Phosphatases (EC 3.2.3) are key enzymes in mineralization of phosphorus in soils and hence the cycling of this nutrient in the environment. They are widely distributed in soils and have been widely studied because they catalyze the hydrolysis of organic phosphorus in inorganic form thus making it available to plants. Here samples of Cerrado biome soils from three different phytophysiognomies were collected in the “Trilha do Tatu”, located at Universidade Estadual de Goiás in Anápolis, Goiás, Brazil. Soils (0-15 cm depth) in Cerrado stricto sensu, forest and pasture were used as study soil areas during November 2012 to February 2013. Soil samples were sieved (2 mm) and stored at 4 °C until their use. Physicochemical parameters, such as pH, mineral composition, humidity were determined. The activity of acid phosphatase was measured and compared among the soil samples using p-nitrophenylphosphate as substrate. In the samples held on November (spring) the major activity of phosphatase was found in Forest soils (21.7 U), followed by the samples collected in pasture (11.4 U) and Cerrado sensu stricto (3.8 U). During the summer of 2013 pasture and Cerrado sensu stricto soil samples increased up to five-fold in phosphatase activity, as a result of the amount of organic mater produced by the local vegetation in the rain season. It is observed that the acid phosphatase activity was greatly influenced by the characteristics of soil and climatic conditions of the area.

Keywords: phosphatase, Cerrado, soil
Supported by: CNPq and CAPES