Factors Contributing to Major Problems in St. Augustinegrass Lawns, 2006-2007

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Loss of St. Augustinegrass in lawns throughout Texas was observed during the summer and fall months of 2006, with the problems continuing into the spring months of 2007. While other turf grasses growing in home lawns have also been affected during this same time period, St. Augustine lawns appear to have been hit the hardest.

Listed below are some of the major problems in the St. Augustinegrass lawns (spring 2007).

1. Dead areas of St. Augustine, from small, irregular dead spots to the entire lawn.
2. Yellow St. Augustine.
3. Brown patch.
4. Slow spring transition.
5. Heavy infestation of winter weeds.

Below is a list of potential problems that could have contributed to the loss of St. Augustinegrass during the 2006 season and continuing into spring of 2007. In some cases, loss of the St. Augustinegrass could have been from more than one factor.

Major contributors to loss of St. Augustinegrass in 2006 through spring of 2007:

1. Extended drought conditions in 2006, followed by several days of freezing temperatures during the winter months of 2006 – 2007.
2. Take-All Root Rot
3. Nigrospora Stolon Rot

Drought Conditions/Freezing Winter Temperatures

For many areas of Texas, 2006 was one of the driest years on record. The drought conditions along with the high summer temperatures placed a tremendous stress on all grasses, but especially turf grasses such as St. Augustinegrass and centipedegrass. Also, in many areas of the state, cities implemented water restrictions that limited the number of days homeowners could water as well as the time homeowners could water their lawns. Due to these restrictions, many homeowners were unable to either properly water their lawns or in some cases just gave up watering. Most St. Augustinegrass lawns and especially lawns not properly watered during the drought conditions went into the winter months in a stressed condition.

During the winter months of 2006-2007, most areas of Texas received several days of freezing temperatures. Depending on which area of the state you live in, nighttime temperatures dropped down into the low teens to high twenties on several occasions. A

healthy St. Augustinegrass plant can normally survive temperatures well into the low twenties without any problem. However, because many of these lawns were stressed from the drought conditions of 2006 and/or disease problems, they were more susceptible to the freezing temperatures.

Stress from drought conditions followed by freezing temperatures was a major contributor to loss of St. Augustinegrass in some lawns, especially in the northern areas of the state where St. Augustinegrass is grown.

Take-All Root Rot : fungus Gaeumannomyces graminis var. graminis

Take-All Root Rot (TARR) has been a major disease problem in Texas for many years now. This disease was very active during 2006 and caused major problems in St. Augustinegrass lawns. From early observations, it looks like the TARR will be a major problem in the spring of 2007. Note, Take-All Root Rot has been observed attacking all the major warm season turf grasses used in home lawns, but it is particularly a problem in St. Augustinegrass lawns.

The fungus causing TARR attacks the plants root system primarily in the fall and spring months when soil temperatures are in the 60 to 65° F range. Any factor that causes the St. Augustinegrass to become weakened or stressed will enhance the potential for TARR to become active. The drought/heat conditions of 2006 definitely placed a stress on all lawns. The disease weakens the root system or if severe enough will kill the entire root system thus causing loss of the St. Augustinegrass. TARR can usually be identified by small to large irregular patches of dead St Augustinegrass or in severe cases loss of the entire lawn. In many cases, there are yellow (chlorotic) leaves in or around the affected areas of the lawn. Close observation of the affected areas reveal St. Augustinegrass plants with brown leaf blades that are firmly attached, brown stolons (runners) and a shortened root system that is dark brown to black in color.

Achieving successful control of this particular disease can be difficult at best. Applications of approved fungicides may help, but are not always successful. The fungicides are generally most effective when applied in the fall and/or spring when the disease is most active. Another treatment for TARR that has shown some success is topdressing affected areas with Sphagnum Peat Moss. Apply two bales of the 3.8 cu.ft. bales of Sphagnum Peat Moss per 1,000 sq.ft. The acidic affect of this peat moss is thought to provide an improved growing medium for the St. Augustinegrass stolons to grow in and recover. The Sphagnum Peat Moss works best when applied in the spring and fall when the disease is most active. However, it has also been shown to be effective in some cases when used in the summer months. For the peat moss to be effective, it is important to thoroughly water in the peat moss once it is spread out over the lawn. If the peat moss is not watered in properly, it will not work. Like the fungicide treatments, topdressing with Sphagnum Peat Moss does not always provide control of the TARR.

Nigrospora Stolon Rot: fungus Nigrospora sphaerica

Nigrospora Stolon Rot was first identified in St. Augustinegrass lawns during the summer of 1980. This disease attacks the stolon area of the plant, usually next to a node. Nigrospora Stolon Rot will eventually girdle the stolon, which stops the movement of water and nutrients

to the leaves of the plant. The leaves soon wilt, turn yellow and then die. Until the summer of 2006, Nigrospora activity had not been identified as a major problem. However, it was observed in numerous lawns in 2006 and has been seen in a couple of lawns already in 2007.

