



## **Manganes spatio-temporal variability in an acid rice soil**

L. A. Morales (1) and **A. Paz-González** (2)

(1) Universidad Nacional del Nordeste. Corrientes. C.P. 3400. Argentine , (2) Facultad de Ciencias. A Zapateira. 15.071. La Coruña. Spain.

The aim of this work was to assay the bioavailable manganese spatio-temporal variation of an acid rice soil during different rice growth stages. The experiment was performed on a typical Plintacualf with two consecutive years under irrigated rice, in which 0, 625 and 1250 kg.ha<sup>-1</sup> dolomite were added. Three 11.9 x 20 m samplings were done, (seedling, tillering and flowering), and Mn-Mehlich-1 concentration was assayed.

Days under flood water produced a positive effect on the Mn-Mehlich-1 availability indexes in all the treatments. In the control treatment, the increase was higher during the first 28 days. In parcels with 625 kg.ha<sup>-1</sup> the interaction between added dolomite x days under flood water decreased the data series variance, with the higher decrease during the first 28 days. The variation range in the treatment with 1250 kg.ha<sup>-1</sup> was higher than de 300 mg.kg<sup>-1</sup> during the whole crop cycle.

The adjusted semivariograms, spherical, exponential and linear, for the different treatments and dates, showed low to moderate nugget effect, and in six cases, origin discontinuity was lower than 10% of the sill total value. The range of adjusted semivariograms oscillated between 45 and 80 m. The correlation coefficients of the kriging estimated and experimental values obtained after de cross validation test were always higher 0.66, with mean absolute error close to the ideal and a maximum adimensional mean square error close to the theoretical value. The distribution pattern of available Mn concentration during the different sampling dates and treatments showed some noticeable regularities. During seedling, in the aerobiosis stage, the Manganese content range values were relatively close in the three parcels with dolomite. During the anaerobiosis stage, a tendency is observed towards liberating higher amounts of Manganese

as the dolomite doses increased.