

**POTASSIUM RELEASE FROM ORGANOMINERAL AND MINERAL
FERTILIZERS UNDER LABORATORY CONDITIONS**

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The production of organomineral fertilizers from agricultural waste has the potential to supply nutrients to production systems and is an environmentally appropriate way of disposing of organic waste. Four NPK organomineral fertilizers were produced based on swine manure compost, being three adapted for organic production systems, in the Fertilizer Technology Laboratory from Embrapa Solos. The objective of this work was to evaluate the release of potassium from organomineral fertilizers in the soil, under laboratory conditions. In each plot, an amount equivalent to 10 mg of K was added, according to the K content of the fertilizers. Each plot corresponded to a plastic cup containing 100 g of Planossolo Háplico soil. The seven treatments in the research were the four organomineral fertilizers, two commercial fertilizers, potassium chloride (KCl) and potassium sulfate (K₂SO₄), and a control without fertilization (without potassium), in a completely randomized design with three replications and six collection periods (2, 7, 15, 42, 90 and 180 days). After fertilization, soil moisture in each plot was maintained at field capacity. After each incubation period, the soil was dried, crushed and sieved, and subsequently taken for analysis of the exchangeable K content of the soil. In all six collections, there was a statistical difference between the treatments with fertilization and the control without fertilization, indicating the effect of potassium application in the soil. The potassium contents in the control varied between 2.3 and 3.5 mg kg⁻¹ during the study period, indicating a soil of very low fertility. In the first collection, the levels of exchangeable K⁺ in the soil varied between 35.7 and 47.6 mg kg⁻¹, with no significant difference between treatments with fertilization. In the collections carried out at 7, 15 and 42 days after fertilization, the exchangeable K⁺ contents in the soil varied between 18.9 and 46.2 mg kg⁻¹. At the end of the study, in the collection at 180 days, there was a statistically significant difference between the treatment fertilized with KCl, with 94.5 mg kg⁻¹, and all other treatments, with levels varying between 35.1 and 50.3 mg kg⁻¹. Knowing that the amount of potassium added in each treatment was the same, it could be observed that KCl was more effective in increasing the levels of exchangeable K in the soil, approaching the expected content of the nutrient in the soil, of 100 mg kg⁻¹. Potassium sulfate, able to organic production systems, was also effective in increasing exchangeable potassium levels, although with lower solubility compared to KCl. The behavior of the organomineral fertilizers, both those produced with K₂SO₄ and that produced with KCl, were similar to each other and similar to the exclusive fertilization treatment with K₂SO₄, which may be an indication of the slower release of potassium in the soil. These results demonstrate the ability of organomineral fertilizers based on swine manure compost in supplying potassium to the soil, compared to commercial fertilizers.