

Article title	Integrated Nitrogen Fertilization for Intensive and Sustainable Agriculture
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Keywords	Decision support systems, mineralization, nitrification, fertilizers
Abstract	<p>Increased efficiency of land use and resource-use are critical for agriculture to feed the ever increasing population and yet remain sustainable for the future generations. Mineral fertilizers, particularly, nitrogen (N) fertilizer has played a very important role in meeting the increased food demand and in saving millions of hectares of marginal and wildlife reserves from coming under cultivation. Apart from higher yields per unit land, N application also results in higher protein content. Improper use of N fertilizers due to high application rates, incorrect source and method of application, and poor timing of application have led to air and water pollution and economic losses. Integrated and balanced N fertilization results in a win-win situation with intensive and sustainable agriculture that feed the world without harming the environment. Since multitude of management, soil, crop, and weather-related factors control soil and plant N dynamics, N management recommendations based on field trials alone are too costly and time-consuming. Dynamic N management recommendations that are both site— and season-specific combine field trials with decision support systems (DSS) that simulate crop growth and N transformations as a function of above-mentioned factors. Innovative N fertilizer products and N efficient plant types will further improve N use efficiency.</p>
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