County, Northern Service Centers, Tallahassee, and Baton Rouge)
Apply 5 pounds of 20-0-6 **+ Sulfur with Pendimethalin** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

b. New and Regular Customers (Alachua County, Northern Service Centers, Tallahassee, and Baton Rouge)
Apply 5 pounds of 0-0-3 **Pendimethalin** per 1000 sq. ft.

c. Regular Customers (Hernando County),
Apply 5 pounds of 20-0-6 **+ Sulfur with Pendimethalin** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

d. Regular Customers (All Service Centers except Hernando and Alachua Counties)
Apply 4 pounds of 20-0-6 **+ Sulfur with Pendimethalin** per 1000 sq. ft.; typically, this will be setting 15 with the Lesco Calibration tool.

Broadleaf weeds in **Zoysia and Bermuda (except Central and Southern Service Centers) are spot treated with 0.75 ounces of ChangeUp Herbicide** per gallon of water, using the backpack sprayer and the 11010-spray tip. Do not use on St. Augustine grass or damage will occur. Use a separate backpack dedicated for this use.

All weed types in **Zoysia and Bermuda in Central and South Service Centers are spot treated with 0.11 ounces of Celsius with 0.28 ounces of Dismiss South** per gallon of water, using the backpack sprayer and the 11010-spray tip. Do not use on any other grass type or damage will occur. Use a separate backpack dedicated for this use.

4. Centipede

a. New Customers (All Service Centers)
Apply **5** pounds of 0-0-3 **Atrazine** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

b. Regular Customers (All Service Centers)
Apply **5** pounds of 0-0-3 **Pendimethalin** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

Broadleaf weeds in **Centipede are spot treated with 0.75 ounces of Change Up Herbicide** per gallon of water, using the backpack sprayer and the 11010-spray tip. Do not use on St. Augustine grass or damage will occur. Use a separate backpack dedicated for this use.

5. Bahia

a. New Customers (Alachua County)
Apply **5** pounds of 0-0-3 **Straight** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

b. New and Regular Customers (All Service Centers except Alachua County) Regular Customers (Alachua County)
Apply **5** pounds of 0-0-3 **Pendimethalin** per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool.

Broadleaf weeds in **Bahia are spot treated with 0.9 ounces of ChangeUp Herbicide** per gallon of water, using the backpack sprayer and the 11010-spray tip. Do not use on St. Augustine grass or damage will occur. Use a separate backpack dedicated for this use.

6. Annual and New Aeration

Apply 0-0-3 at **5** pounds per 1000 sq. ft. or Granular Sulfur (depending on the soil pH) at **4** pounds per 1000 sq. ft.; typically, this will be setting 16 or 15 respectively with the Lesco Calibration tool. See the Aeration Service Protocol for complete details.

All new lawn care customers receive the above application protocols for New Customer Services. A *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular monthly lawn care protocol for the month in which the regular service is performed.

Keep any Atrazine fertilizer away from the shrub beds. Use great care! Make sure to use your sidewalk guard properly around shrub beds. Do not use Atrazine fertilizers on Zoysia, Bermuda, or Bahia.

Make sure to use your sidewalk guard properly around roadways, driveways, sidewalks, and bodies of water. Maintain a 3-to-25-foot ring, depending on your county's ordinance, of responsibility near all waterbodies. Remember blowing off **the roadways, sidewalks, porches, pavers, decks, and driveways** are required after all granular fertilizer applications. Blow the material back into the turf areas. Do not allow any fertilizer to go into a storm sewer. Blow off any landscape curbing as well to avoid staining.

GREENUP LAWN, TREE & SHRUB CARE SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

Inspect all lawns very carefully for chinch bug activity. Good inspections, proper treatment and proper proactive treatments must be done. If chinch bugs are found, spot treat the affected area and at least a 5-foot border around the area with the Bifenthrin/PBO-8/wetting agent from a backpack sprayer using the 8020E spray tip. 2 gallons should cover 1000 sq. ft. Perform proactive inspections for any chinch bug problem 14 to 21 days after treatment to ensure they are dead. If there is no further activity, do not do any additional treatment.

Sedge must be treated in St. Augustine (South Service Centers), Bahia, Bermuda, Zoysia, Centipede, and Seashore Paspalum with **Sedge Hammer slurry at 2 oz** per gallon of water using the backpack sprayer and the 11010-spray tip. Treat all sedges. A proactive treatment may be needed in 30 days to ensure control. **DO NOT ADD SEDGE HAMMER TO THE SBM2. THIS WILL KILL THE TURF.** Sedge treatments work best when the turf has not been mowed for a few days before treatment and will not be mowed for a couple of days after treatment. In situations where a large amount of kyllinga is present, the customer must be informed that this area will turn brown. If the area is so large and full of sedge that sodding or plugging will be needed after control has been achieved, do not treat the sedge without first communicating with the customer and getting their approval in writing. Sedge treatment must remain dry for at least 3 hours to be successful.

Active Large Patch (Brown Patch) fungus in any grass type is treated with Pillar SC at **1** ounce per 1000 sq. ft. Better control will be achieved when applied at 5 gallons of water per 1000 sq. ft. or when watered in lightly when using a backpack sprayer. Using the drop tank for treatments with Pillar SC is very beneficial as it helps to flush out any sludge build up that can accumulate if product is left in the tank unused for extended periods of time. A proactive treatment will need to be done 30 days later using Pillar SC at **1** ounce per 1000 sq. ft.

Shrub Service

A. New Customers (All Service Centers except Alachua County) and Regular Services (All Service Centers except Alachua County)
Apply 12-0-14 at **6** pounds per 1000 sq. ft. 8-0-12 is used for palms, sagos, and shrubs where palms are present at **8** pounds per 1000 sq. ft. Keep this material off concrete surfaces.

B. New Customers (Alachua County)
Apply 0-0-3 at **6** pounds per 1000 sq. ft. Keep this material off concrete surfaces.

C. New and Regular Customers (All Service Centers)
Treat shrubs that are prone to insect or disease problems.

- Apply **16** ounces of Horticultural Oil and **1.8** ounces in a 10-ounce fluid ounce measuring tube **(1.6 ounces by weight)** of Kalmor per 10 gallons of water.

GREENUP LAWN, TREE & SHRUB CARE SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

Certain shrubs (see the list below) are treated for insects and disease on a preventative basis. Most shrubs are treated on an as needed basis only. **Do not** treat every shrub on the property. This is not necessary or beneficial. Shrubs that are treated on a preventative basis with **every** initial and regular service include:

- **Loropetalum (through the winter months as they have an affinity for copper)**
- **Viburnum (especially the Awabuki and Suspensum, through the winter months to prevent spring Downey Mildew)**
- Azalea
- Camellia
- Gardenia
- Sago
- Pittosporum
- Indian Hawthorne
- Holly
- Knock-Out Roses
- Ficus (South FL)
- **Duranta (through the winter months to prevent leaf spot)**

The list above may be expanded depending on the geographical location and specific concerns in the Service Center.
**For the protection of pollinating insects, do not spray the foliage of shrubs that are in full bloom or if pollinators are in the area.

Set proactive treatments that are necessary to control insect or disease problems that threaten the life of the plant. Make sure to treat the top and bottom sides of the leaf. Inspect all shrubs thoroughly!!

Do not allow pesticides of any kind to contact bodies of water or fishponds. Many of the materials we use can be deadly to fish.

Specimen Palm Quarterly Injection Service

Nutritional treatment is performed in September, October or November using Palm-jet. Mix one part Palm-jet to 3 parts water and inject at label rates. If insect or disease is a concern for a new customer, either Phospho-jet, Ace-jet or Ima-jet may also be performed at the time of initial service. See GreenUP Protocol – Specimen Palm Quarterly Injection Service for complete details.

Do a quality job on every application. Thorough inspections and perfect preventive applications (especially for CHINCH BUGS!), always being mindful of the 5 key principles and great communication with the customer to provide long-term sustainable solutions as well as perfect measuring, perfect calibration and perfect walking speed is what is needed to keep our customers happy to prevent service calls, cancellations, and claims.

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – November 2026 Landscape Applications

Watering instructions for all new and regular LAWN CARE services are: Please irrigate with ¼ inch of water if there is no rain within 24 hrs."

New and Regular Lawn Care Services – All Grass Types			
What We Use	**Benefit of the Service**	**What To Expect**	**What to Tell the Customer**
Dry fertilizer application (Except in Tallahassee, Baton Rouge and Alachua County)	This application will provide a substantial amount of nitrogen, potassium and minor elements. 65% of the nitrogen will be released slowly while the other 35% can be used right away. The pre-emergent will prevent weeds from sprouting.	The color and growth of the lawn should improve in about 10 to 14 days.	"This fertilizer application will provide an improvement in the growth and color of the lawn. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Granular Potassium/Magnesium Source (all grass types in Tallahassee, Baton Rouge, and Alachua County)	A Potassium and Magnesium source is applied to most grass types in Tallahassee and Baton Rouge to help prepare the turf for cold weather. The pre-emergent will prevent weeds from sprouting.	This application will help create a hardier grass in preparation for the cooler weather ahead and will not stimulate tender new leaf growth.	"This application will help create a hardier grass in preparation for the cooler weather ahead and will not stimulate tender new leaf growth."
Spot treatment of insecticide for chinch bugs (St. Augustine Only).	Chinch bugs are a very common and damaging pest of St. Augustinegrass. This treatment is performed to control existing infestations.	If chinch bugs are already at damaging levels, expect the damage in the lawn to get a little worse before it gets better. Control is achieved slowly and may take up to 14 days.	"The insect control application is for the control of chinch bugs. Chinch bug feeding will cease immediately, but it could take up to a week or two for the chinch bugs to die. The damage may look like it is getting a little worse for a week or so, but that response is normal due to the feeding and damage that has already been done."
Pre and Post-Emergent Weed Control (St. Augustine and Centipede Only)	St. Augustine turf is treated for the prevention and control of annual weeds.	This application will help prevent and control annual and perennial broadleaf weeds.	"This application will help prevent and control annual and perennial broadleaf weeds."
Post-emergent weed control applied as a spot treatment using the backpack applicator for low volume application.	We achieve excellent control of practically all types of broadleaf weeds. Sedge can also be treated if it is competing with the turf or if it is a concern for the customer.	The weed control materials are a combination of slow and quick acting materials. Noticeable results will take about 5 to 7 days. Control is achieved within 3 to 4 weeks.	"The weed control materials applied will greatly reduce the amount of weeds in your lawn within 3 to 4 weeks. A second application may be necessary in severe cases."

