

DBT/ Arsenic in paddy

Reducing arsenic contamination of paddy

By Sunderarajan Padmanabhan

New Delhi, April 08: Rice is known to accumulate arsenic from the environment, and this problem is magnified in areas with high arsenic contamination in soil or water. Chronic arsenic exposure in affected areas leads to severe health issues including neurological damage and cancer, with economically weaker populations found to be most affected.

This study by CSIR-NBRI, Lucknow and supported by Department of Biotechnology has resulted in the development of bioaugmentation based safe cultivation practices to minimize arsenic sequestration into rice.

Soil fungi capable of efficiently sequestering arsenic have been isolated and developed into inocula for bioaugmentation. These fungi sequester the arsenic from soil, reducing the amount of arsenic taken up by the rice plant. Simple techniques such as seed-soak, root-soak and soil treatment have been used to treat paddy crop with arsenic sequestering fungi resulting in 24-54% reduction in arsenic content of rice grain. Widespread dissemination of these practices across arsenic affected areas holds significant promise for mitigation of arsenic related diseases and improve quality of life especially for the economically weaker sections of society.

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