Diseases of Cotton

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SEEDLING DISEASES

- PRE-EMERGENCE DAMPING-OFF
- POST-EMERGENCE DAMPING-OFF
- SORESHIN
POSTEMERGENCE DAMPING OFF
SEEDLING DISEASE

SORESHIN AND DECAY CAUSED BY RHIZOCOTONIA SOLANI
Cotton: Blackened root caused by Thielaviopsis basicola. PHOTO: T. Isakeit, Texas A&M
THE BEST MANAGEMENT FOR SEEDLING DISEASE:

WAIT UNTIL SOIL TEMPERATURE IS 65° F. BEFORE PLANTING
WHARTON: SOIL TEMPERATURE

3” - AVERAGE OF SIX YEARS

65 °F: SOIL TEMPERATURE FOR PLANTING
FUNGICIDE SEED TREATMENT

RIGHT SIDE: NO TREATMENT, DAMPING-OFF

LEFT SIDE: FUNGICIDE-TREATED SEED
COTTON SEEDLING DISEASE

SEED TREATMENTS ALONE MAY NOT BE ENOUGH WHEN DISEASE PRESSURE IS HIGH BECAUSE OF:

- LARGE AMOUNT OF RESIDUE
- COOL, WET WEATHER
COTTON SEEDLING DISEASE
COTTON SEEDLING DISEASE

INCREASED IN THE PRESENCE OF FRESHLY-KILLED COVER CROP
IN-FURROW FUNGICIDE APPLICATION:
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FOR MORE INFORMATION:

Http://ipm.tamu.edu/crops/pubs/seedling_diseases.html
Cotton root rot (Phymatotrichopsis omnivora). Photo by Tom Isakeit, TAEX, Weslaco, 1995
PHYMATOTRICHOPSIS (COTTON)
ROOT ROT:

AERIAL PHOTO OF COTTON FIELD ON CENTER PIVOT IRRIGATION, TAKEN WITH INFRARED FILM, SHOWING THE CIRCULAR PATTERN (DARK AREAS) OF DISEASE DEVELOPMENT.

PHOTO COURTESY OF CARLOS FERNANDEZ
PHYMATOTRICHOPSIS (COTTON) ROOT ROT:

WILTED PLANT FLANKED BY TWO DEAD PLANTS
PHYMATOTRICHOPSIS (COTTON)
ROOT ROT:
PHYMATOTRICHOPSIS (COTTON) ROOT ROT:

AN EARLY SYMPTOM ASSOCIATED WITH THE INITIAL WILT IS THE PRESENCE OF WHITE MYCELIA ON THE LOWER STEM
Mycelial strands (arrow) of Phymatotrichopsis omnivora on lower stem and taproot of cotton. Photo by Tom Isakeit, TAEX, Weslaco, 1994
PHYMATOTRICHOPSIS (COTTON) ROOT ROT:

DISTINCTIVE CRUCIFORM BRANCHING OF HYPHAE
PHYMATOTRICHOPSIS (COTTON)
ROOT ROT:

Spore mat (fresh) of Phymatotrichopsis omnivora on soil surface. Photo by Tom Isakeit, TAEX, Weslaco, 1994
PHYMATOTRICHOPSIS (COTTON) ROOT ROT:

Spore mat (dried) of Phymatotrichopsis omnivora on soil surface. Photo by Tom Isakeit, TAEX, Weslaco, 1994
PHYMATOTRICHOPTOPSIS (COTTON) ROOT ROT:

STRANDS OF THE FUNGUS (LEFT PHOTO) AND SCLEROTIA OF THE FUNGUS (RIGHT PHOTO) IN SOIL. PHOTOS COURTESY OF CHARLES KENNERLEY
RENIFORM NEMATODE:

THREE FEMALES ATTACHED TO A SMALL ROOT

PHOTO CREDIT: D.C. NORTON
RENIFORM NEMATODE:

Reniform nematode - Robison field
6/13/01 1900/500 cc
RENNIFORM NEMATODE:
RENIFORM NEMATODE:

Cotton: Field symptoms of reniform nematode. Photo by Tom Isakeit, TAEX, Weslaco, 1993
RENIFORM NEMATODE:
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RENIFORM NEMATODE:

Cotton: Symptom of reniform nematode. Photo by Tom Isakeit, TAEX, Weslaco, 1995
RENIFORM NEMATODE SAMPLING:

2 & 5: AREA OF POOR GROWTH

9: OTHER SOIL TYPE

20-30 CORES FROM 10 ACRE BLOCK
RENIFORM NEMATODE:

POPULATION_THRESHOLDS

PREPLANT: 1,000 JUVENILES/PINT

FALL SAMPLE: 5,000 JUVENILES AND_ADULTS / PINT
RENIFORM NEMATODE: CONTROL

* PREVENT NEW INFESTATIONS BY CLEANING EQUIPMENT

* 1- OR 2-YEAR ROTATION WITH CORN, SORGHUM, RICE, RESISTANT SOYBEAN VARIETIES

* WEED-FREE FALLOW
RENIFORM NEMATODE:

TEMIK OR TELONE LIMITATIONS

* HOLD POPULATIONS DOWN FOR SIX WEEKS ONLY

* CHEMICALS HAVE LIMITED MOVEMENT IN HEAVY SOILS

* NEMATODES CAN BE FOUND SEVERAL FEET DEEP
PREMATURE DEFOLIATION:
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* CAUSE IS NOT KNOWN
* WIDESPREAD, MANY VARIETIES
* FOLIAR PATHOGENS: MINOR
* K DEFICIENCY?
  - WATER IMBALANCE
  - STRESS OF FRUIT LOAD
FUSARIUM WILT:
FUSARIUM WILT:
FUSARIUM WILT:

VASCULAR DISCOLORATION SEEN WHEN STEM IS CUT
ROOT KNOT NEMATODE:
ROOT KNOT NEMATODE:
SOUTHWESTERN COTTON RUST:
SOUTHWESTERN COTTON RUST:
RUST ON GRAMA GRASS:
RUST ON GRAMA GRASS:
VERTICILLIUM WILT:
VERTICILLIUM WILT:

VASCULAR DISCOLORATION SEEN WITH CUT STEM
PHYMTOTRICHOPTOPSIS VS. VERTICILLIUM:

PHYMTOTRICHOPTOPSIS ROOT ROT

VERTICILLIUM WILT
BACTERIAL BLIGHT:
BACTERIAL BLIGHT:
BACTERIAL BLIGHT:
BACTERIAL BLIGHT:
BACTERIAL BLIGHT: