

**GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:4617

ANSWERED ON:22.04.2015

RADIATION TREATMENT

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Will the Minister of ATOMIC ENERGY be pleased to state:

- (a) whether radiation treatment for recycling of water offers several advantages such as energy required is less than that for heat pasteurisation and there is no addition of chemicals and if so, the details thereof;
- (b) whether radiation treated sewage sludge is a rich source of macro nutrients and if so, the details thereof;
- (c) whether the Department of atomic energy has proposed to coordinate with the Ministry of Water Resources, Rural Development and Ganga Rejuvenation to implement the radiation treatment for city waste in the country; and
- (d) if so, the details thereof and if not, the measures taken in this regard?

Answer

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH) :

- (a) Radiation treatment for recycling of water is not commonly used worldwide. It is an efficient process in terms of energy consumption in comparison to heat pasteurisation. However, technology cost, availability and involvement of huge volumes for treatment could be one of the reasons for it not being popular. On irradiation of water, oxidising and reducing transient species like hydroxyl radical, hydrogen atoms and hydrated electrons are formed which degrade the pollutants and therefore no additional chemicals are needed. BARC has its ongoing programme for developing radiation technology applications and has demonstration facilities to treat sewage sludge and waste water at Vadodara in Gujarat and Navi Mumbai in Maharashtra using gamma radiation and electron beam technology respectively.
- (b) Yes, Sir. Radiation treatment using gamma radiation or electron beam kill disease causing pathogens and make the sewage sludge safer for use or disposal. Some of the important macro/ micro nutrients present in the sludge are carbon, nitrogen, phosphorus, potassium, zinc, manganese, iron and copper.
- (c) No, Sir.
- (d) The Department has an on-going programme of dialogues with various Municipal Corporations to set up radiation facilities for sewage sludge hygienisation.