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**DOES CROP RESIDUE MANAGEMENT INFLUENCE FERTILIZER USE EFFICIENCY IN IRRIGATED RICE?**

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*Although nitrogen (N) supply drives productivity, poor N fertilizer-use efficiency (FUE-N; 40–60% recovery of applied N) is characteristic of irrigated rice systems. N availability over the cropping season depends on N fertilizer management as well as mineralisation, microbial immobilisation and losses, affected, in turn by agricultural practices such as water and crop residue management. In this work, N uptake by irrigated rice under different crop residue management practices have been compared with the aim of defining best management practices able to enhance FUE-N. The experiment carried out on an ongoing long-term trial in Vercelli (NW Italy), involved comparison between: (i) incorporation of residues in autumn after harvest; (ii) incorporation of residues in spring; (iii) burning of residues after harvest and incorporation in spring; (iii) incorporation of residues in spring and delayed flooding (dry seeding). Fertilizer-N uptake and efficiency during the growing cycle was evaluated by <sup>15</sup>N isotope dilution and difference methods. Early incorporation of crop residues fosters the capability of soil to supply fertilizer- and soil-derived N, essential for increasing N uptake. This was facilitated by the faster and more consistent decomposition of the crop residues during the fallow period, thus limiting fertilizer N immobilisation during the growing season. Burning of crop residues adopted when early incorporation is difficult due to rainfall and/or snow precipitations, will avoid the reduced N availability and consequent reduction in crop growth and N uptake resulting from spring incorporation. Dry seeding did not result in greater N availability for crop uptake, as expected.*