Potassium fixation was measured for 13 Kenyan soils with a range of applied potassium (0 to 1000 mg kg-1). The fixed potassium was measured, and hence is defined in this study, by the difference between the amount of applied K and the increase in the extractable K after equilibrium, using a single 'equilibrium' extraction procedure with 0.25 M CaCl2 as the extractant. At application rates of 50 and 1000 mg kg-1 the fixed potassium varied from -52% to 64% and 7% to 39% respectively. A correlation was found between the K fixation and % clay content at the 1000 mg kg-1 application rate. Estimates of the % fixation by the clay fractions gave 53 to 80% for montmorillonites, 48 to 66% for amorphous clays and 19 to 32% for kaolinites. It is suggested that the amorphous clays may fix potassium by a 'sieve' mechanism.