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ENTEBBE, UGANDA

28<sup>th</sup> January, 2022


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### **FIRST REPORT ON MANGO MEALYBUG (*RASTROCOCCUS INVADENS*, *WILLIAMS*) IN UGANDA**

This is to report to the IPPC Secretariat the first detection of Mango Mealybugs (*R. invadens*) in Uganda. Mango Mealybug was detected in 2021 during the detection survey conducted by the team from the Ministry of Agriculture, Animal Industry and Fisheries with support from FAO. The survey followed a confirmed report of the Mango Mealybug (*R. invadens*) in Rwanda in 2019.

Sample specimens were collected from several areas of the country and were analysed by experts from the Natural History Museum of London, United Kingdom in November, 2021. The analytical report confirmed the presence of the Mango Mealybug (*Rastrococcus invadens*; Williams), in specimens collected from Sofia Cell Kafunjo Town Council, Ntungamo District.

The detailed report is attached.

  
Maj. Gen. David Kasura - Kyomukama  
PERMANENT SECRETARY

Copy to: Food and Agriculture Organisation (FAO) Representative, Kampala



# First report of Mango mealybug (*Rastrococcus invadens*) in Uganda

## A. Introduction

During the second mealybug detection survey of August 2021 in Uganda under the emergency project to “Enhance preparedness and response capacity of the countries in Sub regional office of Eastern Africa to the Mango mealybug (*Rastrococcus invadens*, *Williams*)” indicated the presence of the pest. The objective of the survey was to further assess the presence or absence of pests of mango that was confirmed in Rwanda 2019. Several samples were collected from various areas at sites growing mangoes. Districts were selected in regions of Eastern, Western, North and South Western Uganda. The specific sites for sampling were demarcated with their Coordinates.

## B. Sample Diagnosis and Distribution

The samples of fruits and leaves of suspects of mangoes were sent to Natural History Museum in the United Kingdom for identification. Two sample picked from Ruhama, Ntungamo District, in Sofia Cell (S 01° 03'03"; 30°27'36") and confirmed the presence of Mango mealybug *Rastrococcus invadens* after diagnosis. The Sofia cell is located in Rwanda- Uganda Kagitumba Border town. The areas are also major destinations for commodities and people from Rwanda.

## C. Host status

The *R. invadens* is a polyphagous pest that feeds mainly on Mango, banana and citrus as well as other ornamentals belonging to over 22 plant families. However, many of these plants are not known to sustain the mealybugs. Of concern to Uganda are Mango, Banana and Citrus.

## D. Potential for spread in the country

There is a high likelihood that the pests will spread to other areas beyond the current location. Short distance dispersal is known to occur through active walking of the crawlers from infested to un-infested plants; or passively by wind, rain, irrigation water, birds and ants. Long-distance dispersal is mainly through human transportation on clothes, land vehicles, and all above ground plant parts. The presence of the pests in one location (Sofia Cell, Ruhama, Ntungamo district) a border town on Uganda-Rwanda Border indicated the pests could have followed any of the above pathways.

## E. Potential impact

The Mango mealybug is most likely to impact Uganda economically, culturally and environmentally. Mango mealybug can have severe economic impact on both production and quality of the Mango and Citrus. It has been reported to reduce mango yield by 89%-100%. In citrus and other horticultural crops, there are cases of complete loss of production.

Large number of mealybugs have the potential to interfere with natural predators and parasitoids, lizards and birds that would have kept them in check. Mealybugs cause severe defoliation exposing some habitats to Ultra violet light dangerous to biodiversity.

Community livelihoods are likely to be negatively affected. The pest infestation and resultant reduction in yield may result in reduced roadside sales of fruits. The reduction in fruits that supply Vit. A and C lead to childhood malnutrition. Excessive honeydew seem to increase fly numbers, causing nuisance to villagers and tourists.

Socially, in mixed cultivation of fruits and vegetables at farm level causes reduced productivity hence affecting income.



**F. Proposed intervention (Immediate, Short and Long term)**

The immediate action / intervention (ranging from immediate, short and long term) will include the following:

1. Establish the extent of Spread by conducting delimiting survey starting from the infested area where the pests is known to occur.
2. The delimiting survey will determine if regulation of movement of plants and other pathways could help to contain introduction and spread to other areas.
3. Launch awareness campaign to inform communities and individuals for early pest reporting and management.
4. Trace the pest pathways in order to strengthen inspection and streamline course of direction for the current and future handling of such incidences.
5. Authorize the importation, rearing and release of natural enemies (parasitoids) recommended by FAO.



