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**Pos-market monitoring the impact of Bt maize (Cry1Ab) on the rhizosphere bacterial community cultivated in Brazil**

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Genetically modified (GM) maize expressing the insecticidal protein Cry1Ab from *Bacillus thuringiensis* (*Bt* maize) has been cultivated commercially in Brazil since 2008. Microorganisms in soil will come into contact with transgenic Cry proteins when these proteins are released from *Bt* maize in root exudates or from decomposing plant tissue, thus posing a potential risk for non-target organisms, such as soil bacteria and fungi. It is important the monitoring of genetically modified organisms after deliberate release in order to assess and evaluate possible environmental effects. The objective of this study was to evaluate the impact of transgenic maize expressing Cry1Ab proteins on rhizosphere soil bacterial community based on metabolic fingerprinting with Biolog EcoPlates™. For two consecutive years, *Bt* maize MON810 and Bt11, their respective isogenics treated and not treated with chemical insecticides were assessed for the effects of transgenic crop on the rhizosphere soil bacterial community. The rhizosphere soils were collected at 30 and 60 days after germination in two environments in Brazil (Sete Lagoas and Janaúba) under field conditions. The metabolic diversity was evaluated using the Biolog EcoPlates™, and after 72 h of incubation no differences among transgenic and non-transgenic maize were not detected. The values of Shannon index demonstrated a high level of diversity in rhizosphere bacterial community. However, statistical analysis indicated that no significant differences among transgenic, isogenic counterparts and samples sprayed with chemical insecticide. In conclusion, these results demonstrated that *Bt* maize MON810 and Bt11 cultivated in Brazil show no significant impact in the soil bacterial community structures based on the parameters studied.

Keywords: Rhizosphere, biolog, Bt maize, cry genes