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**NITROGEN AVAILABILITY IN FERTILIZED PADDY SOILS AS A FUNCTION OF REDOX CONDITIONS AND RICE STRAW INCORPORATION**

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*Nitrogen (N) availability in fertilized rice paddies is the result of a balance of processes mainly the gross rates of N mineralization, microbial immobilization and N losses. Water and crop residue management practices often confound these established relationships making N the most difficult nutrient to manage in rice cropping systems. Detailed information on the driving processes and factors controlling N availability in paddies is therefore highly necessitated. This study aims at investigating and quantifying the interactive effects of soil redox conditions and straw incorporation on fertilizer-N availability in paddy soils. A paddy soil was treated with enriched ammonium-15N and incubated for 160 days under flooded or non-flooded conditions, with or without the addition of rice straw. Changes in total and fertilizer-derived inorganic N forms as well as immobilized N and dissolved organic C with incubation time were determined. The addition of straw significantly reduced N availability under oxic conditions, probably due to the microbial immobilization of the added N in the presence of straw (C/N = 60). In contrast, in anoxic soils straw incorporation resulted in a significant increase in net N supply. Nonetheless, the immobilization of about 47 and 32% of applied N was observed in straw-amended and non-amended anoxic soils, respectively. These results suggest that under anoxic conditions, soil or straw-derived organic matter mineralization could contribute to N availability, partially compensating for the immobilized fertilizer-N. Higher DOC concentrations in straw-amended anoxic soils further point to the supply of labile organic matter for microbial mineralization.*