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# Jatropha curcas and Ricinus communis differentially affect arbuscular mycorrhizal fungi diversity in soil when cultivated for biofuel production in a Guantanamo (Cuba) tropical system.

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The arbuscular mycorrhizal fungi (AMF) are a key, integral component of the stability, sustainability and functioning of ecosystems. In this study, we characterised the AMF biodiversity in a control soil and in a soil cultivated with Jatropha curcas or Ricinus communis, in a tropical system in Guantanamo (Cuba), in order to verify if a change of land use to biofuel plant production had any effect on the AMF communities. We also asses whether some soil properties related with the soil fertility (total N, Organic C, microbial biomass C, aggregate stability percentage, pH and electrical conductivity) were changed with the cultivation of both crop species. The AM fungal small sub-unit (SSU) rRNA genes were subjected to PCR, cloning, sequencing and phylogenetic analyses. Twenty AM fungal sequence types were identified: 19 belong to the Glomeraceae and one to the Paraglomeraceae. Two AMF sequence types related to cultured AMF species (Glo G3 for Glomus sinuosum and Glo G6 for Glomus intraradices-G. fasciculatum-G. irregulare) disappeared in the soil cultivated with J. curcas and R. communis.
The soil properties (total N, Organic C and microbial biomass C) were improved by the cultivation of the two plant species. The diversity of the AMF community decreased in the soil of both crops, with respect to the control soil, and varied significantly depending on the crop species planted. Thus, R. communis soil showed higher AMF diversity than J. curcas soil. In conclusion, R. communis could be more suitable in long-term conservation and sustainable management of these tropical ecosystems.