FOREST HEALTH
PROGRAM

GEORGIA FORESTRY
COMMISSION

Longleaf Pine Mortality – Rhizoctonia blight

Observed In Three year old Longleaf

Introduction

In October of 2009, a Georgia Forestry Commission forester observed three year old longleaf pine seedlings with discolored, soft and wilting needles, dead terminal buds, and near total mortality in a portion of a field heavily overgrown with partridge pea. Partridge pea is planted with native warm season grasses (NWSG) under guidelines of the Conservation Reserve Program. The partridge pea was well over four feet tall in most areas and had overtopped the desired longleaf seedlings possibly creating a microclimate conducive to the growth of unwanted fungi. Significant mortality was observed over about ten acres of this fifty acre plantation and this correlated directly with the overgrown portions of the field.

In December 2009, symptomatic pine samples were collected from the Bulloch County, Georgia site and sent to Michelle Cram, Plant Pathologist with the USDA Forest Service in Athens, Georgia. The samples came back positive for *Rhizoctonia*. In the meantime similar symptoms appeared in longleaf stands in Jones and Wheeler Counties which also came back positive for *Rhizoctonia*. Rhizoctonia blight is typically published as a fungal disease pathogen causing blight or mortality in seedling stock of pine nursery beds. The terms "Longleaf Seedling Blight or Damping Off" are often used as common names for this disease.

Symptoms

Field symptoms appear to be consistent for a tentative identification of Rhizoctonia blight. The symptoms appear as a progression of mortality from grass stage seedlings to seedlings producing growth candles up to three feet high. The following describes some of the symptoms observed in the field:

1. Needles do not stand erect and are wilted with a fine or soft feel to the touch. Normally longleaf needles are coarse to the touch similar to a horse's mane.

2. Terminal buds show signs of dieback and are similar to damage caused by pine tip moth. There is a distinct line of necrosis in the terminal bud and in some samples we found what appears to be large hollow pith down the terminal bud indicating limited insect damage.

3. There appears to be a progression of mortality from wilting needles to dieback of the terminal bud to complete mortality of seedlings. Normally a three year old longleaf seedling will not abruptly die (Refer to the third picture below).

To date *Rhizoctonia* has been confirmed in three year old Longleaf pine stands in Bulloch, Wheeler, and Jones Counties in Georgia. In each stand infected with Rhizoctonia blight, we found localized areas of partridge pea re-seeding so prolifically that it became a dense mat competing for water and nutrients and overtopping the longleaf seedlings; shading the forest floor restricting available sunlight possibly creating a microclimate conducive to the growth of unwanted fungus.

Dense stand of partridge pea

Management Recommendations:

1. Use very low rates or eliminate partridge pea in your native warm season grass planting mix.
2. When localized competition becomes an issue, rotary mow the "worst" portions of these fields in late spring or early summer before the partridge pea has time to cover the newly established seedling.
3. When replanting after a loss from Rhizoctonia blight, scalp along the existing rows, establish new longleaf seedlings prior to February 15th, and rotary mow between the rows during late spring to early summer to control overtopping and to inhibit reseeding.

Contact us

We are documenting occurrences of Rhizoctonia blight across the state of Georgia and in the Southeast United States; more research is needed on this problem. If you find longleaf seedlings with these symptoms please contact your Regional Georgia Forestry Commission Forest Health Staff or contact Chip Bates, Forest Health Specialist, Southeast Georgia, 912.681.0490, cbates@gfc.state.ga.us.