

### **Rice roots H<sup>+</sup>-ATPases pointed out N remobilisation.**

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Certain rice varieties which stock high levels of NO<sub>3</sub><sup>-</sup> recover its deposits in periods of this nutrient lacking. Nitrate recovery is driven by H<sup>+</sup>-ATPases activity. These proton machines are arranged through two biological membranes such as plasmalemm and tonoplast. The assays were carried on in a growth chamber, under 24°C and 12h light per day (475μE.m<sup>-2</sup>.s<sup>-1</sup>), with Hoagland e Arnon (1950) modified nutrient solution. Under these conditions, it was possible to simulate seasonal NO<sub>3</sub><sup>-</sup> flushes through pulses, common at Tropics. Treatments 1 (T1) and 2 (T2) were grown in solution with 0.5 and 5.0 mM N-NO<sub>3</sub><sup>-</sup> until 20 days after emergency (DAE). Plants had N supply removed until 23 DAE, when they received 72 h N pulses. At 21 DAG, root tonoplast and plasmalemm H<sup>+</sup>-ATPases activities were determined (Yoshida et al., 1983). Enzymes from a local and an improved variety – PiauÍ and IAC-47 - were stimulated with 0.5 and 5,0 mM N-NO<sub>3</sub><sup>-</sup> for 72 h. PiauÍ tonoplast H<sup>+</sup>-ATPases 24h without N was higher at T2 roots. However, plasmalemm H<sup>+</sup>-ATPases at IAC-47 roots increased after 5.0 mM N-NO<sub>3</sub><sup>-</sup> pulse (T2). After 72 h pulse, pumps hydrolytic activity was higher at PiauÍ plants. These results confirmed the hypothesis that Nitrogen Use Efficiency at local variety must be due to tonoplast H<sup>+</sup>-ATPases activity to recover NO<sub>3</sub><sup>-</sup> vacuolar stock.

**Key words :** Nitrogen nutrition, tropics, vacuole nitrate recover