DYNAMICS OF SOIL CARBON, NITROGEN AND MICROBIAL BIOMASS IN TROPICAL AGROECOSYSTEMS. Carlos Alberto Vasconcellos*, Carla Cristina Moura França, Ivanildo Evodio Marriel. CNPMS/ EMBRAPA, Caixa Postal 151, 35701.970. Sete Lagoas, MG.

The effects of long-term organic residue additions and soil management on the active pool of soil organic matter, CO_2 evolution and microbial biomass N were studied in maize without straw inputs, maize-bean rotation with and without tillage system, native Savannah, continous leguminous tree (*Tefrosia* sp) and soybean and maize crops for grain in a Red Oxisol on the tropical region of Sete Lagoas. The areas with soybeans showed the higher rate for CO_2 evolved following areas with continuous maize for grain, native savannah and with *Tefrosia*; the lowest rates were observed with crop rotation and with continuos maize for silage. Probably due to the seasonal changes of microbial biomass appeared to depend on crop management practices and on soil moisture. Carbon mineralization was directly related to estimated crop residue-C returned to soil in dependence of each management practice.