

**MINISTRY OF AGRICULTURE
RESEARCH AND DEVELOPMENT
DIVISION**

**RHIZOME ROT
DISEASE OF GINGER**



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The spice trade generally considers Jamaica's ginger to be of the best quality and as a result, it commands a premium price on the world market. However, production has steadily declined overtime due mainly to rhizome rot disease in the major production areas. This has led many growers to abandon ginger cultivation.

Over the last five years the Plant Protection Unit of the Ministry of Agriculture has conducted research in the identification of the cause and control of this disease. The main pathogens associated with this disease are the fungus *Fusarium* spp. and the root knot nematode *Meloidogyne* sp.. Occasionally, the fungi *Rhizoctonia solani*, and *Pythium* sp., along with the bacterium *Pseudomonas* sp. have been isolated from diseased rhizomes.

Symptoms



Above-ground symptoms

Plants from infected rhizomes are stunted and yellow, lower leaves dry out and turn brown then eventually all aboveground shoots dry out completely. Plant collapse is very slow (up to several weeks).



Diseased ginger rhizomes

Diseased rhizomes show a brown discolouration, are normally shriveled in appearance and eventually decay leaving the outer shell intact with only fibrous internal tissue remaining.

The disease is spread unintentionally by the use of infected seed pieces from the previous crop, although these may appear normal and healthy. Hence, selecting clean material based on appearance may not be sufficient to control the disease.

Control

Short term

- Discard all seed pieces showing any cracking injury or rot.
- Dip seed pieces in hot water at 50°C for 10 minutes if incidence of root knot was high in previous crop.
- Dip seed pieces in Ridomil MZ (0.2%) or Topsin M (0.2%) for 20 minutes and allow to air dry prior to planting.
- Keep land free from weeds at all times.
- Destroy all crop refuse especially if disease was present.
- Prepare land for planting well ahead of time and allow to burn.



Rhizomes from tissue culture ginger plants

Top: harvested at 8 months

Bottom: harvested at 20 months



Left: Rhizomes from traditional seed piece harvested at 9 months

Right: Tissue culture ginger harvested at 20 months

Long term

- Use planting material from a disease free source, e.g. Tissue culture plantlets.
- Multiply seed pieces by the use of tissue culture plants on lands that were not previously used for ginger production.
- Distribute progeny rhizomes from tissue culture plants to ginger growers in areas where the disease is absent or on lands previously not used for ginger production.
- Practice crop rotation. Do not grow ginger for more than one crop on the same site.

For further information please contact:

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