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MAIZE COB PRODUCTIVITY FERTILIZED WITH DIFFERENT PHOSPHORUS SOURCES AND DOSAGE

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The organic and inorganic phosphorus forms of the soil are influenced by the soil use and management. In cultivated soils, where there are periodic phosphates additions, the management system determines changes in the distribution of forms and phosphorus concentrations in the profile and, more specifically, in the surface layer. The objective of this work was to evaluate the maize cob yield fertilized with different phosphorus sources and dosages. The experiment was carried out in the experimental field of Embrapa Amazônia Oriental, in Belterra City - PA, under a dystrophic Yellow Latosol, with a clay texture. The experimental design was randomized blocks, arranged in a 3x5 factorial scheme, with three replications. Three sources (Simple Superphosphate (SS), Triple Superphosphate (ST) and Natural Reactive Phosphate (Arad) were used and five dosages (0; 60; 120; 180 and 240 kg ha⁻¹) of P₂O₅ were used. The experimental plots, except control treatment, received mineral fertilization of 120 kg ha⁻¹ of N (urea) and 90 kg ha⁻¹ of K₂O (Potassium Chloride), divided in sowing and cover. The maize cultivar used in seeding was AG 7088 PROX, with three seeds per linear meter, whose plots presented dimensions of 5x8 m. The harvest occurred at 141 days after seeding, to determine the maize cobs yield. The data were submitted to variance analysis and the means adjusted to the quadratic polynomial regression and compared by the Tukey test at 5% of probability. The interaction between phosphorus sources and dosages was significant for cob yield. The Arad proved to be inefficient in terms of phosphorus supply to the plants, in view of the non-occurrence of cob yields at any of the applied doses. This fact can be attributed to the low solubility of this type of fertilizer, which promotes longer phosphorus availability. The most efficient interaction in terms of cob yield (6.111 t ha⁻¹) occurred between ST and the dose of 120 kg ha⁻¹ of P₂O₅, decreasing thereafter. In general, the highest increase in cob yield for both SS and TS occurred until the dosage of 120 kg ha⁻¹ of P₂O₅, making it unnecessary to apply higher dosages, noting that dosages greater than 120 kg ha⁻¹ of P₂O₅ cost of production and reduce production. The maize cobs productivity presents a significant response to phosphorus application. The dosage of 120 kg ha⁻¹ of P₂O₅, with ST as the source, provides higher cob productivity. There was no response in productivity when fertilized with Arad.

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