

## Glycolysis allowed $\text{NH}_4^+$ assimilation in two rice varieties

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Ammonium can be the single plant's Nitrogen source in certain soils. Its assimilatory pathway is economic and fast, although it demands a close integration with C metabolism. This work intended to recognize C/N integration during ammonium assimilation. Two rice varieties were used: one adapted to Humid Tropic - Piauí - and an improved variety - IAC-47. The assays were carried on in a growth chamber, under 24°C, 12h light per day ( $200 \mu\text{E} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ ), with Hoagland e Arnon (1950) modified solution with  $\text{N-NH}_4^+$  0.1 mM and 1.0 mM until 26 days after emergency. Phosphofructokinase-1 (PFK) activity was used to show carbohydrate metabolism and glutamate dehydrogenase (GDH), glutamine syntetase (GS) and glutamate syntase (GOGAT) monitored ammonium assimilation. PFK activity was enhanced with N doses at both varieties. In Piauí plants, PFK activity was lower than IAC-47. It may has happened due to "bottom up" regulation by glutamate levels. High GDH and low GS activities increased glutamate levels in Piauí plants. On the other hand, ammonium sink at IAC-47 was carried out by GS/GOGAT pathway, which produces glutamine. Under these conditions,  $\text{NH}_4^+$  assimilation differently regulated carbohydrate metabolism at both varieties.

**Key words:** Ammonium, Glycolysis, Rice, Plant Nutrition

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