Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 05, Issue: 05 (SEP-OCT, 2025)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Fertilizer Application in Jammu and Kashmir

*Archi Kalsotra
Lovely Professional University, Phagwara, Punjab, India
*Corresponding Author's email: arkalsotra12@gmail.com

Fertilizer management plays a vital role in sustaining agriculture across Jammu & Kashmir, where diverse agro-climatic zones support both staple crops and high-value horticulture. Despite the region's rich agricultural potential, fertilizer use remains below the national average, leading to nutrient imbalance, soil fertility decline, and yield stagnation. This article reviews the current status of fertilizer application in J&K, highlights crop-specific nutrient requirements, and emphasizes the importance of soil testing, balanced NPK use, organic amendments, and modern techniques such as fertigation. It also discusses the challenges of limited access, farmer awareness, and supply constraints, while outlining policy interventions like the Soil Health Card programme and integrated nutrient management initiatives. The article concludes that site-specific, balanced fertilization combined with sustainable practices can enhance productivity, maintain soil health, and secure the long-term agricultural future of the Union Territory.

Introduction

Agriculture in Jammu & Kashmir (J&K) is unique, spanning the fertile plains of Jammu to the temperate valleys and orchards of Kashmir. With paddy, wheat, maize, saffron, and apples as dominant crops, fertilizer management is crucial for productivity and long-term soil health. Yet, the region's average fertilizer use remains much lower than the national average, leading to nutrient gaps that threaten both yield and soil fertility.

Agro-Climatic Diversity and Cropping Pattern

Jammu Region: Sub-tropical climate with fertile alluvial soils, supporting paddy, wheat, pulses, and oilseeds.
Kashmir Valley: Temperate zone, best known for horticulture—apples, walnuts, pears, apricots—and also paddy in lowlands.
Ladakh Highlands (recently separated UT): Cold-arid conditions with limited but high-value crops like barley, vegetables, and apricots.
This diversity demands site-specific fertilizer recommendations rather than blanket application practices.

Current Status of Fertilizer Use

Average application: ~38 kg nutrients per hectare, much lower than the all-India average.
Heavy reliance on nitrogenous fertilizers (mainly urea), while phosphorus, potassium, and micronutrients are often neglected.
Soil Health Card (SHC) programme has improved awareness, but coverage and adoption at farmer level remain limited.
The imbalance has led to nutrient mining, declining soil organic matter, and stagnating crop yields in several districts.

Principles of Efficient Fertilizer Application

1. Soil Testing First: Use Soil Health Card data to decide fertilizer doses.

2. Balanced NPK: Avoid over-dependence on nitrogen; supplement with phosphorus, potassium, and micronutrients.
3. Split Applications: Apply nitrogen in splits (e.g., basal + tillering + panicle stages in paddy) to reduce losses.
4. Integrate Organics: Farmyard manure, compost, and green manures improve soil structure and nutrient retention.
5. Use Modern Techniques: Drip fertigation and foliar sprays for orchards increase nutrient use efficiency.

Crop-Specific Recommendations

Paddy & Wheat: Apply balanced NPK as per soil test; nitrogen in 2–3 splits; avoid late heavy doses.
Maize: Apply phosphorus and potassium along with nitrogen; critical top-dressing at pre-tassel stage.
Apple Orchards: Nutrient needs vary with age and bearing; potassium is vital for fruit quality, while nitrogen should be split across spring and post-harvest periods.
Saffron: Requires small but precise doses of NPK along with organic manures to maintain soil fertility in fragile ecosystems.

Challenges in J&K

Limited access to soil testing labs and extension services in remote areas.
Dependency on urea due to its lower cost compared to balanced fertilizers.
Transport and availability issues in hilly and border districts.
Lack of awareness about micronutrient and bio-fertilizer use.

Policy and Extension Support

Soil Health Card Scheme: Provides crop- and soil-specific fertilizer recommendations.
State Agriculture Department Advisories: Seasonal nutrient advisories for major crops.
Promotion of Integrated Nutrient Management (INM): Combining chemical, organic, and bio-fertilizers.
Subsidies for Drip Irrigation & Fertigation: Encouraging efficient use of fertilizers in orchards.

Way Forward

For sustainable and profitable farming in J&K:
Expand soil testing facilities and ensure farmer-friendly advisory services.
Promote balanced fertilization and discourage single-nutrient dependency.
Encourage organic matter incorporation in orchards and field crops.
Strengthen extension demonstrations on fertigation and micronutrient management.
Foster public-private partnerships for timely supply of quality fertilizers in remote belts.

Conclusion

Fertilizer use in Jammu & Kashmir is not just about boosting yields—it is about maintaining the delicate balance between productivity, soil health, and sustainability. With site-specific recommendations, integrated nutrient management, and modern techniques like fertigation, the region can achieve both higher productivity and long-term ecological balance.