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – November 2026 Landscape Applications

All Service Centers except Tallahassee, Baton Rouge and Alachua County
Lawn Specialist script for informing a new or regular customer of what we are going to do (or what we did) for their regular lawn care treatment in November: "I will be performing a granular application of fertilizer *with pre and post emergent weed control materials to improve the color and growth of your lawn *and to prevent broadleaf weeds from becoming a problem. I will also be inspecting and treating any existing lawn damaging insects, broadleaf weeds and diseases as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."
*St. Augustine or Centipede grass only

Tallahassee, Baton Rouge and Alachua County
Lawn Specialist script for informing a new or regular customer of what we are going to do (or what we did) for their regular lawn care treatment in November: "I will be performing a granular application of potassium and magnesium *with pre and post emergent weed control materials to improve the cold hardiness and root development of your lawn *and to prevent broadleaf weeds from becoming a problem. I will also be inspecting and treating any existing lawn damaging insects, broadleaf weeds and diseases as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."
*St. Augustine or Centipede grass only

Annual and New Aeration Services

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Core aeration	Aeration is the most beneficial service we perform. It stimulates root growth, helps break down thatch, and allows water and air to get to the root system.	Increased root growth, better soil structure, and an improvement in the overall health of the plant. Leaf tissue will look better in the long run but there will not be a visible change in the short term.	"The aeration will help create healthy plant roots and improve the vigor and heartiness of the lawn."
Depending on the soil pH at the customer's home, a broadcast application of potassium, organic material, and micronutrients or sulfur to lower soil pH according to our Annual Aeration Protocol.	The potassium and organic material application will aid in development of a hearty root system to enhance drought and stress tolerance. Proper soil pH is essential for the availability of soil nutrients. The application of granular sulfur will lower the soil pH when it is too high for the particular turf type.	Improved root growth as well as enhanced cold, drought and stress tolerance. If the soil pH is higher than what required for a particular turf type, the application of sulfur will lower the soil pH and allow bound nutrients to become available to the turf resulting in healthier turf with a darker green color.	"The application works very well in conjunction with aeration to enhance root growth and improve heat, drought, and stress tolerance. Please irrigate with ¼ inch of water if there is no rain within 24 hrs." "The application of granular sulfur will lower the soil pH to enhance the availability of soil nutrients. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – November 2026 Landscape Applications

Shrub Care Customers

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Broadcast application of dry fertilizer (New Customers in all Service Centers and Regular Customers in Service Centers with Nitrogen Blackout ordinances)	This application will provide the proper amount of nitrogen, potassium and minor elements to help achieve good color and growth.	The growth and color of the shrubs should improve in 10 to 14 days.	"The fertilizer application will help improve the color and growth of your shrubs. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Foliage application (as needed) of liquid insect and disease control materials. (New and Regular Customers)	The insect and disease control materials provide both contact and system control of shrub damaging insects and diseases.	Shrubs that either have or are prone to have insect and disease problems are treated. The application will provide control of soft bodied insects such as aphids and lace bugs within 2 to 4 days. Scale insects will require 2 to 3 weeks for control. Fungal leaf spots will be suppressed. Keep in mind that leaves that have been damaged by insects or disease do not turn green after control has been achieved. Damaged leaves will need to be trimmed off to achieve visual benefits.	"This application will provide control of existing insects and foliar diseases. Leaves previously damaged will need to be trimmed off to simulate new growth to cover up the damage. Follow-up treatments may be required for certain insect and disease problems."

Primary Landscape Issues in November

Zoysia and Bermuda turf may begin to go into dormancy this month in the northern parts of our state and will become uniformly brown. This is normal and is not a cause for concern. Going into a dormant state helps protect these turfs from cold damage.

Chinch bug activity and damage can still be found in untreated properties. However, in properties where chinch bugs have been controlled up to this point. It is unlikely that a new infestation will occur during the fall and winter. Since we are not treating our regularly serviced lawns on a preventative basis this month, good inspections to identify low level chinch bug infestations are essential to preventing turf damage.

Mole crickets, which hatched in June, July, and August, are large and very destructive in November. Look for mole crickets carefully, in all turf types. Feel for spongy soil by walking on the back of your heels. Then get down on your knees and feel for the tunnels with your fingers. Activity will resemble drought related injury, be sure to check soil moisture levels.

The Lawn Specialists and Sales Inspectors will need to inform customers of large areas of grassy weeds that need to be spot killed. Good communication on this issue is very important. This is especially important for new customers. ***Do not use Glufosinate (Finale) unless you are sure of which areas to treat, and that the customer knows resodding will be necessary. The areas needing to be sodded must be documented on an Inspection Graph and the customer must sign to indicate they know we are going to kill the area. If Bermuda grass is in a dormant or semi-dormant state, this is not a good time to attempt control. Weeds that are in a dormant state will not absorb herbicide.***

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – November 2026 Landscape Applications

If your Region has changed to Change Up as our primary weed control in Zoysia and Bermuda this month. Remember that **Change Up does not kill grassy weeds**, if there is a grassy weed problem refer to the previous month's protocols. Grassy weeds typically are dormant and should not be a problem at this time of year, but some winters are warmer than others, do not let grassy weeds get out of control should this be the case. Drive XLR8 with Methylated Seed Oil can give good control of Grassy weeds in Zoysia and Bermuda Grass as a rotation material. Segment is our only option in Centipede Grass.

In the very southern markets, SCMV/LVN should no longer be active. Though the dead damaged areas will be evident, the infected turf may even appear to recover in minor cases. The virus can still be caried from one plant to another through mechanical means. This results in a much larger outbreak next season. Properties having been identified with SCMV/LVN will still require renovation with a turf type incapable of contracting the virus.

Tuttle Mealy Bug activity should be minimal and on the decline in our southern zoysia grass markets at this time of year. Be on the lookout for areas that resemble drought damage/stress. Purpling and reddening leaf tissue is an indicator, as well as the white cottony material withing the leaf sheaths, along with sooty mold. Proper treatment is critical for control. Be mindful that the leaves do not green back up once discolored but will be removed with proper mowing and replaced with healthy new growth once we control the pest.

Large patch fungus will be the primary lawn problem this month. Large patch fungus appears as circular patches of damaged turf with yellow, orange, or purple grass blades on the outside border of the patch. The base of the blade will be rotten and will slide out easily when pulled. Re-growth in the center of the circular patch may give the damaged area a "doughnut" like appearance. Do not apply additional fertility in an attempt speed up the regrowth process. We still apply our regular service application to the entire property regardless of disease activity. The products we use are slow release, and as we are treating any activity found during our regular service, we will not cause a flare up of the disease. Avoiding the areas of disease activity can cause significant harm, as we are not applying our weed prevention and are starving the turf for needed nutrients.

Piercing- sucking insects on shrubbery continues to be a problem in November. Look for sooty mold to be an indicator. The black mold which feeds on honeydew from the insects can be seen from a distance, informing the observant salesman and Lawn Specialist to inspect closer for aphids, scales, or mealy bugs.

Fall is a wonderful time of year for lawn care. Turf and shrubbery thrive without the stress of summer's heat. Leaf growth is reduced slightly, and root growth is enhanced. **This is a great time to propose and sell sod in our central and southern markets.** Opportunity is everywhere. Our customers and potential customers need our help and expertise. Take advantage of the opportunity. Help people, have fun, and sell like crazy. This is a win-win for everyone.

So…SELL, SELL, SELL and SERVICE, SERVICE, SERVICE!

WEEKLY TRAINING SESSION

November Application Procedures

Topic Category: Lawn
Recordable Verifiable Training Hours: 1.5

Objectives: This lesson is designed to teach our Application Procedures for November.

Length of lesson: Approx 1 Hour and 30 minutes.

Materials needed:

- Training Guideline
- November Applications Training Document and What We Apply – What We Expect document located in the G: Drive\Shared\GreenUp Reference Materials\GreenUp Protocols\Monthly Applications Information\2026\Georgia\November
- Pre- and Post- tests.

Training Guidelines:

- Make copies of the tests and training materials for all Team Members attending.
- Set up the training area in an area of the office that will minimize disruptions.
- Hand out the Verifiable Training Record Form (VTRF)
- Begin the meeting by defining the training topic and handing out the Pre-test
- Distribute and review the training materials on November Application Procedures
    - Allow the Team Members to complete the Pre-test as the application information is discussed.
    - Encourage active participation from all Team Members
    - Ask probing questions to discuss key points.
    - Read and answer questions from the test and have the Specialists write in their answers.
    - Encourage group reading
- After reading and reviewing all materials, ask questions to verify the lesson has been understood.
    - Collect the pre-test and discard.
- Hand out the Post-tests. When complete, have each Specialist pass their test to another Specialist for grading.
- Grade the tests as a group and discuss the answers.
- Collect the tests
- End the training session.
- Record the post test scores on the VTRF for each Team Member.
- Place with the verifiable materials in the Service Center Verifiable Training File.
- Make copies of the VTRF and place in each Team Member's training file.
- Complete all Weekly VTM's through Massey University.

WEEKLY TRAINING SESSION

November Application Procedures

Name _____ Date _____

PRE & POST TEST

1. T or F The applications to Warm Season turf include nitrogen.

2. T or F Shrub care service is also provided to new Monthly Landscape services.

3. T or F Broadleaf weed control in Bermuda, Zoysia, or Tall Fescue is performed using Cool Power.

4. The fertilizer applied to Tall Fescue starts is the _____ at 4 pounds per 1000 sq. ft.
   a. 18-24-12
   b. 32-5-7
   c. 0-0-20 +Pendimethalin
   d. 0-0-62

5. The fertilizer applied to Tall Fescue Every Other Month regulars is the _____ at 4 pounds per 1000 sq. ft.
   a. 18-24-12
   b. 32-5-7
   c. 0-0-20 +Pendimethalin
   d. 0-0-62

6. T or F Shrub care is the service performed for regular Monthly Landscape Customers

7. T or F Sedge can be treated in any grass type with ProSedge SLURRY.

8. T or F Every shrub on the property should be sprayed with the I&D Slurry.

9. T or F Following the initial lawn care treatment, a *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular lawn care protocol for the month in which the regular service is performed.

WEEKLY TRAINING SESSION

November Application Procedures

PRE & POST TEST ANSWER KEY

1. T or (F) The applications to Warm Season turf include nitrogen.

2. (T) or F Shrub care service is also provided to new Monthly Landscape services.

3. (T) or F Broadleaf weed control in Bermuda, Zoysia, or Tall Fescue is performed using Cool Power.

4. The fertilizer applied to Tall Fescue starts is the _____ at 4 pounds per 1000 sq. ft.
   a. 18-24-12
   (b.) 32-5-7
   c. 0-0-20 +Pendimethalin
   d. 0-0-62

5. The fertilizer applied to Tall Fescue Monthly Landscape regulars is the _____ at 4 pounds per 1000 sq. ft.
   (a.) 18-24-12
   b. 32-5-7
   c. 0-0-20 +Pendimethalin
   d. 0-0-62

6. T or (F) Shrub care is the service performed for regular Monthly Landscape Customers

7. (T) or F Sedge can be treated in any grass type with ProSedge SLURRY.

8. T or (F) Every shrub on the property should be sprayed with the I&D Slurry.

9. (T) or F Following the initial lawn care treatment, a *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular lawn care protocol for the month in which the regular service is performed.

GREENUP SERVICE PROTOCOLS
NORTH GEORGIA

NOVEMBER 2026 LANDSCAPE APPLICATIONS

Monthly Landscape and Every Other Month Lawn Care Accounts

1. Warm Season Grasses

a. New Monthly Landscape Customers
Apply 0-0-3 with Barricade at **5** pounds per 1000 sq. ft.

b. Regular Monthly Landscape Customers
Apply Tribute Total at **0.023** ounces, Specticle FLO at **0.14** ounces, and Princep **0.49** ounces per 1000 sq. ft. as a liquid broadcast application.

c. New and Regular EOM Customers
Apply Tribute Total at **0.023** ounces, Specticle FLO at **0.14** ounces, and Princep **0.49** ounces per 1000 sq. ft. as a liquid broadcast application.

2. Cool Season Grasses

a. New Monthly Landscape and New and Regular EOM Customers
Apply **4** pounds of 32-5-7 per 1000 sq. ft.; typically, this will be setting 15 with the Lesco Calibration tool.

b. Regular Monthly Landscape Customers
Apply **4** pounds of 18-24-12 per 1000 sq. ft.; typically, this will be setting 15 with the Lesco Calibration tool.

3. Annual and New Aeration Cool Season Turf Only

a. Apply Limelight ProCal or 0-0-3 (Depending on pH) at **5** pounds per 1000 sq. ft.; typically, this will be setting 16 with the Lesco Calibration tool. Be sure to Inspect and flag the irrigation heads. Take soil pH samples. Aerate all turf areas.

All broadleaf weeds in all turf types must be spot treated with **1** ounce of Cool Power per 1000 sq. ft. using the backpack sprayer and the 11010-spray tip.

All new lawn care customers receive the above application protocols for New Customer Services. A *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular monthly lawn care protocol for the month in which the regular service is performed. Aeration and Limelight ProCal application is performed the month following the initial treatment for Warm Season grasses or in September or October for Cool Season grasses.

Make sure to use your sidewalk guard properly around roadways, driveways, sidewalks and bodies of water. Maintain a 3-foot ring of responsibility near all waterbodies. Remember blowing off the roadways, sidewalks, porches, pavers, decks, and driveways is required after all granular fertilizer applications. Blow the material back into the turf areas. Do not allow any fertilizer to go into a storm sewer. Blow off any landscape curbing as well to avoid staining.