Nigrospora Stolon Rot generally appears as irregular dead spots throughout the lawn and will often exhibit chlorosis (yellowing) of leaf blades in the affected areas. Close observation of the affected plants reveal lesions on the stolons, brown leaf blades that are firmly attached, brown stolons next to lesion, and roots that are brown in color. Note, unlike TARR, roots of plants affected by Nigrospora are not shortened and do not turn dark brown to black in color. The fungus causing Nigrospora Stolon Rot is associated with high temperatures and drought conditions, both which occurred in many areas of the state in 2006. At this time there is no fungicide that is labeled for the control of Nigrospora Stolon Rot. In 1980, Daconil was the only fungicide that demonstrated good activity on this fungus. However, Daconil is no longer labeled for use on turfgrasses in residential lawns. It can be used on St. Augustinegrass growing in lawns in commercial sites.

Brown patch: fungus Rhizoctonia solani

Brown patch can be a problem in most warm season and some cool season turfgrasses, but is especially a problem in St. Augustinegrass and centipedegrass lawns. The fungus is primarily a problem in warm season turfgrasses in the fall and early winter months when nighttime temperatures are below 70° F and daytime temperatures are in the 75 to 85° F range. Brown patch can be active in the spring and it has been reported to be a problem in several areas of Texas in the spring of 2007. The above rainfall conditions and mild temperatures have most likely resulted in brown patch being active in the spring of 2007.

While brown patch doesn't normally kill the affected turfgrass plants, it can weaken the affected areas and thus make them more susceptible to other stress problems such as freezing temperatures and drought conditions. Close observations of the affected area reveal leaves with rotted leaf sheathes, stolons that are still green to white in color and roots that still maintain a white to light brown color. Note, due to the rotting of the leaf sheath, the leaf blade can easily be pulled away from the stolon. This is very characteristic for brown patch activity in grasses such as St. Augustinegrass and Centipedegrass.

Note: Always read the label before purchasing any fungicide to make sure it is labeled for the disease you are trying to control.

Recommended Cultural Practices for St. Augustine grass Lawns:

Using best management practices for maintenance of St. Augustinegrass lawns is one of the best things homeowners can do to prevent stress to their lawns. Remember, many of the problems associated with loss of turfgrass in St. Augustinegrass lawns in 2006 – 2007 were associated with stress to the lawns. While we can't do anything about the weather, managing the St. Augustinegrass lawn properly will help to reduce the loss of turfgrass plants during weather related stress conditions.

Fertilization Program:

The recommended rate of nitrogen for St. Augustinegrass growing in full sun is 3 to 4 pounds of actual nitrogen per 1,000 sq.ft. per year. For shade areas, the recommended rate of nitrogen is 1 to 2 pounds of actual nitrogen per 1,000 sq.ft. per year. The rate of phosphorus and potassium should be determined by soil testing.

Apply the first fertilizer application after the lawn has been mowed a couple of times in the spring. Then, for grass growing in full sun, fertilize once in the summer and again in the fall. For lawns growing in the shade, fertilize once in the spring and once in the fall for best results.

Mowing Program:

For St. Augustinegrass growing in full sun, mow at a 2.5 to 3.5 inch. For shade lawns, mow at a 3.0 to 3.5 inch mowing height. Keep mower blades sharpened to prevent shredding or tearing of leaf tips. Grass clippings should be returned to the soil and not bagged.

Irrigation Program:

A general recommendation is to apply approximately 1.0 inch of supplemental irrigation water per week in the spring and fall months when adequate rainfall does not occur. In the heat of summer, apply approximately 1.5 to 1.75 inches of supplemental irrigation per week if adequate rainfall does not occur.

Water conservation is a major problem in most areas of Texas. Many homeowners over water their lawns, thus not only wasting water, but causing some of the major disease problems such as brown patch. Homeowners should conduct an irrigation audit of their irrigation system to make sure water is being applied as uniformly as possible.

Herbicide Program:

St. Augustinegrass is not as tolerant to herbicides as most of the other warm season turf grasses. Over application or misapplication of herbicides to the St. Augustinegrass lawn can cause stress to the lawn, thus making it more susceptible to problems such as TARR.

Pre-emergent herbicides:

1. Skip the spring application of pre-emergent herbicides. While a healthy St. Augustinegrass lawn can tolerate this application, if the St. Augustinegrass is weak, then the application of a spring pre-emergent application can cause injury or loss of grass. The fall application of a pre-emergent herbicide should not cause a problem and is generally recommended.
2. Avoid the application of an herbicide in shade areas of St. Augustinegrass lawns.
3. Use post-emergent herbicides with caution on St. Augustinegrass lawns. One of the most critical times to use post-emergent herbicides with caution is in the spring transition period. The St. Augustinegrass is generally most susceptible to herbicide injury at this time of the year.