

Bioproduction of Phytohormones by Liquid Fermentation Using a Mexican Strain of Botryodiplodia theobromae

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Abstract : Plant hormones are a group of molecules that control different processes ranging from the growth and development of the plant until their response to biotic and abiotic stresses. In this study, the capacity of production of various phytohormones was evaluated from a strain of Botryodiplodia theobromae by liquid fermentation system using the modified Mierch medium added with a hydrolyzate compound of mead all in a reactor without agitation at 28 °C for 15 days. Quantification of the metabolites was performed using high performance liquid chromatography techniques. The results showed that a microbial broth with at least five different types of plant hormones was obtained: gibberellic acid, zeatin, kinetin, indoleacetic acid and jasmonic acid, the last one was higher than the others metabolites produced. The production of such hormones using a single type of microorganism could be in the future a great alternative to reduce production costs and similarly reduce the use of synthetic chemicals.

Keywords : biosystem, plant hormones, Botryodiplodia theobromae, fermentation

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