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1: [Eur J Nutr.](#) 2006 Jun 8; [Epub ahead of print]

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Organic potassium salts or fibers effects on mineral balance and digestive fermentations in rats adapted to an acidogenic diet.

[Sabboh H](#), [Besson C](#), [Tressol JC](#), [Coudray C](#), [Horcajada MN](#), [Coxam V](#), [Remesy C](#), [Demigne C](#).

Unite des Maladies Metaboliques et Micronutriments, INRA de Clermont-Ferrand/Theix (CRNH d'Auvergne), 63122, St-Genes-Champanelle, France.

BACKGROUND: Fibers and potassium (K) organic salts in plant foods are liable to affect Ca and Mg balance at digestive and renal levels, respectively. K organic salts could counteract the acidifying effects of western diets and consequences of excess NaCl. **AIM OF THE STUDY:** To study this question, male rats were adapted to a basal acidifying low-K (LK) diet, or to diets supplemented with a fiber mix (LK/F), or K citrate (HK) or both (HK/F). **RESULTS:** HK and HK/F diets displayed a marked alkalinizing effect in urine and promoted citraturia, but this effect was not modulated by fibers. The effect of fibers on Ca digestive absorption was more potent than K citrate effect on Ca renal excretion. In contrast, K citrate effect on kidney Mg excretion was more effective than that of fibers on Mg digestive absorption, a maximal effect on Mg balance was observed in rats fed the HK/F diet. Digestive fermentations in rats fed the LK/F diet were characterized by high-propionic acid fermentations and succinate accumulation. In rats adapted to the HK/F diet, K citrate supplementation depressed succinate and increased butyrate concentrations. **CONCLUSION:** Organic anions arising from digestive fermentations seem to be not directly involved in the alkalinizing effects of plant foods. Fibers and organic K salts exert distinct effects on Ca and Mg metabolism, but with interesting interactions as to Mg balance, digestive fermentations and urine pH.

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