

Aliens of Kamayca

A newsletter on non-indigenous species in Jamaica

WATCH OUT FI DIS!

Invasive alien species are recognised as one of the leading threats to biodiversity and also impose enormous costs on agriculture, forestry, fisheries, and other human enterprises, as well as on human health. Prevention of introductions is the first and the most cost-effective option. When prevention fails then eradication becomes the main course of action. However, early detection is vital in the control and eradication of invasive alien species.

Inside this Issue	
Pink Hibiscus Mealybug (PHM) Plants Symptoms	1-2
Management Initiatives	2-3
Children's Corner	4

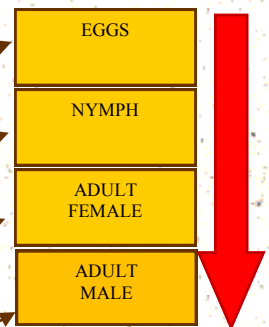
PINK HIBISCUS MEALYBUG

Pink Hibiscus Mealybug (*Maconellicoccus hirsutus*) is thought to be native to Southern Asia and is considered a serious pest in sub-tropical and tropical countries. Pink Hibiscus Mealybug (PHM) was first reported in Jamaica in June 2007 in the vicinity of Queensbury, Kingston (Jamaica Information Service, 2007). Subsequent reports have now confirmed its presence also in the parishes of Portland, St. Catherine, St. Andrew and St. Thomas (JIS, 2009). The insect is known to infest over 125 tropical plants including ornamentals (e.g. Hibiscus), agricultural crops (e.g. cacao, okra, mango, plums, sorrel, soursop), amenity trees (e.g. samaan), forestry trees (e.g. Teak and Blue Mahoe) (Jamaica Information Service, 2009). This broad host range facilitates the rapid and easy spread of the insect.



© Jeffrey W. Lotz

Figure 1: Life stages of the Pink Hibiscus Mealybug



Adult Mealybugs are approximately 3mm long and are soft bodied insects. The males are smaller than the females. The females are grayish-pink in colour with an egg-shaped body whilst the males are reddish brown in colour with one pair of wings and two long waxy "tails" (Fig. 1). Even in the absence of a male, one female Mealybug can produce 600 eggs in 5-7 days (Rural Agricultural Development Authority, 2013).

Aliens of Xamayca

The PHM is dispersed via wind, birds, wildlife and individuals moving infested plants. This usually occurs in the nymphal stage of the PHM 's life cycle.

PLANT SYMPTOMS

Plants exhibiting symptoms of the Mealybug infestation will start wilting and a white cotton-like, waxy build-up will be seen on the branches and stems (Fig. 2). While feeding on fluids from the host plant, the female PHM injects toxic saliva which causes the leaf to curl. A heavily infested plant will have black sooty mold developing on its leaves, deformed fruits, shoots appearing bushy and may exhibit stunted growth. Heavy infestation or high population of PHM can ultimately lead to death of the host plant (JIS, 2009).



Figure 2: Plant exhibiting symptoms of Mealybug infestation; 1: leaf curling; 2: stunted growth; 3: shrivelled flowers 4: PHM colony on stem

MANAGEMENT INITIATIVES

Plant health surveillance and a pest response system have been initiated by the Ministry of Agriculture (MOA) in an effort to control PHM infestations within the Eastern parishes of the country.

BIOLOGICAL CONTROL

The parasitoid wasp *Anagyrus kamali moursi* was sourced through the United States Department of Agriculture (USDA) and released at all infested sites. This parasite (Fig. 3) acts as a biological control by laying eggs inside the Mealybug adult. The eggs hatch into a maggot like larva that feeds internally on and kills the Mealybug host. After pupating inside the Mealybug's mummified body, the adult parasite chews an exit hole in one end of the mummy and emerges.



Figure 3: The parasite *Anagyrus kamali*, adult female (above) and adult male (below)

Infested sites were monitored before and after the introduction of the wasp, to determine the effectiveness of the control mechanism and its impacts on the PHM population (United States Department of Agriculture , 1997).

Eight months after the implementation of the control programme using the parasitic wasp; there was a noticeable reduction in the population of PHM by 75-100%. The population of the wasp has also increased in areas containing the PHM which hinders the further spread of PHM to other parishes.

Aliens of Xamayca

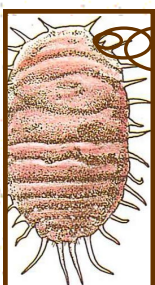
Throughout the implementation of the pest control programme, several workshops were conducted by the Plant Health Coordinating Committee geared towards sensitizing the communities on how to identify the pests and the contact details for the relevant pest control agencies (Fig. 4).



Figure 4: Field training in Portland on how to identify Mealybug infestation

YOU CAN HELP!

- ◆ Plants infested by the PHM should **NOT** be cut or trimmed. **PHM** spreads most easily by the wind and the movement of infested plants.
- ◆ **AVOID** spraying your plants with pesticides. Pesticides will kill the bio-control insects used to attack **PHM**.
- ◆ If plants are already cut, double-bag in plastic all plant cuttings (leaves, branches, flowers, etc.) and put them out with regular household garbage, **NOT** yard trash.
- ◆ **NEVER** remove plants suspected of infestation from your garden to another location.



