

Title:

Estimating the Economic Impact of an Eventual Introduction of Huanglongbing (HLB) in the State of Bahia, Brazil

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Author:

Oliveira, J. M.C.

Silva, S. X.B., Laboratory of Epidemiology and Health Information Technology / Bahia State Agency of Agricultural Defense (ADAB), Salvador/BA, Brazil

Nascimento, A. S., Embrapa Cassava & Fruits, Cruz das Almas/BA, Brasil

Miranda, S. H.G., ESALQ/Universidade de São Paulo, Piracicaba/SP, Brasil

Barbosa, C. J., Embrapa Cassava & Fruits, Cruz das Almas/BA, Brasil

Laranjeira, F. F., Embrapa Cassava & Fruits, Cruz das Almas/BA, Brasil

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Author Bio:

Laboratory of Epidemiology and Health Information Technology / Bahia State Agency of Agricultural Defense (ADAB), Salvador/BA, Brazil

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Abstract:

Bahia is the second most important citrus region in Brazil, accounting for 5.5% of Brazilian production. 80% of this production comes from family based farms, which depend on this crop for economic support. Huanglongbing (HLB) was never recorded in Bahia, but is already spreading in three other citrus-producing states of the country, one of which borders the state of Bahia. Thus, this study aimed to estimate the potential economic impact resulting from an eventual introduction of HLB in Bahia. The mathematical model of Gompertz and a logistic model were used to determine the epidemiological pattern of the disease, considering three scenarios. In scenario A, the efforts of the Bahia State Agency of Agricultural Defense were positive preventing the establishment of HLB (baseline scenario). In scenario B, there was the introduction of the bacteria into Bahia citrus orchards, and the absence of control measures contributed to the expansion of HLB in the following years. In scenario C, after detection of the disease, the producers would adopt control measures: eradication of symptomatic hosts and the insect vector population suppression. The costs of disease control were measured by the need for sprays, carrying out periodic inspections and eradication of plants with symptoms. The net present value (NPV) was



used for comparing different scenarios. The results showed that, if HLB is introduced in Bahia, the losses would be very significant in the following 20 years. Should control and eradication procedures not be followed, losses of up to US \$ 890,7 million could occur.

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Oliveira, J.M.C.¹, Silva, S.X.B.¹, Nascimento, A.S.², Miranda, S.H.G.³, Barbosa, C.J.², and Laranjeira, F.F.²

¹Laboratory of Epidemiology and Health Information Technology / Bahia State Agency of Agricultural Defense (ADAB), Salvador/BA, Brazil

²Embrapa Cassava & Fruits, Cruz das Almas/BA, Brasil

³ESALQ/Universidade de São Paulo, Piracicaba/SP, Brasil

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Index terms: *Candidatus Liberibacter*, cost, eradication.