



Organic Fertilisers

For Prelims: Organic Fertiliser, Organic compost, Cattle manures, Bio-fertilisers, Solid Waste, Biogas.

For Mians: Potential of Organic Fertilizers in India.

Why in News?

India's growth story on the path of economic reforms has transformed the country into one of the fastest-growing economies in the world. With the right policy interventions, India can become the hub of **Organic Fertilizers** production.

What is Organic Fertilizer?

▪ About:

- An organic fertilizer is a fertilizer that is **derived from organic sources, including organic compost, cattle manures**, poultry droppings and domestic sewage.
- Organic fertiliser can be categorised into two segments, according to government rules: **Biofertilizer and Organic Manure**.

▪ Bio-fertiliser:

- Bio-fertilisers are composed of living microorganisms attached to solid or liquid carriers and are useful for cultivable land, as these micro-organisms help in increasing the productivity of soil and / or crops.
 - Examples: Rhizobium, Azospirillum, Azotobacter, Phosphobacteria, Blue Green Algae (BGA), Mycorhiza, Azolla.

▪ Organic manure:

- Organic manure, on the other hand, refers to partially decomposed organic matter like digestate from a biogas plant, compost and vermicompost, which provides nutrients to the soil / crops and improves yield.

What is the Potential of Organic Fertilisers in India?

▪ Utilizing Municipal Solid Waste:

- India produces more than 150,000 tonnes of municipal solid waste (MSW).
- Considering collection efficiency of 80% and organic part of MSW to be 50%, total organic waste generated per day in India comes to **around 65,000 tonnes per day**.
- Even if half of this is diverted to the biogas industry, the **government can leverage this by reducing in import of fossils and fertilisers**.

▪ Utilizing Biogas Effluents:

- There is also great value in the organic fertiliser also known as **digestate, which is the biogas plant's effluent**.
- Biogas can be utilised for heating, electricity and even vehicular purposes (after upgrading), whereas **digestate can help realise the vision to have a second green revolution**.

▪ Increase Soil Fertility:

- Digestate can provide organic carbon to the continuously depleting soil, apart from its standard nutrition value.
- In India at present, bio-fertiliser production is just over 110,000 tonnes (carrier-based 79,000 tonnes and liquid-based 30,000 tonnes) and 34 million tonnes of organic manure, composed of farmyard manure, city compost and vermicompost, among others.
- **Popularity of Organic Farming:**
 - The popularity of organic farming has grown in the domestic market in recent years.
 - The market size for Indian organic packaged food is expected to grow at a rate of 17% and cross Rs 871 million by 2021.
 - The significant rise of this sector is linked to growing awareness about the harmful effects of synthetic fertiliser on soil, rising health concerns, expanding urban population base and an increased consumer expenditure on food goods.

What are the Related Initiatives?

- [Sustainable Alternative Towards Affordable Transportation \(SATAT\) scheme.](#)
- [Paramparagat Krishi Vikas Yojana](#)
- [Sub-mission on AgroForestry](#)
- [National Mission on Sustainable Agriculture](#)
- [Rashtriya Krishi Vikas Yojana](#)

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. Which feature of some species of blue-green algae helps promote them as bio-fertilizers? (2010)

- (a) They convert atmospheric methane into ammonia which the crop plants can absorb readily
- (b) They induce the crop plants to produce the enzymes which help convert atmospheric nitrogen to nitrates
- (c) They have the mechanism to convert atmospheric nitrogen into a form that the crop plants can absorb readily
- (d) They induce the roots of the crop plants to absorb the soil nitrates in larger quantities

Ans: (c)

Exp:

- Cyanobacteria or blue-green algae is an example of a bio-fertilizer, a type of organic fertilizer which contains living organisms and harnesses naturally occurring inputs like solar energy, nitrogen, and water to ensure soil fertility and plant growth
- Blue green algae is photoautotrophic microbes. They have specialised cells which utilises solar energy to reduce atmospheric N₂ into Ammonia. Ammonia is used by plants for growth and increased production.
- **Therefore, option (c) is the correct answer.**

Source: DTE