GREENUP SERVICE PROTOCOLS
NORTH GEORGIA

NOVEMBER 2026 LANDSCAPE APPLICATIONS

Shrub Care

1. **Cool Season Grasses**
   a. New Monthly Landscape Customers Only
      Apply **8** pounds of 12-2-14 per 1000 sq. ft. Keep this material off concrete surfaces.

Certain shrubs (see the list below) are treated with the I&D Slurry on a preventative basis for insect and disease. Most shrubs are treated on an as needed basis only. **Do not** treat every shrub on the property. This is not necessary or beneficial.

Shrubs that are treated on a preventative basis with **every** initial and regular service include:

- Azalea
- Crape myrtle
- **Camellia
- Laurel (all varieties)
- Gardenia
- Pittosporum
- Indian Hawthorne
- Holly (all varieties)
- **Knock-Out Roses

The list above may be expanded as needed.
**For the protection of pollinating insects, do not spray the foliage of shrubs that are in full bloom or if pollinators are in the area. If insect problems exist or if preventive insect applications are necessary and pollinators are in the area, perform a drench of the root system with the I&D mixture rather than spraying the foliage. The shrub gun can be used for this purpose; adjust the gun to course spray and treat the ground in the root zone area until puddling occurs. Shrub fertilization is not performed at this time. Woody ornamentals need to be able to "harden off" at this time to be more resistant to freeze damage.

Inspect all landscapes very carefully for insect and disease activity. Good inspections, proper treatment and proper proactive treatments must be done.

Do a quality job on every application. Perform perfect applications with perfect measuring, perfect calibration and perfect walking speed. Always be mindful of the 5 key principles. Provide thorough inspections and great customer communication with the goal of providing long-term sustainable solutions. This is what is needed to keep our customers happy, to prevent service calls, cancellations, and claims.

MASSEY GreenUP Landscape Services

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – November 2026 Landscape Applications

Watering instructions for all new and regular LAWN CARE services are: Please irrigate with ¼ inch of water if there is no rain within 24 hrs."

Warm Season Turf – New Customers

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Granular application of potassium and magnesium with pre-emergence weed control.	This application will improve the cold hardiness of the turf.	It is important to allow Warm Season grasses to go into a dormant state before winter. This application will enhance cold hardiness and will not produce new leaf growth.	"This nutritional application will provide greater tolerance to cold temperatures. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Pre-Emergence Weed Control	Pre-emergence herbicides applied at this time of year will prevent the emergence of cool season annual weeds.	A reduction in the emergence of winter annual broadleaf and grassy weeds.	"Our pre-emergence weed control application will help prevent winter annual broadleaf and grassy weeds."
Inspection for lawn damaging insects and diseases	Lawn damaging insects and diseases can be devastating to turf. Frequent inspection and treatment is crucial in the prevention of turf damage.	Lawn damaging insects and diseases are treated on an as needed basis.	"Your lawn was inspected for lawn damaging insects and diseases. Any problems found are treated on an as needed basis."
Post-emergent weed control applied as a spot treatment using the backpack applicator.	We achieve excellent control of practically all types of broadleaf weeds. Sedge can also be treated if it is competing with the turf or if it is a concern for the customer.	The weed control materials we use are a combination of slow and quick acting materials. Affects to the weeds can be seen in about 5 to 7 days. Control is achieved within 3 - 4 weeks.	"The weed control materials applied will greatly reduce the amount of weeds in your lawn within 3 to 4 weeks. A second application may be necessary in severe cases."

Lawn Specialist script for informing a new customer with Warm Season Turf of what we are going to do (or what we did) for their regular lawn care treatment in November: "I will be applying a granular broadcast application of potassium with micro-nutrients to enhance the hardiness of your lawn and also applying pre-emergence weed control materials for the prevention of winter annual broadleaf and grassy weeds. I will also be treating any existing broadleaf, sedge or grassy weeds and will be inspecting your lawn for insects and diseases and treating those as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."

Warm Season Turf – Regular Landscape Customers and EOM New and Regular Customers

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Pre & Post-emergent weed control applied as a spot treatment using the backpack applicator for low volume application.	We achieve excellent control of practically all types of broadleaf weeds. Sedge can also be treated if it is competing with the turf or if it is a concern for the customer.	Noticeable results will take 5 to 7 days. Control is achieved within 3 to 4 weeks.	"The weed control material applied will greatly reduce the amount of weeds in your lawn within 3 to 4 weeks. A second application may be necessary in severe cases."
Inspection for lawn damaging insects and diseases	Lawn damaging insects and diseases can be devastating to turf. Frequent inspection and treatment as needed is crucial in the prevention of turf damage.	Lawn damaging insects and diseases are treated on an as needed basis.	"Your lawn was inspected for lawn damaging insects and diseases. Any problems found are treated on an as needed basis."

What We Do and What to Expect – November 2026 Landscape Applications

Lawn Specialist script for informing a Regular Monthly Landscape or New or Regular Every Other Month customer with Warm Season Turf of what we are going to do (or what we did) for their regular lawn care treatment in November: "I will be applying a liquid broadcast application of pre- & post-emergence weed control materials for the prevention of winter annual broadleaf and grassy weeds. I will also be inspecting your lawn for insects and diseases and treating those as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."

Cool Season Turf – New and Regular Monthly Landscape Every Other Month Customers

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Cool Season Turf Granular application of a complete dry fertilizer blend.	This application will stimulate good color and growth at a time when cool season grasses are coming out of summer dormancy.	An improvement in growth and color.	"This application will enhance the color and growth of your lawn. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Post-emergent weed control applied as a spot treatment using the backpack applicator for low volume application.	We achieve excellent control of practically all types of broadleaf weeds. Sedge can also be treated if it is competing with the turf or if it is a concern for the customer.	Noticeable results will take 5 to 7 days. Control is achieved within 3 to 4 weeks.	"The weed control material applied will greatly reduce the amount of weeds in your lawn within 3 to 4 weeks. A second application may be necessary in severe cases."
Inspection for lawn damaging insects and diseases	Lawn damaging insects and diseases can be devastating to turf. Frequent inspection and treatment as needed is crucial in the prevention of turf damage.	Lawn damaging insects and diseases are treated on an as needed basis.	"Your lawn was inspected for lawn damaging insects and diseases. Any problems found are treated on an as needed basis."

Lawn Specialist script for informing a New or Regular Monthly Landscape Customer or regular Every Other Month customer with Cool Season Turf of what we are going to do (or what we did) for their regular lawn care treatment in November: "I will be applying a granular broadcast application of fertilizer with micro-nutrients to enhance the color and growth of your lawn. I will also be treating any existing broadleaf, sedge or grassy weeds and will be inspecting your lawn for insects and diseases and treating those as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."

Annual and New Aeration Services

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Core aeration	Aeration is the most beneficial service we perform. It stimulates root growth, helps break down thatch, and allows water and air to get to the root system.	Increased root growth, better soil structure, and an improvement in the overall health of the plant. Leaf tissue will look better in the long run but there will not be a visible change in the short term.	"The aeration will help create healthy plant roots and improve the vigor and heartiness of the lawn."
Broadcast application of high efficiency lime.	This application will increase the pH of Georgia's very acidic soils.	Visual results of this treatment may be seen as a slight increase in growth, density and overall health of the turf, but the primary benefit is to raise the soil pH to better utilize nutrients applied with future services.	"Your lawn was treated with a high efficiency lime material to balance the pH of your soil. This application will help your lawn better utilize nutrients applied with future services.

What We Do and What to Expect – November 2026 Landscape Applications

Primary Landscape Issues in November

The treatment for New Monthly Landscape customers with Bermuda or Zoysia grass contains potassium. This treatment is intended to enhance the cold hardiness of the turf. Pre-emergence weed control is also performed for new Monthly Landscape Customers with warm season turf. This application will greatly reduce the emergence of winter annual broadleaf and grassy weeds.

The application we apply to Regular Monthly Landscape Customers and all EOM customers with Bermuda or Zoysia grass contains Post and Pre-Emergent weed control. This treatment is intended to greatly reduce the emergence of winter annual broadleaf and grassy weeds.

The fertilizer we apply to New Monthly Landscape customers with Tall Fescue is the 32-5-7 granular fertilizer. At the rate we use, 1.28 pounds of nitrogen is applied. This application is provided to stimulate good color and growth. The fertilizer applied to regular Monthly Landscape customers is the 18-24-12. At the rate we use, .72 pounds of nitrogen is applied along with a healthy slug of phosphorus and potassium to enhance root development.

Bermuda and Zoysia lawns will begin to go into a dormant state in November. Growth of warm season turf is greatly reduced with the cooler temperatures. Toward the end of the month, warm season turf will begin to turn brown.

Fescue lawns will look very good in November. As the fall comes on, cool season grasses come out of dormancy, turn green and grow actively. This is a good time of year for fall fertilization.

Brown patch fungus in cool season turf can be a problem this month. Look for circular patches of damaged turf with yellow, orange or purple grass blades on the outside border of the patch. The base of the blade will be rotten and will slide out easily when pulled. Re-growth in the center of the circular patch may give the damaged area a "doughnut" like appearance. Fungicide applications will be necessary to stop the spread of the disease and allow the turf to recover.

The need for supplemental irrigation is very little in November as the temperatures begin to cool. In the absence of rainfall, supplemental watering may be needed every other week.

Piercing- sucking insects on shrubbery continue to be a problem in November. Look for sooty mold to be an indicator. The black mold which feeds on honeydew from the insects can be seen from a distance, informing the observant Inspector and Lawn Specialist to inspect closer for aphids, scales or mealy bugs.

The various beetles and weevils remain active in November. There are many different species of beetles and weevils that cause damage to plants in Georgia. The most common are the Chafers, Japanese Beetles and May and June Beetles. Weevils are beetles with a snout or bill. Beetle adults will commonly feed on the foliage of ornamental shrubbery. The Japanese beetle is the most voracious of those listed above.

Pruning of trees and shrubs should be very limited in November. Many shrubs such as camellias and azaleas will already have flower buds set. Pruning should be limited to removing dead, diseased or dysfunctional branches. Trimming for shape should not be done at this time because it will stimulate new growth, which would be damaged by upcoming cold weather.

What We Do and What to Expect – November 2026 Landscape Applications

Make November a success by constantly looking for opportunities, offering solutions and asking for the business. Landscape sales should be rocking in November. Every lawn is a lead. People need our help. Find those in need, solve their problems and SELL, SELL, SELL & SERVICE, SERVICE, SERVICE!

GREENUP SERVICE PROTOCOLS

Frost and Freeze Communication

All Team Members must all be prepared to discuss with our customers what to do and what not to do before and during a frost or freeze; and how to diagnose frost or freeze damage and what to communicate to our customers after it occurs. Good documentation of freeze damage now will be a big benefit in the spring when the full extent of the damage is known. Everyone must understand and communicate clearly to our customers that freeze damage is an act of nature and is NOT covered by our replacement guarantee.

What causes one plant to be damaged from the cold when others are not? Cold injury occurs when the cell walls of the plant rupture- resulting in the loss of moisture in the cell. The plant then dies from desiccation (it dries up). This process is similar to what happens when you put a gallon jug full of water in the freezer with the lid on (if you haven't done it, the ice expands and the jug cracks). When the jug cracks (or the walls of the plant cells rupture) the moisture leaks out as the ice begins to thaw resulting in an empty jug (or a dried out plant). Plants that are cold hardy have the ability to regulate the moisture in the cell to prevent cell rupture. This is analogous to removing the cap from the jug in the freezer or reducing the amount of water in the jug. The ability of a plant to regulate the moisture in its cells varies from plant to plant. Different plants respond differently to cold temperatures.

