

Gray Leaf Spot (Blast) of Annual Ryegrass

By: Basil Bactawar, CED/Agent, Union County

Introduction

Ryegrass is one of the most valued crops used for winter and spring grazing. It is grown mainly on flatwood soils or on the heavy sandy loam soils that are found in Northeast Florida. One of the main problems with this crop is gray leaf spot or blast disease that can kill a stand of ryegrass within 48 hours, hence the name blast. Consequently, it is necessary to check the fields when growing ryegrass especially during early fall when temperatures and relative humidities are ideal weather conditions for the development of the disease. If gray spot disease develops on early planted fields, then the amount of forage available is reduced, thereby reducing the amount of winter grazing time.

What are the conditions that are conducive to the development of this disease?

The occurrence of a plant disease is dependent on three major conditions. These are:

- 1) A virulent pathogen
- 2) Weather conditions
- 3) A susceptible host

This disease is caused by a fungal pathogen called *Pyricularia grisea* that infects and kills the leaf blade. It first appears as leaf spots or blight. The leaf spots tend to be round or oblong in shape. The color of the spots vary from tan to grey with purple or brown borders. The leaves become distorted and eventually collapse. Dry leaves tend to develop a shape that looks like a fish hook at the leaf tip. This fungus attacks annual ryegrass during all stages of its development from seedlings through maturity. The fungus survives the winter in infective spores that can drift from different sources. Two varieties that are susceptible to gray leaf spot are Jackson and Marshall.

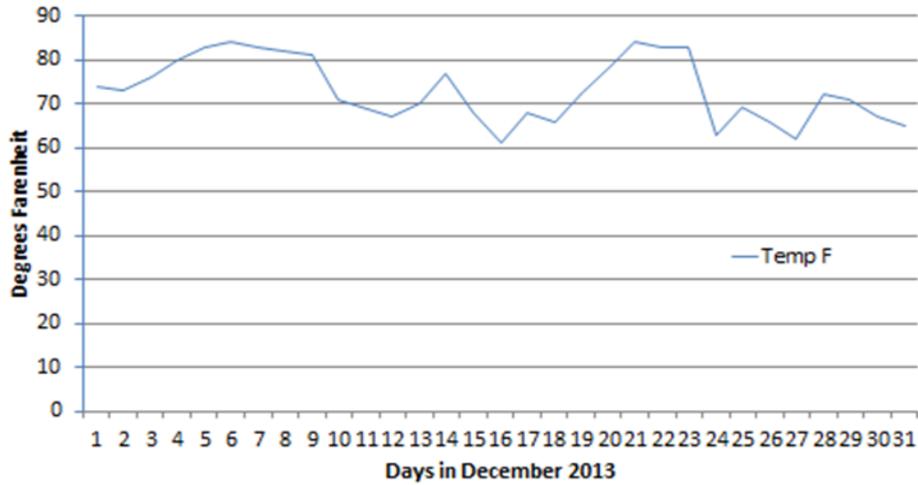


Photo courtesy of: Basil Bactawar

Gray leaf spot disease is likely to develop if the plants are drought stressed or the environmental temperature is between 70°–95° degrees and relative humidity is above 80%. This was the case of a field in Worthington Springs that developed this disease in December 2013.

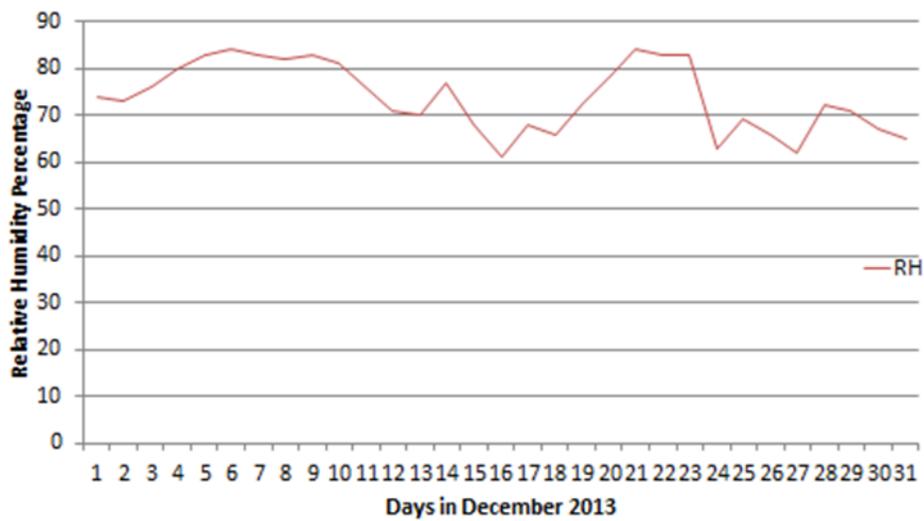
Figure 1. shows the temperature was above 70°F during the first week in December. Figure 2. shows the relative humidity was above 80% during the same period.

Figure 1. Temperature at Worthington Springs, Florida



9

Figure 2. Relative Humidity at Worthington Springs, Florida



10

These environmental conditions were ideal for the development of the disease. A visit to the annual rye gas field showed signs of the disease. An analysis was done by the University of Florida Plant Pathology Laboratory that confirmed the disease was gray leaf spot. The weather forecast for December 18th to December 24th suggested that the temperature in Worthington Springs, Florida would be higher than 70°F, a condition that is suitable for the continuation and spread of the disease. In view of this forecast of temperatures higher than 70°F for the week before Christmas, the producer was advised to allow his cattle to graze the ryegrass lightly. By doing so some of the forage was used by the cattle. Ryegrass can be grazed when plants are about 6-8 inches in height. Animals can graze it as low as 2-4 inches which would allow sufficient leaf area remaining so that the leaves can grow back after grazing. Normally when the season gets cooler, the disease goes away.

Cultural Control Methods

- Gray leaf spot is driven by wet and warm conditions. It is advisable to avoid early planting as the best option. However, some producers prefer to plant cold tolerant ryegrass early in the fall so that the plants are fully established before the arrival of the cold temperature of the season.
- The use of excessive nitrogen fertilizers when the symptom of the disease is present can worsen the situation.
- Annual ryegrass that has 3-6 inches of growth can be used for light grazing even if blast is present. This helps to remove older leaves and allows light to penetrate the canopy.
- The decision to graze infected fields should be guided by weather forecast temperatures and humidity, If the weather forecast predicts temperatures about 70°F for the week, it may be advisable to lightly graze the forage if early symptoms of the disease can be seen.
- If you have to irrigate fields, do so near sunrise and avoid evening irrigation.