

Smart fertilizers: Nano-options towards an improvement Nutrient Use Efficiency

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Since Green Revolution crop fertilization has been essential to feed world. Long term field studies demonstrated that optimal crop nutrition is a fundamental requirement to ensure food security over the current century. Nutrient Use Efficiency (NUE) is result of plant's ability to explore root zone for nutrients, combined with the soil capability to supply nutrients to plant roots. Then, NUE estimated how well plants use the available mineral nutrients. We know that in all agroecosystems NUE of crops is lower than 50% and frequently lower than 5% respectively for macronutrients and micronutrients. As a consequence, we have increasing costs, energy losses and additional costs in terms of environmental pollution. There is a general agreement that new Agro-Nanotechniques can support an increase in crop yield and a contemporary reduction of such negative externalities.