Why do I have cold injury here and not there? Why is my lawn damaged more than my neighbor's? Many factors such as the availability of moisture in the plant, the slope of the landscape, the moisture in the soil, wind speed and other protection factors like tree cover determine the amount of cold damage that occurs from one area to another. If a plant is dehydrated going into a freeze the damage will be much more severe. Damage will also be more severe at the bottom of a slope since cold air falls and warm air rises. Moist soils are usually warmer than dry soils resulting in less cold injury. Additionally, irrigation water is usually about 70 degrees. Soils watered before a freeze will be warmer than those that are not. Wind can increase or decrease the amount of cold injury depending on just how cold the temperatures get. Wind can keep frost from forming when the temperatures are near freezing or increase the amount of damage caused by desiccation if the temperatures fall far below freezing. Some plants and turf will be protected from frost by coverings such as the canopy of a tree or the side of a home.

Recognizing cold injury can be tricky. The morning after a frost, the grass blades will initially appear darker green and water soaked. Within a few hours, the leaves will begin to get grayish spots. The next day, the grass will be wilted and folding over. Within a few days, it will turn brown. Some areas of the lawn may not turn brown. This is usually due to having a protective covering like a tree canopy or other object keeping the frost from settling on the turf. Weeks later, as the turf begins to recover, some areas will remain brown long after others. This gives the turf a very strange appearance that looks as though someone had dipped a basketball in Round Up (total kill herbicide) and bounced it all over the lawn. These brown areas have been more severely damaged because of small depressions in the turf or soil where the frost and cold air settles for a longer period of time causing the turf in those spots to remain cold longer. The patterns often follow the path that the lawn mower usually travels.

GREENUP SERVICE PROTOCOLS

Frost and Freeze Communication

Annuals and the more tender leaf shrubs will show damage in a similar manner. Some woody ornamentals however may not show damage until many months later. An examination of the trunk will show that the freezing temperatures have caused the bark to crack (remember the water jug analogy). Death to the plant occurs because the bark (or phloem), which transports food that the leaves make through the process of photosynthesis, has been damaged so the root system dies of starvation. The plant does not die sooner because the xylem layer, which transports water from the roots to the leaves, is still intact. Additionally, the damaged wood will be more prone to infection by plant damaging diseases.

What to do to prevent damage from the cold. To reduce the amount of cold injury that occurs, homeowners should irrigate before the frost or freeze making sure to end their irrigation soon enough for the leaves to dry so ice will not form on the leaves. If it is not possible to irrigate with enough time for the leaves to dry before freezing temperatures, it would be better do delay irrigation until warmer temperatures arrive. **Do not irrigate during a freeze**. This practice is beneficial in nurseries and citrus groves only because they are equipped to water non-stop until the ice is melted. If not done properly, this practice can prolong the amount of time that the plants are subjected to the cold temperatures. The ice does not melt as quickly as the air temperatures are warming up.
Cold sensitive plants can be protected with blankets or boxes. The cover must be removed as soon as the temperatures begin to warm up.

What can be done to speed up the recovery? If the lawn was in good health before the frost, there is nothing extra that will need to be done to speed up the recovery. We fertilize on a regular basis with fertilizers that contain slow release nitrogen. There is no need or benefit to apply additional fertilizer. There is already a nitrogen source available in the soil that is just waiting for warm temperatures to begin releasing again. As soon as the weather warms up, the lawn will grow out of the frost injury.

If the lawn has not been serviced, our standard initial service procedures will be very beneficial.

Particular Customer Communication Points:

- When servicing a customer's lawn on a day when it is going to freeze, inform the customer NOT to water during a freeze. Leave the customer a note that says, "Please do not water until after freezing temperatures pass"
- Document and communicate turf and ornamental freeze damage on our customer's properties. Write notes to inform customers of damage that has occurred to their lawn or shrubs. This information will be important to them and the documentation will be beneficial during the spring when the full extent of the damage is known.
- When communicating to a customer about freeze damaged turf or shrubs, which require renovation to repair the damage, inform them that renovation will be needed. DO NOT inform them that "we will work with the lawn until it recovers" when the real answer is renovation. When we tell that to a customer, we make the problem our responsibility.
- When a customer asks what we can do to speed up the recovery, inform them that the regular services that have been done recently and the regular services we will do in the upcoming months help to deal with this situation. Additional fertilization at this time is not necessary or beneficial.

Frost and Freeze Communication

- If the customer asks if they should trim off the freeze damage to their shrubs, suggest that they leave the damage until the spring when the threat of frost or freeze is over. Trimming will stimulate new buds to sprout, which could then be damaged by another freeze.

With so many factors involved in cold injury it can become a real customer service challenge. Hopefully, this information helps you to better diagnose the problem, understand the causes, give good advice to our customers and maybe even prevent some damage to your own lawn.

GREENUP SERVICE PROTOCOLS

Frost and Freeze Communication



Frost damaged grass blades will have burnt, brown tips. Reddish purple grass blades may also be seen. This happens because the cold air causes the green chlorophyll to degrade. Because the green pigment of the leaf has been removed, the other colors of the leaf (that are always there but are covered by the green chlorophyll) become visible. This is also what happens when tree leaves get their fall colors.

GREENUP SERVICE PROTOCOLS

Frost and Freeze Communication

Recovering frost damage in St. Augustine turf



The brown areas have been more severely damaged because of small depressions in the turf or soil where the frost and cold air settles for a longer period of time causing the turf in those spots to remain cold longer. The patterns often follow the path that the lawn mower usually travels.

GREENUP SERVICE PROTOCOLS

Frost and Freeze Communication



Freeze damage done to the bark of an Azalea. This picture was taken in August when the branches began to die.

WEEKLY TRAINING SESSION

Cold Weather Injury

Topic Category: Lawn & Tree/shrub

Recordable Verifiable Training Hours: 1.0 hours

Objectives: This lesson is designed to teach the basics of cold weather injury; what it is, how it happens and how to prevent it.

Length of lesson: Approx 60 minutes.

Materials needed:

- Cold Weather Injury document
- Pre and Post tests.

Training Guidelines:

- Make copies of the tests and training materials for all Team members attending.
- Set up the training area in an area of the office that will minimize disruptions.
- Begin the meeting by defining the training topic and handing out the pre-test
    - Allow a few minutes for Team members to complete the pre-test.
    - Collect the pre-test and hand out the Verifiable training form
- Distribute and review the training materials. Use the Training outline as a guide for key points.
    - Encourage active participation from all Team members
    - Ask probing questions to develop key points
    - Encourage group reading
- After reading and reviewing the article, ask questions to verify the material has been understood.
- Hand out the post-tests. When complete, grade the tests and record the score on the Verifiable Training Record.
- Collect tests and place with the verifiable materials in the Service Center Verifiable Training File.
- Make copies of the Verifiable Training Record and place in each Team member's training file.
- Fax the Verifiable Training Record to the Quality Assurance department @ 407-645-3570.

WEEKLY TRAINING SESSION

Cold Weather Injury

Living in Florida, winter is the season we look forward to as a break from the long hot summer. Temperatures average in the 60's and 70's. Much of the landscape remains green. Typical winter images such as shoveling snow are replaced with frolicking at the beach.





The subtropical climate we live in is enjoyed not only by us, but by many of the plants we grow. Plants such as hibiscus, ixora and bougainvillea thrive in the tropics, but struggle with the weather that winter brings. Even St. Augustine can suffer is the temperatures are cold enough. As these tropical plants are usually our customer's favorites, it is important that we understand what happens to them. Lets take a look at the effects of winter and the problems it brings.

Some of the problems winter brings are:

- Desiccation
- Frost
- Freezing

Desiccation

Plant desiccation is the drying out of the plant. This is more of an issue in winter due to the cold air. Cold air itself is dry. All things, including air, contract when they are cooled. As the air contracts, it becomes more dense and can not contain as much moisture as warm air.

WEEKLY TRAINING SESSION

Cold Weather Injury

You can see this process occur whenever a cold front approaches (Figure 3). It will usually rain. As the cold air approaches, it pushes the warm, wet air up. Thunderstorms develop as the warm air rises. The temperature at the top of the thunderstorm is colder, causing it to rain. This is because the cold air acts like a sponge wringing out the excess water vapor.

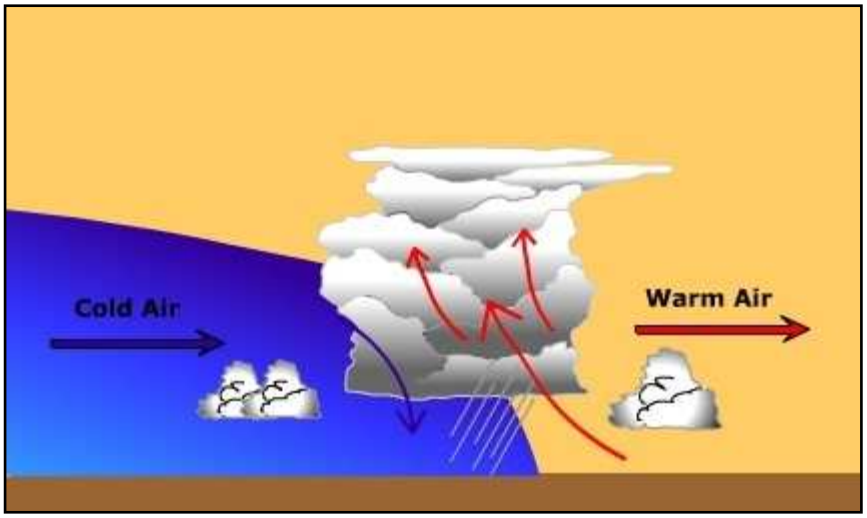


Figure 3. A cold front.

The good news is the front brings much needed precipitation to the plants. The bad news is the air that follows is very dry. The change from warm, moist air to cool dry air can be very sudden, usually occurring over the course of a few hours. This is faster than most plants can react. The result, you have plants that have gone from one extreme to another. The breathing holes, or stoma, are wide open allowing the plant to dry out further.

The other problem with winter desiccation is that it is often not easily noticeable. The typical signs of drought may not show themselves. The wilting and curling of leaves may not occur at cooler temperatures. Without these signs, our customer may not see a need to water. This will push the plant into severe drought stress. The damage may not show itself until the spring green up.

How do we overcome this? *Regular watering*. Even in the dead of winter when the plants are dormant. Water once a week, applying 1" of water per zone. This will provide the moisture needed by the plants to make it through the winter.

This may create the conditions needed for some diseases, such as brown patch to form. The chance of disease is outweighed by the needs of the plant however. We can manage a disease should it appear. It is better to err on the side of caution and ensure the conditions needed by the pant are there, even if there are the same conditions needed by a disease.

WEEKLY TRAINING SESSION

Cold Weather Injury

Frost

Frost is the formation of ice crystals on a surface due to rapid cooling (Figure 4). If the temperature on the surface is above freezing, dew will form. If the temperature of the surface is at or below freezing, frost will form. We usually see frost in isolated pockets on the lawn or on the surface of cars and rooftops. These places have cooled faster than the surrounding areas. This is evident in the patterns frost will create in a lawn (Figure 5). The brown pattern shows where the temperature was cool enough to form the frost.



Figure 4. Frost.



Figure 5. Frost damage on turf grass.

Desiccation plays a role here as well. In order for water to freeze, it must lose an enormous amount of energy. The more water present, the more energy there is to lose before freezing takes place. Our exposure to freezing temperatures is usually limited to a few hours. If the plant is fully hydrated, it will take quite some time before the water loses enough energy to freeze; usually longer than the exposure to freezing temperatures. As a result frost will not form. Should a plant be dry, however, very little water is present and the time for energy loss is shortened, resulting in quick freezing with frost forming early.

So again, the best protection is a well watered plant. Many people believe that watering during a frost will protect the plant from damage. It will. But in order for it work, the plant must be watered continually during the time when frost can form. This works because moving water has more energy than still water, making it harder to freeze. The down side to this method is that the plants must be continually watered. Most irrigation systems can only water one zone at a time. Should the timer move on the next zone, the zone that was just watered will chill and frost can occur. This type of protection is best left to farmers who have the equipment to do this properly. Not to mention that our customers probably will not want to stay up all night babysitting their plants!

WEEKLY TRAINING SESSION

Cold Weather Injury

You can protect a plant from frost by covering with fabric. The fabric will act like a blanket, keeping the plant's surface slightly warmer. In our mild winters, this can be enough to prevent the formation of frost. DO NOT use plastic as it will transfer heat easily if it is in contact with the plant. Plastic is only effective if it is tented over the plants. Always remove the covering when the sun rises.

