

RELATIVE EFFICIENCY OF SOURCES OF POTASSIUM IN THE FERTILIZATION OF CROP SYSTEM PEAR MILLET AND SOYBEAN

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Abstract

In 2008, the consumption of potassium fertilizer in the Brazilian agriculture was seven million tons, of which 92 % was imported, representing a cost of US\$ 5 billion. The objective of this study was to evaluate the efficiency of sources of potassium in the fertilization of pearl millet (as cover crop) and soybean. The experiments were conducted at the Embrapa Maize and Sorghum, Sete Lagoas, Minas Gerais state, in the 2006/2007 and 2007/2008 growing seasons, on a Dystroferic Red Latosol (clay Oxisol), cultivated with pasture of brachiaria and had Mehlich1 extractable K concentration of 25 mg kg⁻¹ in the top 20 cm. Pearl millet (*Pennisetum glaucum*) was sown in September over the residues of brachiaria, and Soybean (*Glycine max*) was sown in the first week of December, in the two growing seasons. The treatments consisted of three sources of potassium (Potassium Chloride-KCL, Rock-Biotite, and Byproduct-RMS) and four rates (0, 75, 150 and 300 kg K₂O ha⁻¹), applied in the first year, broadcast on the soil surface and incorporated into the soil at 10 to 15 cm depth. The experiment was in random blocks, using a split plot design with three replications. Pearl millet and soybean presented greatest response to K fertilization rates of 150 and 300 kg K₂O ha⁻¹, respectively. The efficiency of the sources of K was KCl > RMS > Biotite.