



Columbia Nursery

Understanding N-P-K in Fertilizers: A Guide for Gardeners

What Does N-P-K Mean?

When you look at a fertilizer package, you'll see three numbers, like 10-10-10 or 5-10-5. These represent the amounts of three primary nutrients:

Letter	Nutrient	Purpose in Plant Growth
N	Nitrogen (N)	Promotes leafy growth and green color
P	Phosphorus (P)	Supports root development and flower/fruit production
K	Potassium (K)	Aids in overall plant health, disease resistance, and drought tolerance

How to Read a Fertilizer Label

A fertilizer labeled 10-10-10 means:

- 10% Nitrogen (N)
- 10% Phosphorus (P) (listed as phosphate, P₂O₅)
- 10% Potassium (K) (listed as potash, K₂O)

The rest of the bag contains fillers or other nutrients that help distribute the fertilizer evenly.

What Each Nutrient Does

Nitrogen (N)

- Encourages leafy growth
- Helps plants develop lush green color
- Especially important for lettuce, spinach, grass, and other leafy plants

Phosphorus (P)

- Promotes strong root systems
- Aids in flower and fruit development
- Vital for transplants, blooming flowers, and vegetable production



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Potassium (K)

- Boosts overall plant health
- Improves disease resistance and stress tolerance
- Helps plants cope with drought or extreme temperatures

Choosing the Right Fertilizer

Goal	Recommended NPK Ratio
Green, leafy growth	Higher N (e.g., 20-10-10)
Root development & blooms	Higher P (e.g., 5-10-5)
Overall health & fruiting	Balanced or higher K (e.g., 10-10-10 or 5-5-10)

Tips for Use

- Always follow label instructions to avoid over-fertilizing
- Test your soil to know what your plants actually need
- Water plants well after fertilizing

Need Help?

Visit our garden center for advice on choosing the right fertilizer for your garden. We're happy to help you grow healthier plants!