The present study was conducted to determine the relationship between the development of some genotypes of maize (Zea mays L.), wheat (Triticum aestivum L.) and triticale (X Triticosecale Wittmack) with high and low N and P use efficiency (+E and -E) and root activity measured as variations in soil phosphatase activity adjacent rhizosphere (SPAAR) and soil pH adjacent rhizosphere (ASRpH). These genotypes were grown in a greenhouse in humic and molic Andosols and eutric Nitosol with four dosages of nitrophosphated (N+P) fertilizers and four plants in 2 kg pots. SPAAR and ASRpH were measured at the beginning of the experiment and 30 and 90 days after transplant with the Tabatabai method (1994) and a potentiometer, respectively. It was found that, relative to the control, SPAAR increased between 100 and 500% in both groups of soils in treatments without P supplement, mainly in the Nitosol, whose control showed the highest SPAAR. With respect to variations in ASRpH, all three species showed a tendency toward greater soil acidification 30 days after the transplant in the soil with the highest soil organic matter content. The variation of ASRpH induced by maize root activity, showed a range from one to two pH units; for wheat, the change was approximately one unit while for triticale it was three units. After 90 days, the values of ASRpH showed a decrease in acidity tending toward neutral, which was reached at 30 days. This behavior was more marked in genotypes +E than -E, which showed a slow tendency toward neutrality.

Keywords
Acid soil phosphatase, pH, nutrient efficiency.