

Assessment of arsenic pollution & bioremediation of arsenic contamination from agricultural soils (GAP-2562)

1. Assessment of arsenic pollution in soil, water and major crops (such as rice) of arsenic contaminated sites of Uttar Pradesh and West Bengal.
2. Screening of various arsenic-contaminated sites of Uttar Pradesh and West Bengal for natural soil fungal diversity.
3. Identification of potential tolerant and metal bioremediation soil fungal isolates/ strains with reference to arsenic removal.
4. Assessment of bioremediation and detoxification/ biovolatilization potential of selected soil fungal isolates/ stains.
5. Cloning and Characterization of arsenic methyltransferase from selected tolerant soil fungal isolates/ strains.
6. Demonstration/field trials using tested soil fungalisolates/strains as consortia on rice cultivation and demonstrating low grain arsenic accumulation in rice.
7. Development of biomonitoring and bioremediation strategy using tested soil fungal isolates/strains for arsenic contaminated soil/agro-ecosystem.