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Our Ref: 21/160

(I) Ag Mch

Act / Handle

Your Ref:

30 November 2021

Dear Maj. Gen. Kyomukama

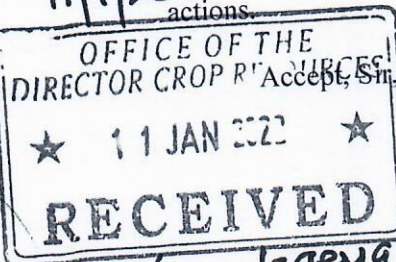
**Subject: Presence of Mango Mealybug (*Rastrococcus invadens*) in Uganda**

Under the emergency project *Enhance the preparedness and response capacity of the countries of the Sub-Regional Office for Eastern Africa to the mango mealybug (*Rastrococcus invadens*) Phase 1*, the Food and Agriculture Organization of the United Nations (FAO) facilitated a second mealybug detection survey in Uganda. The survey was to further assess presence or absence of the serious pest of mango that was confirmed in Rwanda in 2019, a new pest in Eastern Africa.

The national team collected samples, which were analyzed by experts from the Natural history Museum of London, UK. The diagnosis authoritatively confirms the presence of Mango Mealybug (*Rastrococcus invadens*). Enclosed is the report of the study, which also recommends the following actions:

1. Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) should report the presence of Mango Mealybug (*Rastrococcus invadens*) to the International Plant Protection Convention (IPPC) as soon as possible as a new record of pest presence. The IPPC contact point for Uganda can do this through the IPPC Contact point page: <https://www.ippc.int/en/countries/uganda/>
2. MAAIF should conduct a delimitation survey starting from the known infested area to determine the extent of spread of the pest.
3. If the pest is not widely spread, official actions (regulate the movement of plants and plant products and movement of people or other regulatory actions as necessary) should be undertaken to limit the spread of the pest.
4. Launch awareness campaign to enlist communities and individuals to be vigilant for new infestations and to report the pest early.
5. Undertake an education campaign to advise communities on management options. In general, chemical control is not recommended.
6. The regulatory authorities to prepare a permit for the import and release of parasitoids recommended by FAO to combat the pest.

FAO will be available to meet the relevant technical officials to discuss the recommended actions.



Accept, Sir, the assurance of my highest consideration and esteem.

Yours sincerely,

Antonio Querido  
Country Representative

43823  
PS'S OFFICE MAAIF  
Date received: 12/21  
Time: .....  
Delivered by: .....  
Received by: .....  
Action by: .....

Mr. Kamukageya P(SAH)  
Maj. Gen. David Kasura Kyomukama  
Permanent Secretary  
Ministry of Agriculture, Animal Industry and Fisheries  
Entebbe





Orlando Sosa  
Agricultural Officer (Crops)  
Sub Regional Office for Eastern Africa (SFE),  
Food and Agriculture Organization of the United Nations (FAO).  
P.O. BOX 5536. CMC Road, Gurde Sholla, Kebele 12/13,  
Addis Ababa, Ethiopia.

November 9th, 2021

Dear Orlando,

**Re: Mealybug Identifications-FAO Uganda (Your Ref: 3605343-1)**

**Our Ref: IAS 2021-11161-Uganda 2nd**

Our specialist, Gillian Watson has examined your specimens and has provided the following information:

**Identification report for FAO Uganda 2nd samples**

**Sample no. P01:** Uganda, Ntugamo District, Sofia Cell, S 01° 03'03", E 30° 27'36", on *Mangifera indica*, 27.ix.2021.  
No. specimens: 10

***Rastrococcus invadens* Williams** (the sender's tentative identification is confirmed). Notes are given below.

2 adult females mounted on 1 slide for confirmation of the species, to be hand-carried back to Uganda in late November 2021.

**Sample no. P04:** Uganda, Ntugamo District, Sofia Cell, S 01° 03'03", E 30° 27'36", on *Mangifera indica*, 27.ix.2021.  
No. specimens: 10

***Rastrococcus invadens* Williams** (the sender's tentative identification is confirmed). Notes are given below.

Our Patron: HRH The Duchess of Cambridge

The Natural History Museum Cromwell Road London SW7 5BD United Kingdom  
+44 (0)20 7942 5000 [www.nhm.ac.uk](http://www.nhm.ac.uk)

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2 adult females mounted on 1 slide for confirmation of the species, to be hand-carried back to Uganda in late November 2021.

