

## Role of Lignolytic Fungi in Improving the Quality of Compost

Mohan Singh, K.K.Bhattacharya and N. Saha

Indian Institute of Soil Science, Nabibagh, Berasia Road, Bhopal 462 038

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**Abstract :** Efficiency of lignolytic fungi viz. *Polyphorus varicolor*, *Phanerochaete crysosporium* and *Pleuretus sajor caju* for hastening lignin and cellulose degradation and production of humic and fulvic acids during composting of rice residues was evaluated. Rice straw inoculation with lignolytic fungi hastened the process of residues decomposition compared to uninoculated control. Among the fungi used, *P. crysosporium* proved more efficient than *P. versicolor* and *P. sajor caju*. *P. crysosporium* reduced C:N ratio to 15.0 compared to 29.0 in uninoculated control and 17 & 18 in *P. sajor caju* and *P. versicolor* inoculated residue. Greater loss in lignin and cellulose content and formation of higher amount of humic and fulvic acids were also observed in presence of lignolytic fungi *P. crysosporium* compared to other two fungi and uninoculated control. Total-N content and cation exchange capacity of material decomposed in presence of *P. crysosporium* were 2.1% and 84.6 meq/100 g compared with 1.3% and 28.4 meq/100 g in uninoculated control. Nitrogen addition during maturity phase of composting produced. It was concluded that inoculation of rice residue with lignolytic fungi *P. crysosporium* accelerated the loss of carbon from lignin and cellulose complex and resulted into the production of a quality compost containing higher amounts of humic and fulvic acids and nitrogen content.

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