AGU FALL MEETING
San Francisco | 14–18 December 2015

H43B-1477: Monitoring Two Small Catchments to Evaluate Effects of No-Tillage Agricultural Management in São Paulo State, Brazil

ABSTRACT

Thursday, 17 December 2015
13:40 - 18:00
Moscone South - Poster Hall

In recent years, declines in water and soil quality have been observed in areas of Brazil where no-till agriculture had been previously implemented. Poor soil management associated with the absence of public policies has caused soil erosion, because many farmers are moving back from no-till to traditional cultivation for faster economic gains. A research project - *SoloVivo* Project - leaded by Embrapa (Brazilian Agricultural Research Corporation) in partnership with Itaipu Binacional aims to develop and validate, in a participatory way, tools to evaluate the technical performance of soil and water management at the rural properties that practice no-till agriculture. In this context we have selected two paired small (< 100 ha) catchments in the Paranapanema region, São Paulo State, where no-till management is practiced at two different degrees of effectiveness. In the figure bellow it can be seen a scene of one of the two studied catchments. For monitoring rainfall, soil solution and stream water, each catchment will be equipped with a programmable datalogger (with cell phone communication for data collection) linked to: a high intensity tipping bucket rain gage; a reflectometer to monitor soil volumetric water content, bulk electric conductivity and temperature; a radar water level sensor; a turbidity sensor; and an electric conductivity-temperature probe. We expect that stream flow and sediment generation, besides water quality (measured by conductivity) may serve as indicators of the benefits of no-tillage agriculture done more or less well. The results of this study will be used to stimulate discussions at workshops with the farmers who participate in a rural producers association in the region. In addition this and other results can be used to help the Brazilian National Water Agency (ANA) decide about applying no-till agricultural management systems in its programs of payment for environmental services.

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