**Sample no. P06:** Uganda, Ntugamo District, Sofia Cell, S 01° 03'03", E 30° 27'36", on *Mangifera indica*, 27.ix.2021.  
No. specimens: 10

***Rastrococcus invadens* Williams** (the sender's tentative identification is confirmed).

2 adult females mounted on 1 slide for confirmation of the species.

Known distribution: *Rastrococcus invadens* is of southern Asian origin, but is now known from 32 countries and is still extending its range (see <http://scalenet.info/catalogue/Rastrococcus%20invadens/>). In Africa, it has been recorded previously from Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Côte d'Ivoire, Democratic Republic of the Congo, Egypt (plant quarantine interception in Italy), Gabon, Gambia, Ghana, Guinea, Mali, Nigeria, The Republic of the Congo, Rwanda, Senegal, Sierra Leone and Togo (<http://scalenet.info/catalogue/Rastrococcus%20invadens/>).

In West Africa the species is widespread, but its recent incursion into Rwanda in 2019 indicates an eastward expansion of its range (see <https://www.ippc.int/en/countries/rwanda/pestreports/2019/10/mango-mealybug-rastrococcus-invadens-williams/>); **Uganda is a new country record for *R. invadens*.**

Known hosts: *R. invadens* is polyphagous, with host-plants in 57 genera belonging to 31 families – see <http://scalenet.info/catalogue/Rastrococcus%20invadens/>) but it prefers tropical fruit trees as hosts and can cause complete failure of the mango crop.

**Sample no. P05:** Uganda, Rukiga District, Muhanga Town, S 01° 10' 04", E 30° 06' 53", on *Psidium guajava*, 24.ix.2021.



No. specimens: 10

***Planococcus kenyae* Le Pelley**

2 adult females mounted on 1 slide for confirmation of the species, to be hand-carried back to Uganda in late November 2021.

Known distribution: *Planococcus kenyae* is native to Uganda, but is now known from 15 countries (see <http://scalenet.info/catalogue/Planococcus%20kenyae/>). It has been recorded previously from Central African Republic, Côte d'Ivoire, Democratic Republic of The Congo, Ghana, Kenya, Malawi, Nigeria, Republic of The Congo, Sierra Leone, Sudan, Tanzania, Togo, Uganda and Zimbabwe (<http://scalenet.info/catalogue/Planococcus%20kenyae/>)

Known hosts: *P. kenyae* is fairly polyphagous and often ant-attended, with host-plants in 13 genera belonging to 11 families – see <http://scalenet.info/catalogue/Planococcus%20kenyae/>). It has a preference for tropical fruit and beverage trees as hosts (particularly *Annona* species, *Citrus* and *Coffea*). It can cause damage to coffee.

**Sample no. P07:** Uganda, Bukedea District, Koronok, on *Ananas sativa*, N 01° 64' 46", E 34° 61' 97", 24.ix.2021.

No. specimens: 10

***Paracoccus marginatus* Williams & Granara de Willink** (this does not confirm the sender's tentative identification of *Planococcus*). Notes are given below.

2 adult females mounted on 1 slide for confirmation of the species, to be hand-carried back to Uganda in late November 2021.

**Sample no. P08:** Uganda, Mukono District, Nakifuma TC, N 00° 21' 17", E 32° 45' 31", on *Carica papaya*, 28.ix.2021.

No. specimens: 10

***Paracoccus marginatus* Williams & Granara de Willink** (this does not confirm the sender's tentative identification of *Planococcus*).

3 adult females mounted on 1 slide for confirmation of the species.

Known distribution: *Paracoccus marginatus* is of South American origin but is now known from 54 countries and is still extending its range (see <http://scalenet.info/catalogue/Paracoccus%20marginatus/>). In Africa, it has been recorded previously from Benin, Burkina Faso, Cameroon, Gabon, Ghana, Kenya, Mauretania, Mozambique, Nigeria, Senegal, Sierra Leone, Tanzania and Togo (<http://scalenet.info/catalogue/Paracoccus%20marginatus/>). **Uganda is a new country record for *P. marginatus***, a westward expansion of its range in eastern Africa.

Known hosts: *P. marginatus* is polyphagous (host-plants in 158 genera belonging to 51 families – see <http://scalenet.info/catalogue/Paracoccus%20marginatus/>); it prefers *Carica papaya* (pawpaw) as a host and can cause complete failure of the crop and death of the trees. Other crops attacked include *Manihot esculentus* (cassava).

I hope this information is useful to you.

Kind regards,

Dr. Christina Fisher  
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