SOIL BORNE DISEASES

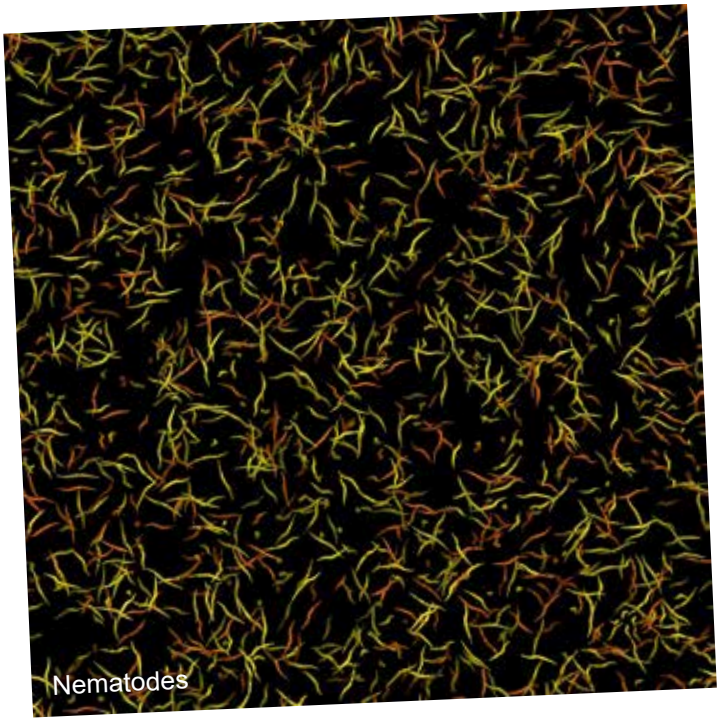
Soil-borne diseases are a major challenge for agriculture, particularly in the Northern Territory, where a range of soil types and climates can create conditions that are favourable for the development of these diseases.

In soils, one teaspoon of topsoil can contain around one billion individual microscopic cells and around 10,000 different species. Soil is alive with microbial activity and not all of them are favourable, thus there are a number of soil-borne diseases affecting Northern Territory farmers. These diseases could be bacterial in nature as in the case of Bacterial Wilt, which is a disease of the vascular tissue. Rhizoctonia is a fungi that invades and infects the roots and stems of plants.

Soil Borne diseases can cause a range of symptoms, including wilting, stunted growth, and reduced yields or in many cases death in plants. Soil pathogens can persist in the soil for long periods and are capable of infecting a wide range of crops grown in the Norther Territory.

Soil diseases are not limited to affecting plants. Melioidosis affects humans and is a life-threatening bacterial disease found in the soil of warm, humid areas of the Northern Territory.

For more information on Melioidosis visit: https://nt.gov.au/wellbeing/health-conditions-treatments/bacterial/melioidosis



Nematodes

Banana seedlings infected with Fusarium wilt disease

Root knot nematodes attack in Okra

For more information: 08 8942 8300 info@territorynrm.org.au www.territorynrm.org.au

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SOIL BORNE DISEASES

Managing soil-borne diseases

Crop rotation - helps to break the cycle of disease by planting non-host crops in infected fields. This can reduce the population of pathogens in the soil and limit their ability to infect new crops. Planting disease-resistant varieties – this makes crops less susceptible to soil-borne diseases.

Fungicides

Fungicides can be effective in the control of soil-borne diseases.

It is important to understand how chemical control methods work as they can have other impacts on your soil health.

Chemical control

Chemical control should not be the sole control method for soil pathogens, as they can be harmful to non-target, organisms and can contribute to the development of fungicide-resistant pathogens.

Building healthy soils

Another important aspect of soil-borne disease management is soil health improvement. Building a soil food web can help suppress soil-borne diseases by promoting the growth of beneficial microorganisms, which can compete with pathogens for nutrients and space.

Biosecurity

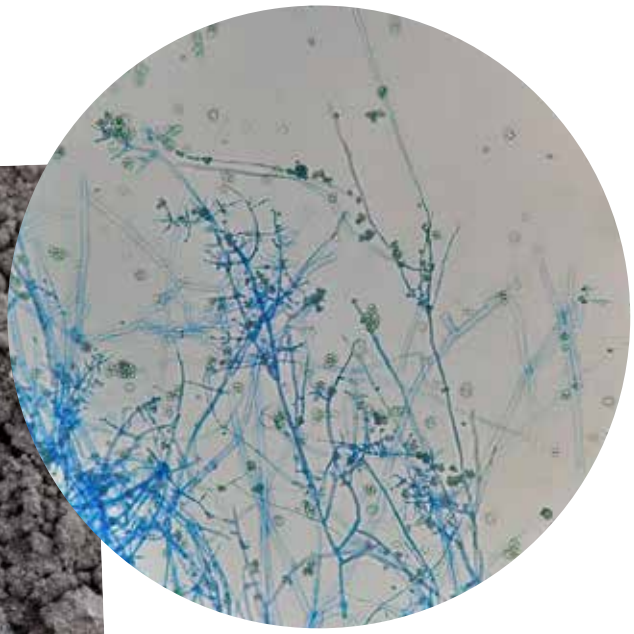
Biosecurity is one of the most critical components of managing soil-borne diseases

Biosecurity refers to the measures taken to prevent the introduction and spread of harmful organisms, such as soil-borne diseases, pests, and invasive species.

To maintain biosecurity, farmers and other stakeholders in the agricultural industry must follow best practices and regulations to prevent the introduction of harmful organisms. For example, they can follow strict protocols for the importation and movement of soil and plants, and they can implement measures to reduce the risk of disease spread, such as avoiding the movement of soil and equipment between infected and non-infected areas. Farmers can participate in extension programs and other initiatives that provide information on the latest biosecurity practices and technologies.

Soil-borne diseases are a major challenge for agriculture in the Northern Territory, and farmers must be aware of the risks and implement effective management practices to reduce the impact of these diseases.

Dying watermelon seedling in the ground



Beneficial fungi under the microscope 400 x *Trichoderma harzianum* spore and hyphae

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