Should frost damage occur, inform our customer that the damage is superficial and will grow out with the return of warm weather. They should not rake out the brown grass or prune off the damage material as it may act as a blanket protecting the plant from future frosts. Wait until the return of spring before performing any corrective pruning.

Freezing

Freezing is much more severe than frost. Frost only affects the surface of a plant where freezing damages the interior of the plant. This damage is caused by the formation of ice inside the plant, not the cold temperatures.

When matter is chilled, it contracts and becomes denser. This is true for everything from molecules to mountains. There are a few exceptions to this. Water is one of those exceptions. Just before water freezes, it suddenly expands. This is why you can fill an ice cube tray so no water flows over the tops of the individual cubes and pull out a solid tray of ice later on. This is also why ice floats in water, because it is less dense than the surrounding water.

Great, but what does this mean to me? Well, imagine that water is in a sealed container. The container then froze. As the water freezes it expands, and the container bursts. This is what happens inside a plant cell when it freezes. As the water expands, the cell walls burst, killing the cell. Should enough cells be killed, sections of the plant can be decline. If the crown of the plant is frozen, the entire plant may die.



Figure 6. Frozen plants.

Many plants can survive freezing temperatures. All of the plants that grow in the north are able to be frozen and continue living year after year; while a hibiscus will die after just one night of freezing temperatures.

Why and some plants freeze and others not? The answer is in their physical make up. Those plants that normally grow in freezing climates prepare themselves for the winter. They reduce the amount of activity within the plant, they drop their leaves and go dormant. But more importantly, they transfer the water from

WEEKLY TRAINING SESSION

Cold Weather Injury

inside their plant cells to the spaces between the cells. Here if the water freezes and expands, it squeezes the plants cells rather than bursting them. With the onset of spring, the plant transfers the water back into the cells and resumes normal activity. Most tropical plants do not have the ability to move the water. This makes them susceptible to freeze damage. This is why a hibiscus will die back after a freeze when the holly planted next to it does well.

The best way to protect against freeze damage is to follow the first of the Five Key Principles. It is plant an adaptive plant. If you live in a region that typically gets many freezes per year, do not plant those plants that are susceptible to freezing.

We do not always have a say in what is planted in the landscape. Should you have plants that can be damaged by an upcoming freeze; they will need to be protected. Some steps that can be taken are:

- Make sure the plants are watered well before the onset of cold weather. Remember, cold air and dry plants means death!
- Cover them with a cloth wrap, paying special attention to the crown of the plant. Wrap exposed trunks with burlap or cloth. This will insulate the crown and cambium from the cold air. Cover the plant with a cloth and drape it to ground.
- Place a light, Christmas lights work well, inside the sheet. Make sure the bulb does not touch any plant tissues. Leave the light on throughout the night. The bulb will give off heat, keeping the air inside the sheet warmer than the outside air. In marginal freezing temperatures, this can be enough to protect the plant.
- If the temperatures are going to be below freezing for more than 12 hours or well into the twenties, expect damage. In these situations, there is no way to provide effective protection.

Plants that are damaged will look black and greasy. This is the plant cell contents oozing out of the plant. They will quickly brown and wilt (Figure 7 & 8).





Figures 7 & 8. Freeze damage.

WEEKLY TRAINING SESSION

Cold Weather Injury

Like in frost damage, it is best to not prune them until spring. Pruning can stimulate new growth that is even more susceptible to cold injury. In some cases, a plant may look dead, but will come back in the spring. It is best to let them be and wait for spring.

Some freeze damage is not easily identifiable. Sometimes the damage takes place in the bark of the plant. This will cause cracks to form in the bark (Figure 9). The plant may grow normally for many months with the cracks, but the cracks are an entrance for disease to invade the plant. These diseases may take a while for them symptoms to show themselves. It is not uncommon to be fighting a vascular disease in the summer that is the result of damage that occurred during the winter. Since prevention is still the best protection, inspect the plant thoroughly for any cracking after a freeze. If cracking is found, prune out the damaged tissue in the spring.



Figure 9. Cracks in the bark due to freezing.

Another concern with freezing is late season cold fronts. In March and April plants have begun their spring greenup. A freeze at this time exposes tender new growth to cold temperatures. Even plants that can tolerate cold weather are not longer protected as they have moved the water back into the cells anticipating the spring flush.

Never walk on a lawn that is frozen. The weight of you and any equipment will crush the cells of the grass, causing more injury than the freeze alone. Always wait until the lawn has thawed before performing service. Be aware that the shaded areas of the lawn may remain frozen long after the sunny areas have thawed.

Remember, the best protection is prevention. Follow the five key principles for the plants, cover them when a frost is imminent and wrap them when a freeze is forecasted. Should damage occur, wait for spring and prune then. If the damage can not be tolerated, plant something else that will survive your particular climate. If you are not sure what plants will be damaged by a cold event, think tropical. Tropical plants are more susceptible to the colder weather. Look at what is growing in your area year in and year out. These plants are the ones to stick with for years of reliable performance.

WEEKLY TRAINING SESSION

Cold Weather Injury

Pre/ Post Test

1. What are the three concerns of cold weather? _____
   _____
   _____
2. Frost occurs at temperatures between 30 and 40 degrees. T or F
3. The best remedy for freeze damage is to prune it off immediately. T or F
4. Rain in the winter is a sign of an approaching cold front. T or F
5. Dry plants are less susceptible to cold injury than watered plants. T or F
6. Frost cracks are a problem because they allow _____ to invade the plant.
7. How does freezing kill a plant? _____
8. A freeze in December is more damaging than a freeze in March. T or F
9. The best protection from freeze damage is _____
10. Winter damage may not show itself until spring. T or F

WEEKLY TRAINING SESSION

Cold Weather Injury

Pre/ Post Test

1. What are the three concerns of cold weather? _desiccation_____
   _frost_____
   _freezing_____
2. Frost occurs at temperatures between 30 and 40 degrees. T or (F)
3. The best remedy for freeze damage is to prune it off immediately. T or (F)
4. Rain in the winter is a sign of an approaching cold front. (T) or F
5. Dry plants are less susceptible to cold injury than watered plants. T or (F)
6. Frost cracks are a problem because they allow __disease_____ to invade the plant.
7. How does freezing kill a plant? _ruptures plant cells_____
8. A freeze in December is more damaging than a freeze in March. T or (F)
9. The best protection from freeze damage is _planting a plant that can tolerate freezing temperatures__
10. Winter damage may not show itself until spring. (T) or F

GREENUP SERVICE PROTOCOLS

Equipment Preparation for Freezing Temperatures

When freezing temperatures are going to occur in your area, make sure your equipment is prepared or damage will occur.

To prepare the pump for freeze you must open and remove the filter cap, open all agitator valves, remove or open the valve at the end of the hose. Doing this will allow the ice room to expand without damage to the pump casing, seals or hoses.

Remove all injectors and store them inside.

Bring the backpack sprayers indoors to prevent them from freezing.

If you do not start the diesel trucks properly after the freeze, serious problems will result. It must be done in the following manner.

- Turn the ignition key to the “on” position and wait for the Glow-Plug light to turn off. Based on Temperature this will take 2-10 seconds.
- Start the engine
- Allow the vehicle to idle. The automatic warm-up system will increase idle speed for 30 seconds to 2 minutes. Once idle drops, the vehicle is safe to drive.

The engine will likely smoke a little once started. When the truck starts, **do not** rev the motor (a diesel engine should never be revved). The cold oil will blow the oil filter off the truck or at the least create oil leaks.

WEEKLY TRAINING SESSION

November Application Procedures

Topic Category: Lawn
Recordable Verifiable Training Hours: 1.5

Objectives: This lesson is designed to teach our Application Procedures for November.

Length of lesson: Approx. 1 Hour and 30 minutes.

Materials needed:

- Training Guideline
- November Applications Training Document and What We Apply – What We Expect document located in the G: Drive Shared\GreenUp Reference Materials\GreenUp Protocols\Monthly Applications Information\2026\November
- **8 pounds** of 12-4-8 Shrub Fertilizer (16 ounces in a measuring cup is close to one pound)
- 1000 sq. ft. area of shrub bed
- Pre- and Post- tests.

Training Guidelines:

- Make copies of the tests and training materials for all Team Members attending.
- Set up the training area in an area of the office that will minimize disruptions.
- Hand out the Verifiable Training Record Form (VTRF)
- Begin the meeting by defining the training topic and handing out the Pre-test
- Distribute and review the training materials on November Application Procedures
    - Allow the Team Members to complete the Pre-test as the application information is discussed.
    - Encourage active participation from all Team Members
    - Ask probing questions to discuss key points.
    - Read and answer questions from the test and have the Specialists write in their answers.
    - Encourage group reading
- After reading and reviewing all materials, ask questions to verify the lesson has been understood.
    - Collect the pre-test and discard.
- Hand out the Post-tests. When complete, have each Specialist pass their test to another Specialist for grading.
- Grade the tests as a group and discuss the answers.
- Collect the tests
- Take all Specialists to the pre-measured shrub bed area. Apply the **6** pounds of 12-4-8 to the shrub bed area so they get an idea of how much fertilizer is being applied to all regular shrub care services.
- End the training session.
- Record the post test scores on the VTRF for each Team Member.
- Place with the verifiable materials in the Service Center Verifiable Training File.
- Make copies of the VTRF and place in each Team Member's training file.
- Complete all Weekly VTM's through Massey University.

WEEKLY TRAINING SESSION

November Application Procedures

Name_____ Date _____

PRE & POST TEST

1. The fertilizer applied all new EOM St. Augustine customers is the
   a. 33-0-16 at 1 lb. with 0-0-1 at 18 ounces per 1000 sq. ft.
   b. 0-5-5 Straight at 4 pounds per 1000 sq. ft.
   c. 0-0-1 at 18 ounces with .75 Princep per 1000 sq. ft.
   d. 33-0-16 at 1.36 lbs. with 0-0-1 at 18 ounces per 1000 sq. ft.

2. T or F Pillar SC is used as a liquid broadcast disease prevention application for all new and regular customers in all grass types.

3. T or F Broadleaf in a St. Augustine lawn are treated with
   a. 2 ounces of SBM2 per gallon of water per 1000 sq. ft.
   b. 2 ounces of SBM1 plus 3 ounces of Auguzine per gallon of water per 1000 sq. ft.
   c. 0.8 grams of Certainty per gallon of water per 1000 sq. ft.
   d. 0.11 ounces of Celsius and .28 ounce of Dismiss South per gallon of water per 1000 sq. ft.

4. T or F Grassy weeds in Zoysia or Bermuda lawns are treated with
   a. .9 grams of Certainty with .5 oz. of wetting agent per gallon of water per 1000 sq. ft.
   b. 2 ounces of SBM2 plus 3 ounces of Auguzine per gallon of water per 1000 sq. ft.
   c. 0.75 ounces of Change Up per gallon of water per 1000 sq. ft.
   d. 0.11 ounces of Celsius and 0.28 ounces Dismiss South per gallon of water per 1000 sq. ft.

5. T or F SBM1 can be mixed with Sedge Hammer.

6. T or F No insecticide is applied to grass types other than St. Augustine unless insect problems are found.

7. T or F Annual aerations are fertilized with either 0-0-20 straight or granular sulfur depending on the soil pH.

8. T or F Fertilizer is applied to all new and regular shrub care services.

9. T or F Every shrub on the property should be sprayed with the I&D Slurry.

10. T or F Following the initial lawn care treatment, a *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular lawn care protocol for the month in which the regular service is performed.

WEEKLY TRAINING SESSION

November Application Procedures

PRE & POST TEST ANSWER KEY

1. The fertilizer applied all new EOM St. Augustine customers is the
   a. 33-0-16 at 1 lb. with 0-0-1 at 18 ounces per 1000 sq. ft.
   b. 0-5-5 Straight at 4 pounds per 1000 sq. ft.
   c. 0-0-1 at 18 ounces with .75 Princep per 1000 sq. ft.
   d. 33-0-16 at 1.36 lbs. with 0-0-1 at 18 ounces per 1000 sq. ft.