If you see me on your premises, please contact the Rural Agricultural Development Authority at **876-977-1158**

REFERENCES

Florida Department of Agriculture and Consumer Services. 2015. Pest Alert; Pink Hibiscus Mealybug, *Maconelli-coccus hirsutus* (Green) . Retrieved on 16 September 2015 from

<http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Pest-Alerts/Pest-Alerts-Pink-Hibiscus-Mealybug>

Jamaica Information Services. 2007. Pink Hibiscus Mealy Bug Detected in Queensbury. Retrieved on 14 September 2015 from <http://jis.gov.jm/pink-hibiscus-mealy-bug-detected-in-queensbury/>

Jamaica Information Services. 2009. Agriculture Minister steps up efforts to rid the island of Pink Hibiscus Mealy Bug. Retrieved on 14 September 2015 from <http://jis.gov.jm/agriculture-ministry-steps-up-efforts-to-rid-island-of-pink-hibiscus-mealy-bug/>

Pink Hibiscus Mealy Bug. Retrieved on 14 September 2015 from <http://www.moa.gov.jm/PlantHealth/data/Pink%20Hibiscus%20Mealybug.pdf>

Rural Agricultural Development Authority. 2013. Pink Hibiscus Mealybug. Retrieved on 16 September 2015 from <https://rada.gov.jm/index.php/component/k2/item/688-pink-hibiscus-mealybug>

United States Department of Agriculture Animal and Plant Health Inspection Service .1997. Watch Out for the Pink Hibiscus Mealybug .

Wittenberg, R., Cock, M.J.W. (eds.) 2001. Invasive Alien Species: A Toolkit of Best Prevention and Management Practices. CAB International, Wallingford, Oxon, UK, xvii - 228.

Children's Corner

SEARCH FOR WORDS AND CULTURAL ITEMS

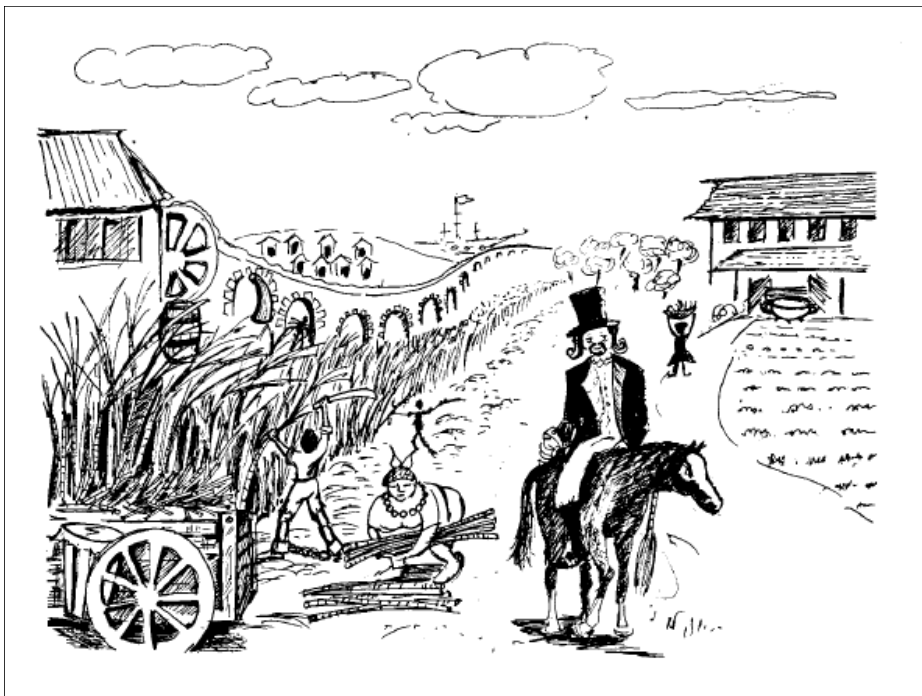
E T S M O N G O O S E L L A Q R M
 W N T E S U L B G T W H E L P P A
 H E M N B C D O F R A T Z Y E U N
 I K G H O U F A G A E T R W A C G
 T C O P T S L M B W T H S Q K Y O
 E I X T D A S L Y B O V D H I L T
 T H A Z S R O G F E Y O N S J I R
 A C K E E S R B K R D E D U J L D
 I Q Z W B N R C J R O U P T A R X
 L H A W Q S E N I Y C G I P C E G
 E K C A T T L E E G R E T Y K G O
 D S O T X J T S M U O L P L F N H
 D S T Z M A K U T A G W V A R I D
 E R T D O S C H K V B Q A C U G L
 E D O G X L B R E A D F R U I T I
 R Q N W H T N I C A Y H R E T A W

Mongoose
 White-tailed Deer
 Strawberry Guava
 Wild Hog
 Ackee
 Breadfruit
 Chicken
 Sorrel
 Dog
 Cat
 Rat
 Eucalyptus
 Pig
 Goat
 Ginger Lily
 Cattle Egret
 Neem
 Mango
 Apple
 Jackfruit
 Cotton
 Logwood

The opposite picture is of a slave plantation. There are **10** items hidden in this picture.

Try to find the items listed below:

- The Abeng
- Drum
- Hoghead (Barrel)
- Cat-O-Nine (Whip)
- Ship
- Wig
- Anancy
- Dutch Pot
- Bead Necklace
- Shackles



The Aliens of Xamayca is a quarterly newsletter that features non-native species in Jamaica. Persons interested in writing articles for the newsletter may submit them to the editor at samantha.grant@nepa.gov.jm.