

Título: AGROINDUSTRIAL RESIDUES AS SUBSTRATES FOR PRODUCTION OF THE *BEAUVERIA BASSIANA* ENTOMOPATHOGENIC FUNGUS

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Resumo:

Beauveria bassiana (Bals.) Vuillemin is a fungus that shows much promise as a biological control agent against plague. In order to reduce costs and obtain large amounts of viable seedlings, natural substrates have shown promising results for the production of *B. bassiana*. Studies on the production of *B. bassiana* are still scarce in Brazil, justifying further research to establish the most appropriate means aimed at producing fungus in local conditions and low cost. The objective of this study was to test various solid substrates with agroindustrial residues, seeking to optimize the growth of fungus with adequate production and viability of conidia. The fungal strain was provided by URM Culture Collection of the Mycology Department of Universidade Federal de Pernambuco, on the accession number 6504. The assays were conducted at the Molecular Genetics Laboratory and Plant Biotechnology, UFPB, João Pessoa, PB, Brazil. The fungus was cultivated in different solid media obtained from grains of rice (standard media), sugar-cane bagasse, malt residue, cashew bagasse and mesquite flour. The experiments were carried out in triplicate, in erlenmeyer flasks of 250 mL, containing 30 g of the substrate and moisture content of 70%. The flasks were inoculated with 0.5 mL of conidia suspension (1×10^6 conidia mL⁻¹) and kept at room temperature for 10 days. High conidial production was verified in grains of rice, sugar-cane bagasse and malt residue. The Proportion of carbon and nitrogen (C: N) media is an important factor to be considered in the development of culture media, for its composition can have a close relationship with the cost and quality of produced fungus, can influence the amount propagules. The sugar-cane bagasse is a rich substrate in polysaccharides, fibrous which favors aeration, reducing compaction and ensuring the highest growth during cultivation. Malt residue is rich in starch, sugars, nitrogen, proteins and enzymes. This composition favors the growth and sporulation. There was no growth in media composed of cashew bagasse and mesquite flour. These media had a moisture loss over 10 days of incubation. The loss of moisture can lead to low availability of nutrients, affecting microbial growth. These new culture media (sugar-cane bagasse and malt residue) may provide a reduction of approximately 50% in the production cost, thus presenting a viable alternative for the fungus production.

Palavras-chave: biological control, biopesticide, natural substrates