2. T or F Pillar SC is used as a liquid broadcast disease prevention application for all new and regular customers in all grass types.

3. T or F Broadleaf weeds in a St. Augustine lawn are treated with
   a. 2 ounces of SBM2 per gallon of water per 1000 sq. ft.
   b. 2 ounces of SBM1 plus 3 ounces of Auguzine per gallon of water per 1000 sq. ft.
   c. 0.8 grams of Certainty per gallon of water per 1000 sq. ft.
   d. 0.11 ounces of Celsius and .28 ounce of Dismiss South per gallon of water per 1000 sq. ft.

4. T or F Grassy weeds in Zoysia or Bermuda lawns are treated with
   a. .9 grams of Certainty with .5 oz. of wetting agent per gallon of water per 1000 sq. ft.
   b. 2 ounces of SBM2 plus 3 ounces of Auguzine per gallon of water per 1000 sq. ft.
   c. 0.75 ounces of Change Up per gallon of water per 1000 sq. ft.
   d. 0.11 ounces of Celsius and 0.28 ounces Dismiss South per gallon of water per 1000 sq. ft.

5. T or F SBM1 can be mixed with Sedge Hammer.

6. T or F No insecticide is applied to grass types other than St. Augustine unless insect problems are found.

7. T or F Annual aerations are fertilized with either 0-0-20 straight or granular sulfur depending on the soil pH.

8. T or F Fertilizer is applied to all new and regular shrub care services.

9. T or F Every shrub on the property should be sprayed with the I&D Slurry.

10. T or F Following the initial lawn care treatment, a *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular lawn care protocol for the month in which the regular service is performed.

GREENUP LAWN, TREE & SHRUB CARE SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

Lawn Care Accounts

1. St. Augustine
   a. Regular Customers (All Service Centers)
      Apply **18** ounces of 0-0-1, and **0.75** ounces of Princep, per 1000 sq. ft. **Be very careful of staining with this mixture!**

   b. New Customers (All Service Centers)
      Apply **4** pounds of 0-5-5 with Atrazine, per 1000 sq. ft.

If chinch bugs are found at the time of new or regular service, spot treat them with Imidacloprid Chinch Bug spot treat slurry using the backpack sprayer using the 8010E spray tip.

All broadleaf weeds in St. Augustine lawns must be spot treated with the SBM1 slurry at **2** ounces of pre-mixed material and **3** ounces of Auguzine per gallon of water per 1000 sq. ft., using the backpack sprayer and the 11010-spray tip.

Grassy weeds in St. Augustine lawns must be spot treated with Certainty at **0.8** grams and **0.5** ounces of wetting agent per gallon of water per 1000 sq. ft., using the backpack sprayer and the 11010-spray tip.

2. Zoysia
   a. New and Regular Customers (All Service Centers)
      Apply **18** ounces of 0-0-1 and **.75** ounces of Princep per 1000 sq. ft. **Be very careful of staining with this mixture!**

3. Bermuda
   a. New and Regular Customers (All Service Centers)
      Apply **18** ounces of 0-0-1 and **.75** ounces of Princep per 1000 sq. ft. **Be very careful of staining with this mixture!**

All broadleaf weeds in Zoysia or Bermudagrass must be treated with Cool Power at **1** ounce per gallon of water per 1000 sq. ft., using the backpack sprayer and the 11010-spray tip. Do not use on St. Augustine severe injury or death will occur. Use a separate backpack dedicated for this use.

Grassy weeds in Zoysia or Bermudagrass lawns must be spot treated with Certainty at **.8** grams and **.5** ounces of wetting agent per gallon of water per 1000 sq. ft., using the backpack sprayer and the 11010-spray tip.

GREENUP LAWN, TREE & SHRUB CARE
SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

4. Annual and New Aeration
   Apply 0-0-3 (Straight) or Granular Sulfur (depending on the soil pH) at **5** or **4** pounds per 1000 sq. ft. (Respectively); typically, this will be setting 15 for sulfur with the Lesco Calibration tool. See the Aeration Service Protocol for complete details.

All new lawn care customers receive the above application protocols for New Customer Services. A *complete* Regular Service lawn care application is done (at full charge) about 30 days after the initial application using the regular monthly lawn care protocol for the month in which the regular service is performed. Aeration plus the 0-0-3 or Sulfur application is performed the month following the initial treatment.

Keep any Atrazine fertilizer away from the shrub beds. Make sure to use your sidewalk guard properly around roadways, driveways, sidewalks, and bodies of water. Maintain a 3 foot ring of responsibility near all waterbodies. Remember blowing off the roadways, sidewalks, and driveways is **required** after all granular fertilizer applications. Blow the material back into the turf areas. Do not allow any fertilizer to go into a storm sewer. Blow off any landscape curbing as well to avoid staining**.**

Inspect all lawns very carefully for Chinch bug activity. Good inspections, perfect preventive treatment and proper proactive treatments must be done. Perform proactive inspections for any chinch bug problem 14 to 21 days after treatment to ensure they are dead. If there is no further activity, do not do any additional treatment.

Shrub Service

Certain shrubs (see the list below) are treated with the I&D materials on a preventative basis for insect and disease. Most shrubs are treated on an as needed basis only. **Do not** treat every shrub on the property. This is not necessary or beneficial.

a. New and Regular Customers (All Service Centers)
   Use **2** ounces of our Insect and Disease Slurry (with T-Storm) per 10 gallons of water.

Shrubs that are treated on a preventative basis with every initial and regular service include:

- Viburnum
- **Azalea
- Crape myrtle
- Camellia
- **Gardenia
- Sago
- Pittosporum
- Indian Hawthorne
- Holly
- **Knock-Out Roses

The list above may be expanded depending on the geographical location and specific

GREENUP LAWN, TREE & SHRUB CARE
SERVICE PROTOCOLS

NOVEMBER 2026 LANDSCAPE APPLICATIONS

concerns in the Service Center.
**For the protection of pollinating insects, do not spray the foliage of shrubs that are in full bloom or if pollinators are in the area.

Do not allow pesticides of any kind to contact bodies of water or fish ponds. Many of the materials we use can be deadly to fish.
Set proactive treatments that are necessary to control insect or disease problems that threaten the life of the plant. Make sure to treat the top and bottom sides of the leaf. Inspect all shrubs thoroughly!!

Treat all Crape Myrtles to prevent aphids and Bark Scale(if they still have foliage). Treat the lower trunk (4 feet high and down) and drench all crape myrtles. If the height does not exceed 10 feet, treat the foliage as well.

Specimen Palm Quarterly Injection Service

Nutritional treatment is performed in September, October, or November using Palm-jet. Mix one part Palm-jet to 3 parts water and inject at label rates.

If insects or disease is a concern for a new customer, either Phospho-jet, Ima-jet or Ace-jet may also be performed at the time of initial service. **Do not** mix Palm-jet in the same container with any of the afore mentioned products, it will coagulate/crystalize. See GreenUP Protocol – Specimen Palm Quarterly Injection Service for complete details.

Do a quality job on every application. Do thorough inspections and perfect applications. Always being mindful of the 5 key principles and great communication with our customers to provide long-term sustainable solutions. Perfect measuring, perfect calibration, and perfect walking speed is what is needed for proper applications. All of the above will keep our customers happy to prevent service calls, cancellations, and claims.

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – NOVEMBER 2026 Landscape

Watering instructions for all new and regular LAWN CARE services are: Please irrigate with ¼ inch of water if there is no rain within 24 hrs."

Liquid Applications – Varying grass types Existing Customers and New Customers (Except St. Augustine)

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Liquid Broadcast application of fertilizer and micro-nutrients.	This application will provide potassium, and chelated magnesium, manganese, and iron to enhance and maintain good color and health. It also includes Humic acid and kelp extract to enhance root development.	An improvement in the color and growth of the lawn will be achieved in about 2 to 5 days.	"This application will help enhance and maintain good color and growth. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Liquid Broadcast application for the prevention and control of lawn weeds.	This application is performed for the prevention of annual broadleaf and grassy weeds.	Far fewer weeds will emerge in a turf that has been treated with a pre-emergence herbicide as opposed to one that has not been treated.	"This application will help prevent annual broadleaf weeds and spring emergence of crabgrass." Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Post-emergent weed control applied as a spot treatment using the backpack applicator for low volume application.	We achieve excellent control of practically all types of broadleaf weeds. Sedge can also be treated if it is competing with the turf or if it is a concern for the customer.	The weed control materials we use are a combination of slow and quick acting materials. Affects to the weeds can be seen in about 5 to 7 days. Control is achieved within 3 - 4 weeks.	"The weed control materials applied will greatly reduce the amount of weeds in your lawn within 3 to 4 weeks. A second application may be necessary in severe cases."

Granular Applications – New Customers St. Augustine

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
All New ST Augustine customers all service centers- Dry fertilizer application with pre-emergence weed control.	This application will provide a substantial amount of nitrogen, potassium and minor elements. 65% of the nitrogen will be released slowly while the remainder can be used right away.	The improvement of growth and color may be achieved relatively quickly at this time of the year. We should also see a significant reduction in new weed growth.	"This fertilizer application will help achieve good weed prevention and green-up. Please irrigate with ¼ inch of water if there is no rain within 24 hrs."
Post-emergent weed control applied as a spot treatment using the backpack applicator for low volume application.	We achieve excellent control of practically all types of broadleaf weeds. Sedge can also be treated if it is competing with the turf or if it is a concern for the customer.	The weed control materials are a combination of slow and quick acting materials. Noticeable results will take 5 to 7 days. Control is achieved within 3 to 4 weeks.	"The weed control material applied will greatly reduce the amount of weeds in your lawn within 3 to 4 weeks. A second application may be necessary in severe cases."

MASSEY GreenUP Landscape Services

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – NOVEMBER 2026 Landscape

The following information should be typed into the handheld computer in the General Comments section to provide the customer with information of what we did for their lawn care treatment in November via the printed Service Report in all Service Centers: "Today, I provided a liquid broadcast application of fertilizer, micro-nutrients, and weed control materials to enhance and maintain the color and growth of your lawn and to reduce new weed growth from becoming a problem. I also inspected and treated any existing broadleaf weeds and diseases as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."

The following information should be typed into the handheld computer in the General Comments section to provide the customer with information of what we did for their **NEW** St Augustine lawn care treatment in November via the printed Service Report in all Service Centers: "Today, I provided a granular broadcast application of nutrients to enhance and maintain the color and growth of your lawn. Along with a pre-emergent to reduce new weed growth in the coming months. I also inspected and treated any existing broadleaf weeds and diseases as needed. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment.

Annual and New Aeration Services

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Core aeration	Aeration is the most beneficial service we perform. It stimulates root growth, helps break down thatch, and allows water and air to get to the root system.	Increased root growth, better soil structure, and an improvement in the overall health of the plant. Leaf tissue will look better in the long run but there will not be a visible change in the short term.	"The aeration will help create healthy plant roots and improve the vigor and heartiness of the lawn."
Depending on the soil pH at the customer's home, a broadcast application of a potassium and magnesium source or sulfur to lower soil pH according to our Annual Aeration Protocol.	The potassium application will aid in development of a hearty root system to enhance drought and stress tolerance. Proper soil pH is essential for the availability of soil nutrients. The application of granular sulfur will lower the soil pH when it is too high for the particular turf type.	Improved root growth as well as enhanced cold, drought and stress tolerance. If the soil pH is higher than what required for a particular turf type, the application of sulfur will lower the soil pH and allow bound nutrients to become available to the turf resulting in healthier turf with a darker green color.	"The application of potassium works very well in conjunction with aeration to enhance root growth and improve heat, drought and stress tolerance. Please irrigate with ¼ inch of water if there is no rain within 24 hrs." "The application of granular sulfur will lower the soil pH to enhance the availability of soil nutrients. Please irrigate with ¼ inch of water if there

The following information should be typed into the handheld computer in the General Comments section to provide the customer with information of what we did for their Aeration Service via the printed Service Report: "Today, I inspected your irrigation system, aerated your lawn and took a soil sample to test the soil pH. I also provided a broadcast application of granular potassium and magnesium (or sulfur to lower the pH). This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment."

