Nano DAP Fertilizers

Why in news?

During Interim Budget 2024 the Central government announced the expansion of the application of Nano DAP on various crops in all agro climatic zones.

What is the difference between Nano DAP and conventional DAP?

Key aspects	Conventional DAP	Nano DAP
About	Di-Ammonium Phosphate is high in phosphorus (P) that stimulates root establishment and development, it is applied just before or at the time of sowing.	Indian Farmers Fertiliser Cooperative's (IFCCO's) Nano DAP contains 8% Nitrogen and 16% Phosphorus by volume.
Usage	It is the second most commonly used fertiliser in India after urea.	IFFCO's Nano DAP is the only Nano fertilizer approved by the Ministry of Agriculture and included in the Fertilizer Control Order.
Formation	It comes in granular form.	It comes in liquid form, it has an advantage in terms of surface area to volume, as its particle size is less than 100 Nanometre (nm).
Efficiency	It is less efficient than Nano DAP.	Nano DAP (liquid) can offer benefits in terms of surface area to volume as the particle size is less than 100 nanometres.
Cost effective	50 kg of DAP is Rs 1350 which is more than twice the amount of Nano DAP.	500 ml of Nano DAP is equivalent to 50 kg bag of conventional DAP priced at only Rs 600.
Logistics	It is less convenient to store and use when compared with Nano DAP.	It is pocket friendly, easier to store, transport and use than DAP.

What is the significance of Nano DAP?

- **Alternative-** In 2021 IFCCO, launched Nano urea in liquid form as an alternative to conventional urea.

In 2023 IFFCO launched liquid nano di-ammonia phosphate (DAP), the first in the world.

- **Sustainable solution**- In the agriculture sector, Nano DAP is a sustainable option for farmers towards smart agriculture and to combat climate change.
- **Efficiency-**Nano tiny particle enables fertiliser to enter easily inside the seed surface or through stomata and other plant openings.
- **Better assimilation**- Nano clusters are functionalized with bio-polymers and other excipients which leads to higher seed vigour, more chlorophyll, and photosynthetic efficiency.
- **Increase in quality**- Nano DAP will provide much better quality, reduces input cost and increase in crop yields.
- **Precision farming**- Nano DAP through targeted application can help fulfill the nutritional requirement of crops without harming the environment.
- **Impact on soil**- It has reduced impact on soil and improve the fertility of the land, the farmers can increase the number of earthworms on the land.
- **Reduce subsidy burden**- It will lead to a reduction in imports as well as the government's fertiliser subsidy bill.

Quick facts

Indian Farmers Fertiliser Cooperative
• It is a ***multi-state cooperative society*** which is wholly owned by Cooperative Societies of India. • **Established-** 1967. • **Headquarters-** New Delhi. • **Liquid nano urea-** IFFCO commissioned the Kalol liquid nano urea plant at Gujarat, the country's first in 2021. • **Nano DAP-** It is the first in world launched in 2023.

References

1. Indian Express- Nano DAP fertiliser budget
2. PIB- Nano DAP fertiliser

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