

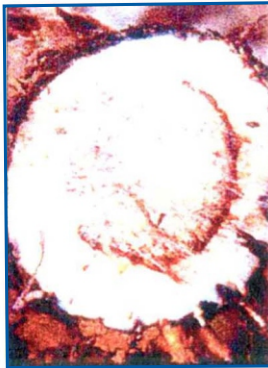
Infected fruits



Dark vessels in baby sucker



Dead darkened vessels inside trunk



Dark ring inside corm



Dark specks inside stalk

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Clarendon	986-2222/2265
St. Catherine	985-2290/2265
St. Andrew	927-1570-1/977-4217
St. Thomas	982-2234/2205/2496
Portland	993-2687/2496
St. Mary	994-2436/725-0581
St. Ann	972-3258/4216
Trelawny	954-5601/3335
St. James	952-1876/1879
Hanover	956-2252/956-2378
Westmoreland	955-2767/4446
St. Elizabeth	966-2285/2232
Manchester	962-2307/0479

**Ministry of Agriculture and Fisheries**

Bodles Agricultural Research Station: 938-2267/2281  
 Montpellier Research Station: 605-0821/605-0998  
 Plant Quarantine Division: 977-0637/940-4146

**Banana Agencies**

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# Moko

## Disease of Banana & Plantain



## The Disease

Moko is a deadly disease of banana, plantain and similar crops. It is caused by a bacterium, *Ralstonia (Pseudomonas) solanacearum* (Race 2, unknown strain). In 2004, RADA detected a strange disease at three locations in St. James. The Banana Research Division identified it as Moko and the world authority in the UK (CABI), confirmed the presence of the disease. Up to now, the disease has been found at 16 farms in that parish. This leaflet is to inform farmers and others about the disease and how to identify and manage it. To save these crops from Moko and protect the livelihood of those who depend on them, everyone who grows, sells, eats or in any way deals with bananas or plantains must work together.

## More facts about Moko

- The bacteria affects all parts of the plant (sucker, corm, fruit, bunch, “trunk”).
- Bacteria enter through wounds, roots and sometimes floral parts. They grow, spread in vessels and block the flow of food and water. This stops proper growth of the plant, which dies a few months after infection.
- Affected plants show signs of disease (See pictures). This may look like other problems e.g. drought stress, “root borer” damage.
- Other host plants (plants affected by Moko) include ornamentals e.g. heliconia, red ginger, coco, dasheen, tomato, castor bean (“Oil nut”) and several weeds.
- It is not harmful to eat fruit from infected plants

## How is it spread?

- Infected suckers and other parts (root, “trunk”, bunch, fruit) of banana and plantain, and through the suckers or roots/rhizomes of heliconia.
- On tools used to prune suckers (machetes, knives) and in infested soil (on shoes, tools, etc.) Insects, birds and other animals that visit flowers, carry one strain of the disease. This strain spreads much more quickly but has not been found in Jamaica.



Infected fruit



Dark ring around corm



Infected plant

## What to do

Carefully inspect fields regularly for symptoms of Moko.

Mark any spot where the disease is seen and quickly report to the nearest RADA, Plant Quarantine, Banana Industry or JAS Officer/Office.

**Do not touch or disturb the suspected plant**

Do not remove any plant part (sucker, corm, fruit) from a field that you think has the disease. Check your RADA Officer to make sure.

Sleeve and deflower bunches early; break off the “navel”/“bull” as soon as the last hand is seen.

Use twine instead of sticks to prop plants.

If you think the bacteria is in your field, clean all tools used there. Remove all soil or plant material on the tool and use household bleach (1 part bleach + 9 parts water) to disinfect them.

Disinfect shoes similarly, when coming from an infested field. A spray bottle will make this easier.

Do not chop diseased plants. The Banana Board will inject these plants with herbicide to kill them. Wait at least 12 months after they are dead before you plant any banana or plantain in that field.

Never plant heliconia in or near to banana or plantain fields.

Do not take banana, plantain or heliconia plants or planting parts from St. James or other western parishes to other growing areas of the island.