

MODEL ABSTRACT

SOIL MOISTURE AND TEMPERATURE IN RELATION TO SUGARCANE CROP MANAGEMENT

- Rationale* _____ The change of the traditional sugarcane (*Saccharum officinarum* L.) management, which includes burning before harvest, to that of the no-burned cane harvest which leaves crop residues on the field, affects soil thermal and hydric regimes.
- Objective* _____ This study evaluates the intensity of soil temperature and water content changes samples from in the top layer, taking into account the following interrow managements: bare soil; straw mulch and soil with burned residues.
- Methods* _____ Soil water content was measured in the 0-15 cm layer, using a surface neutron probe, and soil temperature with digital thermometers installed at the depths of 3, 6 and 9 cm. The experiment was carried out on a Rhodic Kandiudox using the cane variety SP 70-1143.
- Results* _____ There was a pronounced effect of the soil cover types on temperature and moisture, with an inverse relation between these variables. A "state-space", semi and cross correlation analysis is presented.
- Conclusion* _____ The straw mulch softens surface soil temperature, reducing it by about 7°C and increases volumetric soil water content by 10%. The moisture increased damaged cane sprouting, probably due to a greater fungi and microorganism incidence.

Note: In the journal, the five parts form a single paragraph of not more than 250 words.