INFLUENCE OF USE AND SOIL COVERAGE IN WATER QUALITY

Kaline de Mello[1], Felipe Nogueira Silva[2], Roberta Averna Valente[2], Carlos Alberto Vettorazzi[1], Ana Paola Salas Gomes Duarte Di Toro[3*].

1. Universidade de São Paulo – ESALQ/DEB -Caixa Postal 96 - 13416-000 - Piracicaba - SP, Brasil; 2. Universidade Federal de São Carlos – CCTS/DCA - Cep: 18052780- Sorocaba - SP, Brasil. *Correspondence to anapaolagomes@hotmail.com

Tema/Meio de apresentação: Ecologia de Ecossistemas/Oral

Headwater catchments are important areas for the river formation, but they are fragile and are often threatened due to their dependence on land contributions. Thus, their land-use/land-cover patterns can play an important role in the water quality conservation. In this context, the aim of this study was to evaluate the relation of land-use/land-cover patterns with the water quality of two headwater catchments of the same watershed, with the same slope, shape and size in the State of São Paulo, Brazil. The land-use/land-cover pattern was analyzed regarding its composition and configuration, by using landscape metrics. Water quality variables were obtained every two weeks during a hydrological year. We performed a multivariate test to check for differences between the catchments based on the water quality data. The catchments presented similar land-use/land-cover composition but differed in terms of landscape configuration. They showed overall good water quality, but the catchment that has aggregated forest cover showed water quality a little higher than the other, which has higher forest fragmentation (MANOVA: Hotelling-Lawley´s $\lambda = 2,86$; $F = 6,55$; $P = 0.001$). Thus, our results showed that the forest cover contributes to the water quality maintenance, however, the forest fragmentation influences negatively on sediment retention. Agricultural practices in these headwater catchments should be managed in order to ensure the water quality maintenance aiming the water sources conservation downstream.

Agradecimentos: Agradecemos à FAPESP pelo apoio à pesquisa (processo n. 2013/03586-6), à UFSCar Sorocaba e USP São Carlos pelo apoio no processo laboratorial.