



707-5 Determination of Low-Molecular-Mass Organic Acids in Aluminum-stressed *Brachiaria* Seedlings by Capillary Zone Electrophoresis.

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Leonidas Passos¹, Marcone A. L. Oliveira², Maiby Cabral Mesquita³, Maria Coletta Vidigal⁴, Fernando A. S. Vaz², Fábio S. Fernandes⁴ and Gislayne A. R. Kelmer⁴, (1)Embrapa, Dairy Cattle, Juiz de Fora, Brazil

(2)Departamento de Química, Universidade Federal de Juiz de Fora, Juiz de Fora, Brazil

(3)Embrapa Dairy Cattle - Recipient of CNPq Fellowship, Juiz de Fora, Brazil

(4)Embrapa Dairy Cattle, Juiz de Fora, Brazil

Abstract:

Toxic aluminum in soils is considered a major limitation for agricultural production, especially in tropical regions. Recent HPLC-based findings with rangeland forage grasses suggest that root apices of Al-tolerant genotypes exude low-molecular-mass organic (LMM) acids as part of Al detoxification mechanisms. However, additional progress in the elucidation of this question remains hampered by procedural constraints, such as complex sample preparation and column preservation, which render currently used methods tedious and limited in scope. As an attempt to expedite LMM acid determination in *Brachiaria* samples, a methodology optimized for simultaneous determination of acetate, citrate, formate, malate, oxalate, pyruvate, succinate and tartarate by capillary zone electrophoresis using phthalate buffer under indirect detection at 230 nm within analysis time about 5 min, was applied. The method yielded distinct and reproducible LMM acid peaks, indicating its high potential as a simple and effective alternative for LMM acid analysis. However, further advancement still depends on the ongoing validation essays with Al-stressed *Brachiaria* tissues.

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