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – NOVEMBER 2026 Landscape

Shrub Care Customers

What We Use	Benefit of the Service	What To Expect	What to Tell the Customer
Foliage application (as needed) of liquid insect and disease control materials. (New and Regular Customers all Service Centers)	The insect and disease control materials provide both contact and system control of shrub damaging insects and diseases.	Shrubs that either have or are prone to have insect and disease problems are treated. The application will provide control of soft bodied insects such as aphids and lace bugs within 2 to 4 days. Scale insects will require 2 to 3 weeks for control. Fungal leaf	"This application will provide control of existing insects and foliar diseases. Leaves previously damaged will need to be trimmed off to simulate new growth to cover up the damage. Follow-up treatments may be required for certain insect and disease problems."

The following information should be typed into the handheld computer in the General Comments section to provide the customer with information of what we did for their new shrub care treatment in NOVEMBER via the printed Service Report: "Today, I provided a granular application of fertilizer to enhance and maintain the color and growth of your landscape shrubbery. I also inspected and treated any existing shrub damaging insects and diseases. Additionally, I inspected all turf areas for weeds, insects and diseases. This treatment will need to be irrigated with ¼" of water if rain does not occur within 24 hours of the treatment.

Primary Landscape Issues in NOVEMBER

The fertilizer we are applying for regular service in all grass types in All Service Centers is the 0-0-1, which contains Humic acid, seaweed extract, magnesium and chelated iron and manganese. The Humic acid and seaweed extract is proven to enhance rooting. Chelated sources of iron and manganese protect the iron and manganese from becoming insoluble to keep it available to the plant.

Large Patch fungus continues this month. Remember to focus on the conducive conditions for the disease and educate our customers on the best management practices to reduce outbreaks. Look for circular patches of damaged turf with yellow, orange, or purple grass blades on the outside border of the patch. The base of the blade will be rotten and will slide out easily when pulled. Re-growth in the center of the circular patch may give the damaged area a "doughnut" like appearance. The need for supplemental irrigation will begin to decline this month. In the absence of rain, watering once or twice a week is typically sufficient. Provide the customer with the information necessary to water properly.

The pre-emergence applications performed this month are extremely important. These applications will prevent many service calls and extra treatments for broadleaf weeds and crabgrass, which would otherwise be a problem throughout the spring and summer.

Piercing- sucking insects on shrubbery may continue to be a problem before winter sets in. Look for sooty mold to be an indicator. The black mold which feeds on honeydew from the insects can be seen from a distance, informing the observant Inspector and Lawn Specialist to inspect closer for aphids, scales, or mealy bugs.

GREENUP SERVICE PROTOCOLS

What We Do and What to Expect – NOVEMBER 2026 Landscape

Fall is a wonderful time of year for lawn care. Turf and shrubbery thrive without the stress of summer's heat. Leaf growth is reduced slightly, and root growth is enhanced. **This is a great time to propose and sell sod**. Opportunity is everywhere. Our customers and potential customers need our help and expertise. Take advantage of the opportunity. Help people, have fun and sell like crazy. This is a win-win for everyone. So……
SELL, SELL, SELL AND SERVICE, SERVICE, SERVICE! SELL AND SERVICE YOUR BRAINS OUT!

GREENUP SERVICE PROTOCOLS

Frost and Freeze Communication

All Team Members must all be prepared to discuss with our customers what to do and what not to do before and during a frost or freeze; and how to diagnose frost or freeze damage and what to communicate to our customers after it occurs. Good documentation of freeze damage now will be a big benefit in the spring when the full extent of the damage is known. Everyone must understand and communicate clearly to our customers that freeze damage is an act of nature and is NOT covered by our replacement guarantee.

What causes one plant to be damaged from the cold when others are not? Cold injury occurs when the cell walls of the plant rupture- resulting in the loss of moisture in the cell. The plant then dies from desiccation (it dries up). This process is similar to what happens when you put a gallon jug full of water in the freezer with the lid on (if you haven't done it, the ice expands and the jug cracks). When the jug cracks (or the walls of the plant cells rupture) the moisture leaks out as the ice begins to thaw resulting in an empty jug (or a dried out plant). Plants that are cold hardy have the ability to regulate the moisture in the cell to prevent cell rupture. This is analogous to removing the cap from the jug in the freezer or reducing the amount of water in the jug. The ability of a plant to regulate the moisture in its cells varies from plant to plant. Different plants respond differently to cold temperatures.

Why do I have cold injury here and not there? Why is my lawn damaged more than my neighbor's? Many factors such as the availability of moisture in the plant, the slope of the landscape, the moisture in the soil, wind speed and other protection factors like tree cover determine the amount of cold damage that occurs from one area to another. If a plant is dehydrated going into a freeze the damage will be much more severe. Damage will also be more severe at the bottom of a slope since cold air falls and warm air rises. Moist soils are usually warmer than dry soils resulting in less cold injury. Additionally, irrigation water is usually about 70 degrees. Soils watered before a freeze will be warmer than those that are not. Wind can increase or decrease the amount of cold injury depending on just how cold the temperatures get. Wind can keep frost from forming when the temperatures are near freezing or increase the amount of damage caused by desiccation if the temperatures fall far below freezing. Some plants and turf will be protected from frost by coverings such as the canopy of a tree or the side of a home.

Recognizing cold injury can be tricky. The morning after a frost, the grass blades will initially appear darker green and water soaked. Within a few hours, the leaves will begin to get grayish spots. The next day, the grass will be wilted and folding over. Within a few days, it will turn brown. Some areas of the lawn may not turn brown. This is usually due to having a protective covering like a tree canopy or other object keeping the frost from settling on the turf. Weeks later, as the turf begins to recover, some areas will remain brown long after others. This gives the turf a very strange appearance that looks as though someone had dipped a basketball in Round Up (total kill herbicide) and bounced it all over the lawn. These brown areas have been more severely damaged because of small depressions in the turf or soil where the frost and cold air settles for a longer period of time causing the turf in those spots to remain cold longer. The patterns often follow the path that the lawn mower usually travels.

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Annuals and the more tender leaf shrubs will show damage in a similar manner. Some woody ornamentals however may not show damage until many months later. An examination of the trunk will show that the freezing temperatures have caused the bark to crack (remember the water jug analogy). Death to the plant occurs because the bark (or phloem), which transports food that the leaves make through the process of photosynthesis, has been damaged so the root system dies of starvation. The plant does not die sooner because the xylem layer, which transports water from the roots to the leaves, is still intact. Additionally, the damaged wood will be more prone to infection by plant damaging diseases.

What to do to prevent damage from the cold. To reduce the amount of cold injury that occurs, homeowners should irrigate before the frost or freeze making sure to end their irrigation soon enough for the leaves to dry so ice will not form on the leaves. If it is not possible to irrigate with enough time for the leaves to dry before freezing temperatures, it would be better do delay irrigation until warmer temperatures arrive. **Do not irrigate during a freeze**. This practice is beneficial in nurseries and citrus groves only because they are equipped to water non-stop until the ice is melted. If not done properly, this practice can prolong the amount of time that the plants are subjected to the cold temperatures. The ice does not melt as quickly as the air temperatures are warming up.
Cold sensitive plants can be protected with blankets or boxes. The cover must be removed as soon as the temperatures begin to warm up.

What can be done to speed up the recovery? If the lawn was in good health before the frost, there is nothing extra that will need to be done to speed up the recovery. We fertilize on a regular basis with fertilizers that contain slow release nitrogen. There is no need or benefit to apply additional fertilizer. There is already a nitrogen source available in the soil that is just waiting for warm temperatures to begin releasing again. As soon as the weather warms up, the lawn will grow out of the frost injury.

If the lawn has not been serviced, our standard initial service procedures will be very beneficial.

Particular Customer Communication Points:

- When servicing a customer's lawn on a day when it is going to freeze, inform the customer NOT to water during a freeze. Leave the customer a note that says, "Please do not water until after freezing temperatures pass"
- Document and communicate turf and ornamental freeze damage on our customer's properties. Write notes to inform customers of damage that has occurred to their lawn or shrubs. This information will be important to them and the documentation will be beneficial during the spring when the full extent of the damage is known.
- When communicating to a customer about freeze damaged turf or shrubs, which require renovation to repair the damage, inform them that renovation will be needed. DO NOT inform them that "we will work with the lawn until it recovers" when the real answer is renovation. When we tell that to a customer, we make the problem our responsibility.
- When a customer asks what we can do to speed up the recovery, inform them that the regular services that have been done recently and the regular services we will do in the upcoming months help to deal with this situation. Additional fertilization at this time is not necessary or beneficial.

Frost and Freeze Communication

- If the customer asks if they should trim off the freeze damage to their shrubs, suggest that they leave the damage until the spring when the threat of frost or freeze is over. Trimming will stimulate new buds to sprout, which could then be damaged by another freeze.

With so many factors involved in cold injury it can become a real customer service challenge. Hopefully, this information helps you to better diagnose the problem, understand the causes, give good advice to our customers and maybe even prevent some damage to your own lawn.

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Frost and Freeze Communication



Frost damaged grass blades will have burnt, brown tips. Reddish purple grass blades may also be seen. This happens because the cold air causes the green chlorophyll to degrade. Because the green pigment of the leaf has been removed, the other colors of the leaf (that are always there but are covered by the green chlorophyll) become visible. This is also what happens when tree leaves get their fall colors.

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Frost and Freeze Communication

Recovering frost damage in St. Augustine turf



The brown areas have been more severely damaged because of small depressions in the turf or soil where the frost and cold air settles for a longer period of time causing the turf in those spots to remain cold longer. The patterns often follow the path that the lawn mower usually travels.

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Frost and Freeze Communication



Freeze damage done to the bark of an Azalea. This picture was taken in August when the branches began to die.

WEEKLY TRAINING SESSION

Cold Weather Injury

Topic Category: Lawn & Tree/shrub

Recordable Verifiable Training Hours: 1.0 hours

Objectives: This lesson is designed to teach the basics of cold weather injury; what it is, how it happens and how to prevent it.

Length of lesson: Approx 60 minutes.

Materials needed:

- Cold Weather Injury document
- Pre and Post tests.

Training Guidelines:

- Make copies of the tests and training materials for all Team members attending.
- Set up the training area in an area of the office that will minimize disruptions.
- Begin the meeting by defining the training topic and handing out the pre-test
    - Allow a few minutes for Team members to complete the pre-test.
    - Collect the pre-test and hand out the Verifiable training form
- Distribute and review the training materials. Use the Training outline as a guide for key points.
    - Encourage active participation from all Team members
    - Ask probing questions to develop key points
    - Encourage group reading
- After reading and reviewing the article, ask questions to verify the material has been understood.
- Hand out the post-tests. When complete, grade the tests and record the score on the Verifiable Training Record.
- Collect tests and place with the verifiable materials in the Service Center Verifiable Training File.
- Make copies of the Verifiable Training Record and place in each Team member's training file.
- Fax the Verifiable Training Record to the Quality Assurance department @ 407-645-3570.

WEEKLY TRAINING SESSION

Cold Weather Injury

Living in Florida, winter is the season we look forward to as a break from the long hot summer. Temperatures average in the 60's and 70's. Much of the landscape remains green. Typical winter images such as shoveling snow are replaced with frolicking at the beach.





The subtropical climate we live in is enjoyed not only by us, but by many of the plants we grow. Plants such as hibiscus, ixora and bougainvillea thrive in the tropics, but struggle with the weather that winter brings. Even St. Augustine can suffer is the temperatures are cold enough. As these tropical plants are usually our customer's favorites, it is important that we understand what happens to them. Lets take a look at the effects of winter and the problems it brings.

Some of the problems winter brings are:

- Desiccation
- Frost
- Freezing

Desiccation

Plant desiccation is the drying out of the plant. This is more of an issue in winter due to the cold air. Cold air itself is dry. All things, including air, contract when they are cooled. As the air contracts, it becomes more dense and can not contain as much moisture as warm air.

