

## **Managing Nitrogen**

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With the exception of certain pesticides, nitrogen fertilizer was the most oversold agricultural/horticultural chemical in the last century. Now even major farming publications are warning against the dangers of excess nitrogen and calling for a sustainable system that emphasizes minimum tillage and the use of compost and legume cover crops. For fast growing crops such as vegetables, side dressings with organic fertilizers are recommended to maintain an adequate supply of nitrogen as well as other nutrients.

Too much nitrogen makes leaves secrete sugars and amino acids which attract insect pests and fungal pathogens. The problem is made worse when potassium levels are low, since potassium immobilizes sugars and amino acids. Nitrogen applications must be balanced with potassium to avoid excessive production of compounds that attract pests and diseases.

Other changes are occurring in fertilizer usage. Feeding of mature trees and shrubs is now considered unnecessary and even deleterious. And the once-prevalent nursery practice of giving young woody plants and perennials large amounts of fertilizer to accelerate their growth is no longer advised. Gardeners are told to mix small amounts of slow-release low-nitrogen fertilizer when planting woody plants, and to do the same each fall in the second and third years after planting.

One of the few times when a fast-acting fertilizer is justified is when prolonged heavy spring and summer rains leach nitrogen from the soil. This can stunt new growth and reduce flowering, so Perdue University horticulturists advise applying 1 to 2 cups of 5-10-5 fertilizer per 100 square feet.