

Balanced Fertilisation

Why in news?

Capping consumption of urea and DAP to correct worsening plant nutrient imbalance is likely to be a key policy goal for the government post the Lok Sabha polls.

Why there is a need of balanced fertilisation?

- **Overutilization**- Fertiliser use has seen a tremendous increase in India and in other parts of the world with the spread of Green Revolution technology.

India's urea consumption in 2024 is 16.9% higher than the urea consumption in 2013-14

- **Imbalance use**- Over the years, the usage ratio of NPK (Nitrogen (N), Phosphorus (P), and Potassium (K)) has become more imbalanced, in 2012-13 it had raised to 8.2:3.3: 1 which indicates a higher use of N that can lead to reduced efficiency of fertilizer use and potential environmental issues.

The ideal NPK ratio, which stands for nitrogen (N), phosphorus (P), and potassium (K), is indeed considered to be 4:2:1 in India.

- **Concerns with Nutrient Based Subsidy**- It aimed at promoting balanced fertilization, initially led to a decline in the consumption of certain fertilizers like DAP and MOP, but it failed to control urea consumption due to its exclusion from the subsidy scheme.
- **Price control**- Recent price controls on non-urea fertilisers have led to nutrient imbalances, with DAP becoming the “new urea” due to its lower price compared to other complex fertilisers.
- **Proper regulation**- Balanced fertilisation aims to encouraging the use of nutrients in correct proportions and discouraging excessive use of fertilisers like urea, di-ammonium phosphate (**DAP**) or muriate of potash (**MOP**).
- **Success of neem coated urea**- Neem oil acts as a *nitrification inhibitor* allowing more gradual release of nitrogen, this improved the nitrogen use efficiency and reduced the quantity of urea needed per acre.
- **Increased usage**- Though the government has regulated urea usage through compulsory neem-coating and sulphur-coated urea (37% Nitrogen and 17% Sulphur) the consumption of urea has still continued to increase.

Sulphur coated urea reduced the standard urea bag size from 50kg to 40kg with 12.5% price hike for optimizing nutrient utilization

- **Import dependency** - India heavily relies on imports for fertilisers, including finished products and raw materials. Hence the change in price can impact India's foreign exchange outflow and the government's subsidy burden.
- **Drop in prices**- The price of urea, DAP and MOP has been dropped significantly in 2022-23 due to Russia-Ukraine war and Houthi rebel attacks in Red Sea.

Ships carrying DAP and rock phosphate from Morocco's Jorf Lasfar port now take 40 days instead of the usual 24-26 days to reach India.

- **Opportunity for India**- The cooling international prices provides flexibility for next government to rationalize MRPs of fertilizers, it could bring urea under NBS system and adjust subsidy rates for other nutrients.

Nutrient Based Subsidy scheme

- **Launch year**- 2010
- **Aim**- To encourage soil-balanced fertilization and increase agricultural productivity
- It provides subsidies for *non-urea-based fertilizers* based on the nutrients (N, P, K, and S) they contain.
- **Administration**- Department of Fertilizer, *Ministry of Chemicals and Fertilizers*.
- **Coverage**- Phosphatic and Potassic (P&K) Fertilizers.
- **Subsidy**- A fixed amount of subsidy is decided on annual basis, is provided on subsidised P&K fertilizers depending on their nutrient content.
- **MRP**- It is fixed by fertilizer companies as per *market dynamics* at reasonable level which is monitored by the Government
- **Objectives**-
 - To promote balanced use of fertilizers.
 - To reduce subsidy burden on the Government.
 - To improve availability of fertilizers to farmers.
 - To encourage competition among fertilizer companies
- **Features**- It considers the domestic and international cost of fertilizers, the country's inventory levels, and the currency exchange rate.
- **Additional subsidies**- It is provided for fertilizers that are enriched with secondary and micronutrients like zinc and molybdenum (Mo).
- **New guidelines**- The Department of Fertilisers has issued detailed guidelines for the evaluation of "reasonableness" of the MRPs for all non-urea fertilisers covered under NBS.

What lies ahead?

- Establishing a proper price hierarchy among fertilizers is essential to incentivize balanced fertilization. This could involve pricing DAP higher, MOP lower, and complexes in between to reflect their nutrient content and encourage optimal usage.
- Promoting the use of complex fertilizer (mix of nutrients in balanced proportion) can help provide a balanced nutrient profile tailored for a wider range of crops and soil types.
- Exploring innovative fertilizers like sulphur-coated urea can offer additional options

for balanced fertilization as they provide a gradual release of nutrients, reducing the risk of leaching and optimizing nutrient uptake by plants.

- The government can encourage farmers to adopt more sustainable and efficient fertilization practices, leading to improved crop yields, reduced environmental impact, and greater resilience in the agriculture sector.

References

1. [Indian Express- Push for balanced fertilisation](#)
2. [Niti Aayog- Fertiliser use and imbalance in India](#)

