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Effect of the Cowpea bean (*Vigna Unguiculata* L. Walp) extract on Mead elaboration

Ernesto Acosta Martinez, Geiza Suzart Araujo, Kayque Frota Sampaio, Mashely Pickman Gutierrez, Silvia Maria Almeida de Souza and Giovani Brandao Mafra de Carvalho

State University of Feira de Santana, Brazil

Mead is an alcoholic beverage that contains alcoholic graduation of 8-18% (v/v), resulting from the fermentation of a diluted honey solution. Due to the high concentration of sugars, low pH and low concentration of minerals, the mead production mead requires a lot of time. The main aim of the work was to evaluate the effect of the concentration of cowpea bean extract (*Vigna unguiculata*) on fermentation. Initially, one strain of *Saccharomyces cerevisiae* (Safbrew T-58) and two strains of *Saccharomyces bayanus* (Premier Blanc e Premier Cuvee) were inoculated into honey must dilute at 30°Brix, incubated at 30°C and 150 rpm for 24h. The fermentations were carried out in Erlenmeyer flasks containing 250 mL of honey must (30°Brix), supplemented with the mixture of ammonium sulfate (1g/L) and magnesium chloride (0.1g/L) and with cowpea bean extract (5 and 30 g/L), inoculated with an initial culture of 10⁷ cells/mL and incubated at 30°C for 240h. The total time of the fermentation ranged from 192 to 216h. For the three used yeasts above, the best results were obtained using 30 g/L of extract, since there was a higher cell growth, reaching approximately (21x10⁷; 11x10⁷ and 11 x 10⁷ cell/mL), higher substrate consumption (274, 295 and 305 g/L) and higher ethanol production (110, 119 and 121 g/L) respectively, and the *Saccharomyces bayanus* (Premier Blanc) presented highest apparent degree of fermentation (91.7%). The use of cowpea extract is a viable and economical alternative to improve the fermentative process of mead.

Biography

Ernesto Acosta Martinez has completed a PhD at the age of 37 years from University of Sao Paulo, and postdoctoral studies from the Polytechnic Institute of Sao Paulo, Brazil. He is a professor and vice coordinator of the Food Engineering Course at the Technology Department of the State University of Feira de Santana, Brazil. He has published more than 15 papers in reputed journals and 2 chapters of books.

ernesto.amartinez@yahoo.com.br

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