

Título: CHANGES OF JATROPHA PLANTATION ON SOIL MICROBIAL STRUCTURE

Autores: Santana, E. B.¹, Marques, E. de L. S.², Dias, J. C. T.²

¹ UNEB - Universidade do Estado da Bahia (Rod. BR 101, Km 10, CEP: 48020-400, Alagoinhas, BA, Brasil)

² UESC - Universidade Estadual de Santa Cruz (Rod. BR 415, Km 16, CEP: 45662-900, Ilhéus, BA, Brasil)

Resumo:

The use of *Jatropha curcas* L. (*Jatropha*) as agrofuel is currently increasing in tropical regions. This plant and other *Jatropha* species are well known for synthesising various toxicants. However, the effects of *Jatropha* plantation on soil microbiota have barely been investigated. We sampled a soil planted with *Jatropha* for 240 days in Feira de Santana, Bahia, Brazil to test whether *Jatropha* could have change effects on microbial diversity. We further hypothesised that the extent of the effects of *Jatropha* could affect the microbial community in a few days. We used DGGE and DNA sequencing. Total DNA was extracted from soil samples using the Power Soil DNA Isolation Kit. The DNA was subjected to electrophoresis in 1% agarose gels, stained with syber green, visualized and digitalized in a transiluminator. DNA was amplified using primers for bacteria *rpoB* gene and Fung5r. The amplified rDNA gene sequences were analyzed in 8% polyacrylamide gel composed with a denaturing gradient of 30–60%. The most prominent bands were excised from DGGE gels and sequenced. We observed that the genetic structure of the fungal and bacterial community was affected during *Jatropha* plantation. The composition of microbial community was constituted with microorganisms of native microbiota not initially observed in soil samples. Also, variations in the population structure of soil bacterial communities were observed, and may be a result of a plant and microorganisms relationship. The changes in the microbial community structure in soil with *Jatropha* plantation could be caused by selection of microorganisms closely related with the plant. The most detected populations in microbial communities were *Bacillus*. The genus *Bacillus* is common in soil, and it is considered to contain a large number of plant growth-promoting strains. Further studies dedicated to the functional implications of such structural changes are needed to investigated the relations between *Jatropha* and *Bacillus*.

Palavras-chave: *Jatropha curcas* L.; DGGE; microbiota; *Bacillus*.

Agência de fomento: Capes