

Superabsorbent BARC-Hydrogel (MRIDAMRT) (मृदाअमृत)



Nuclear Agriculture and Biotechnology Division (NA&BTD), BSG, BARC has developed superabsorbent polymer hydrogel (BARC-Hydrogel) using cold ionizing energy, such as gamma-rays and electron-beam. Process preparation thereof makes it more eco-friendly and biodegradable compared to chemically synthesized process. BARC-Hydrogel can absorb and retain pure water up to several hundred times (~400 times) of its own weight and supply upon plant-root demand. BARC-Hydrogel granules can act as a mini water reservoir near the plant root region (rhizosphere) and enhances soil properties by retention of more water and soil aeration. It helps to maintain the good health of plants in semi-arid and arid regions and conserve water by reducing the frequency of irrigation. The use of hydrogel in macro porous medium (sandy soil) is very effective to increase the water holding capacity, which significantly improves the plants health and productivity. The BARC-hydrogel may be suitable to use in various agricultural practices like, afforestation, vertical and terrace gardening, landscaping, horticulture etc.

SALIENT FEATURES OF THE SYSTEM

- Soil augmentation by nutrients and water retention
- No impurities due to radiation based synthesis
- Reduces irrigation frequency
- Improves hydro-physical properties of soil
- Bio-degradable and non-toxic
- Reduces erosion and water runoff
- Enhances plant productivity, especially in arid areas