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Cold Weather Injury

You can see this process occur whenever a cold front approaches (Figure 3). It will usually rain. As the cold air approaches, it pushes the warm, wet air up. Thunderstorms develop as the warm air rises. The temperature at the top of the thunderstorm is colder, causing it to rain. This is because the cold air acts like a sponge wringing out the excess water vapor.

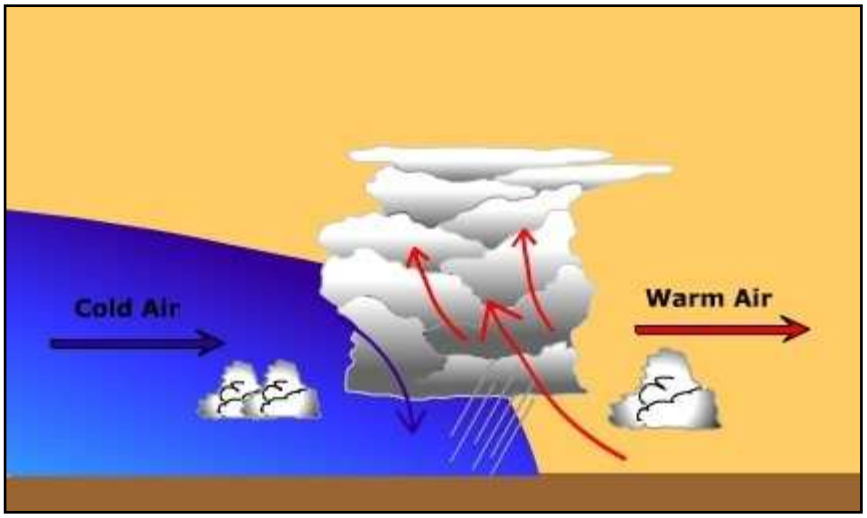


Figure 3. A cold front.

The good news is the front brings much needed precipitation to the plants. The bad news is the air that follows is very dry. The change from warm, moist air to cool dry air can be very sudden, usually occurring over the course of a few hours. This is faster than most plants can react. The result, you have plants that have gone from one extreme to another. The breathing holes, or stoma, are wide open allowing the plant to dry out further.

The other problem with winter desiccation is that it is often not easily noticeable. The typical signs of drought may not show themselves. The wilting and curling of leaves may not occur at cooler temperatures. Without these signs, our customer may not see a need to water. This will push the plant into severe drought stress. The damage may not show itself until the spring green up.

How do we overcome this? *Regular watering*. Even in the dead of winter when the plants are dormant. Water once a week, applying 1" of water per zone. This will provide the moisture needed by the plants to make it through the winter.

This may create the conditions needed for some diseases, such as brown patch to form. The chance of disease is outweighed by the needs of the plant however. We can manage a disease should it appear. It is better to err on the side of caution and ensure the conditions needed by the pant are there, even if there are the same conditions needed by a disease.

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Cold Weather Injury

Frost

Frost is the formation of ice crystals on a surface due to rapid cooling (Figure 4). If the temperature on the surface is above freezing, dew will form. If the temperature of the surface is at or below freezing, frost will form. We usually see frost in isolated pockets on the lawn or on the surface of cars and rooftops. These places have cooled faster than the surrounding areas. This is evident in the patterns frost will create in a lawn (Figure 5). The brown pattern shows where the temperature was cool enough to form the frost.



Figure 4. Frost.



Figure 5. Frost damage on turf grass.

Desiccation plays a role here as well. In order for water to freeze, it must lose an enormous amount of energy. The more water present, the more energy there is to lose before freezing takes place. Our exposure to freezing temperatures is usually limited to a few hours. If the plant is fully hydrated, it will take quite some time before the water loses enough energy to freeze; usually longer than the exposure to freezing temperatures. As a result frost will not form. Should a plant be dry, however, very little water is present and the time for energy loss is shortened, resulting in quick freezing with frost forming early.

So again, the best protection is a well watered plant. Many people believe that watering during a frost will protect the plant from damage. It will. But in order for it work, the plant must be watered continually during the time when frost can form. This works because moving water has more energy than still water, making it harder to freeze. The down side to this method is that the plants must be continually watered. Most irrigation systems can only water one zone at a time. Should the timer move on the next zone, the zone that was just watered will chill and frost can occur. This type of protection is best left to farmers who have the equipment to do this properly. Not to mention that our customers probably will not want to stay up all night babysitting their plants!

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Cold Weather Injury

You can protect a plant from frost by covering with fabric. The fabric will act like a blanket, keeping the plant's surface slightly warmer. In our mild winters, this can be enough to prevent the formation of frost. DO NOT use plastic as it will transfer heat easily if it is in contact with the plant. Plastic is only effective if it is tented over the plants. Always remove the covering when the sun rises.

Should frost damage occur, inform our customer that the damage is superficial and will grow out with the return of warm weather. They should not rake out the brown grass or prune off the damage material as it may act as a blanket protecting the plant from future frosts. Wait until the return of spring before performing any corrective pruning.

Freezing

Freezing is much more severe than frost. Frost only affects the surface of a plant where freezing damages the interior of the plant. This damage is caused by the formation of ice inside the plant, not the cold temperatures.

When matter is chilled, it contracts and becomes denser. This is true for everything from molecules to mountains. There are a few exceptions to this. Water is one of those exceptions. Just before water freezes, it suddenly expands. This is why you can fill an ice cube tray so no water flows over the tops of the individual cubes and pull out a solid tray of ice later on. This is also why ice floats in water, because it is less dense than the surrounding water.

Great, but what does this mean to me? Well, imagine that water is in a sealed container. The container then froze. As the water freezes it expands, and the container bursts. This is what happens inside a plant cell when it freezes. As the water expands, the cell walls burst, killing the cell. Should enough cells be killed, sections of the plant can be decline. If the crown of the plant is frozen, the entire plant may die.



Figure 6. Frozen plants.

Many plants can survive freezing temperatures. All of the plants that grow in the north are able to be frozen and continue living year after year; while a hibiscus will die after just one night of freezing temperatures.

Why and some plants freeze and others not? The answer is in their physical make up. Those plants that normally grow in freezing climates prepare themselves for the winter. They reduce the amount of activity within the plant, they drop their leaves and go dormant. But more importantly, they transfer the water from

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Cold Weather Injury

inside their plant cells to the spaces between the cells. Here if the water freezes and expands, it squeezes the plants cells rather than bursting them. With the onset of spring, the plant transfers the water back into the cells and resumes normal activity. Most tropical plants do not have the ability to move the water. This makes them susceptible to freeze damage. This is why a hibiscus will die back after a freeze when the holly planted next to it does well.

The best way to protect against freeze damage is to follow the first of the Five Key Principles. It is plant an adaptive plant. If you live in a region that typically gets many freezes per year, do not plant those plants that are susceptible to freezing.

We do not always have a say in what is planted in the landscape. Should you have plants that can be damaged by an upcoming freeze; they will need to be protected. Some steps that can be taken are:

- Make sure the plants are watered well before the onset of cold weather. Remember, cold air and dry plants means death!
- Cover them with a cloth wrap, paying special attention to the crown of the plant. Wrap exposed trunks with burlap or cloth. This will insulate the crown and cambium from the cold air. Cover the plant with a cloth and drape it to ground.
- Place a light, Christmas lights work well, inside the sheet. Make sure the bulb does not touch any plant tissues. Leave the light on throughout the night. The bulb will give off heat, keeping the air inside the sheet warmer than the outside air. In marginal freezing temperatures, this can be enough to protect the plant.
- If the temperatures are going to be below freezing for more than 12 hours or well into the twenties, expect damage. In these situations, there is no way to provide effective protection.

Plants that are damaged will look black and greasy. This is the plant cell contents oozing out of the plant. They will quickly brown and wilt (Figure 7 & 8).





Figures 7 & 8. Freeze damage.

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Cold Weather Injury

Like in frost damage, it is best to not prune them until spring. Pruning can stimulate new growth that is even more susceptible to cold injury. In some cases, a plant may look dead, but will come back in the spring. It is best to let them be and wait for spring.

Some freeze damage is not easily identifiable. Sometimes the damage takes place in the bark of the plant. This will cause cracks to form in the bark (Figure 9). The plant may grow normally for many months with the cracks, but the cracks are an entrance for disease to invade the plant. These diseases may take a while for them symptoms to show themselves. It is not uncommon to be fighting a vascular disease in the summer that is the result of damage that occurred during the winter. Since prevention is still the best protection, inspect the plant thoroughly for any cracking after a freeze. If cracking is found, prune out the damaged tissue in the spring.



Figure 9. Cracks in the bark due to freezing.

Another concern with freezing is late season cold fronts. In March and April plants have begun their spring greenup. A freeze at this time exposes tender new growth to cold temperatures. Even plants that can tolerate cold weather are not longer protected as they have moved the water back into the cells anticipating the spring flush.

Never walk on a lawn that is frozen. The weight of you and any equipment will crush the cells of the grass, causing more injury than the freeze alone. Always wait until the lawn has thawed before performing service. Be aware that the shaded areas of the lawn may remain frozen long after the sunny areas have thawed.

Remember, the best protection is prevention. Follow the five key principles for the plants, cover them when a frost is imminent and wrap them when a freeze is forecasted. Should damage occur, wait for spring and prune then. If the damage can not be tolerated, plant something else that will survive your particular climate. If you are not sure what plants will be damaged by a cold event, think tropical. Tropical plants are more susceptible to the colder weather. Look at what is growing in your area year in and year out. These plants are the ones to stick with for years of reliable performance.

WEEKLY TRAINING SESSION

Cold Weather Injury

Pre/ Post Test

1. What are the three concerns of cold weather? _____
   _____
   _____
2. Frost occurs at temperatures between 30 and 40 degrees. T or F
3. The best remedy for freeze damage is to prune it off immediately. T or F
4. Rain in the winter is a sign of an approaching cold front. T or F
5. Dry plants are less susceptible to cold injury than watered plants. T or F
6. Frost cracks are a problem because they allow _____ to invade the plant.
7. How does freezing kill a plant? _____
8. A freeze in December is more damaging than a freeze in March. T or F
9. The best protection from freeze damage is _____
10. Winter damage may not show itself until spring. T or F

WEEKLY TRAINING SESSION

Cold Weather Injury

Pre/ Post Test

1. What are the three concerns of cold weather? _desiccation_____
   _frost_____
   _freezing_____
2. Frost occurs at temperatures between 30 and 40 degrees. T or (F)
3. The best remedy for freeze damage is to prune it off immediately. T or (F)
4. Rain in the winter is a sign of an approaching cold front. (T) or F
5. Dry plants are less susceptible to cold injury than watered plants. T or (F)
6. Frost cracks are a problem because they allow __disease_____ to invade the plant.
7. How does freezing kill a plant? _ruptures plant cells_____
8. A freeze in December is more damaging than a freeze in March. T or (F)
9. The best protection from freeze damage is _planting a plant that can tolerate freezing temperatures__
10. Winter damage may not show itself until spring. (T) or F

GREENUP SERVICE PROTOCOLS

Equipment Preparation for Freezing Temperatures

When freezing temperatures are going to occur in your area, make sure your equipment is prepared or damage will occur.

To prepare the pump for freeze you must open and remove the filter cap, open all agitator valves, remove or open the valve at the end of the hose. Doing this will allow the ice room to expand without damage to the pump casing, seals or hoses.

Remove all injectors and store them inside.

Bring the backpack sprayers indoors to prevent them from freezing.

If you do not start the diesel trucks properly after the freeze, serious problems will result. It must be done in the following manner.

- Turn the ignition key to the “on” position and wait for the Glow-Plug light to turn off. Based on Temperature this will take 2-10 seconds.
- Start the engine
- Allow the vehicle to idle. The automatic warm-up system will increase idle speed for 30 seconds to 2 minutes. Once idle drops, the vehicle is safe to drive.

The engine will likely smoke a little once started. When the truck starts, **do not** rev the motor (a diesel engine should never be revved). The cold oil will blow the oil filter off the truck or at the least create oil leaks.