

## COMUNICAÇÃO CIENTÍFICA

### WEEVIL ASSOCIATED TO GUMMOSIS IN OIL PALM (*Elaeis guineensis* Jacq.) IN BRAZIL

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#### ABSTRACT

In commercial plantations of oil palm in Nazare municipality, state of Bahia, Brazil, the association of *Rhinostomus barbirostris* Fabricius and *Ceratocystis paradoxa* (Dade) C. Moreau in high number of oil palm trees showing stem bleeding symptoms was observed. The pathogen was isolated from tissues of diseased oil palm plants. To our knowledge this is the first report on the contribution of *R. barbirostris* to increase the severity of stem bleeding disease caused by *C. paradoxa* in oil palm. Control measures are suggested.

**Keywords:** *Ceratocystis paradoxa*, *Elaeis guineenses*, *Rhinostomus barbirostris*

### GORGULHO ASSOCIADO À RESINOSE EM DENDEZEIRO (*Elaeis guineensis* Jacq.) NO BRASIL

#### RESUMO

Em plantações comerciais de dendê, no município de Nazaré, estado da Bahia, Brasil, foi observada a associação de *Rhinostomus barbirostris* e *Ceratocystis paradoxa* em grande número de dendezeiros com sintomas de resinose. O patógeno foi isolado dos tecidos de plantas doentes. Este é o primeiro relato sobre a contribuição de *R. barbirostris* para o aumento da severidade da resinose em dendezeiro. Medidas de controle são sugeridas.

**Palavras-chave:** *Ceratocystis paradoxa*, *Elaeis guineensis*, *Rhinostomus barbirostris*

Gummosis or stem bleeding is an important disease of coconut and other palm crops around the world. *Ceratocystis paradoxa* (Dade) C. Moreau anamorph *Thielaviopsis paradoxa* (De Seynes) Saccardo is suspicious of being the causal agent of this disease, once it is easily isolated from tissues of coconut diseased plants (FERREIRA *et al.*, 2007).

According to Ferreira *et al.* (2007), the stem bleeding disease occurs in coconut

plantations of the northeast region of Brazil, mainly the states of Sergipe and Bahia. Infected coconut palms show the characteristic exudation of a dark reddish-brown liquid from the growth cracks and/or wounds of the stem, reduction of both the size of young leaves and the frequency of leaf budding. The trunk gradually tapers toward the apex and the crown size is reduced. The outer whorl of leaves becomes

yellow rather prematurely and leaves easily break down.

In the south region of Bahia state, the weevil *Rhinostomus barbirostris* Fabricius (Coleoptera: Curculionidae) has been frequently associated to *C. paradoxa*. It is supposed that weaken coconut palms infected by *C. paradoxa* release a semiochemical that attracts these beetles. According to field observations, the crown becomes yellow and drops down more frequently in coconut palms infected by the fungus and heavily attacked by larvae of *R. barbirostris*.

Recently in the municipality of Nazaré, State of Bahia, Brazil a high number

of palms showing stem bleeding and attacked by *R. barbirostris* was found in commercial plantations of oil palm (*Elaeis guineensis* Jacq.). Portions of these diseased trunks were brought to the Cacao Research Center (CEPLAC/CEPEC) Phytopathology Section to be analyzed. *C. paradoxa* was isolated from all samples. Disease symptoms were much more severe on those trees that were infested by *R. barbirostris* (Figure 1).

Adults of *R. barbirostris* remain hidden under the leaves axilla during the day and they copulate and deposit eggs along the palm trunk during the night.



**Figure 1.** Oil palm infected with gummosis disease and attacked by *Rhinostomus barbirostris* weevil in Bahia, Brazil.

The beetle larvae excavate tunnels by feeding beneath the bark disrupting the xylem vessels causing the exudation of a rusty brown liquid from cracks. In the crown, the outer whorl of leaves becomes yellow and rather prematurely drops down and dries up killing the plants.

The sawdust ejected during beetle larvae excavation may constitute an inoculum source to healthy oil palms as occurs in the pathosystem *Theobroma cacao* (Linn.) x *Ceratocystis cacaofunesta* Engelbr. & T.C. Harr. Insects of the genera *Xyleborus* and *Xylosandrus* (Coleoptera: Curculionidae: Scolytinae) are associated to *C. cacaofunesta* in cacao trees with symptoms of *Ceratocystis* wilt. The beetles perforate the infected tissues of the cacao tree trunk ejecting sawdust while feeding. Spores of *C. cacaofunesta* present in the sawdust contribute to disseminate the pathogen (ITON & CONWAY, 1961; OLIVEIRA & LUZ, 2005).

*Rhinostomus barbirostris* is mentioned also as a vector of the nematode *Bursaphelenchus coccophilus* (Cobb.) (GOODEY, 1933; GOODEY, 1960) to coconut trees (FRANCO, 1964).

The recommendation to control the insect and stem bleeding disease in coconut and oil palm plantations is the fast eradication of the infected plants, which must be cut and burned to avoid liberation of *R. barbirostris* adult individuals. The remaining part of the palm trunk must be sprayed with insecticide to prevent further egg laying by beetle females. As there are not symptoms that can be used to predict which palms are infected and which ones are not, sprays with insecticide must be done on oil palm trees of a focus area to prevent insect attack. The spray must be directed to trunk and leaves axils. Differently from *Rhinchochorus palmarum* (Linn.), *R. barbirostris* is not attracted by baits.

It was observed that palms infected by *C. paradoxa* but not colonized by *R.*

*barbirostris* still have a good yield. Thus, palms in which the fungus infection is initiating and there is not *R. barbirostris* attack, there is a real possibility of delaying the disease progress through the adoption of preventive control measures as it was recommended to coconut (FERREIRA *et al.*, 2007).

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