

# Fertilizer Best Management Practices— Making the Best Better

By Paul E. Fixen and Harold F. Reetz


Fertilizer best management practices (BMPs) are being identified and refined by PPI staff with support obtained by the Foundation for Agronomic Research (FAR), through a Conservation Innovation Grant (CIG) awarded by the USDA-Natural Resources Conservation Service (NRCS). The project under the 3-year grant (68-3A75-5-166) runs through 2008.

Stakeholder teams are being organized in each of six regions in North America. PPI regional directors will chair these groups, composed of a cross-section of members representing Cooperative Extension staff, farmers, NRCS personnel, local agribusinesses, crop consultants, and others as appropriate. The teams will meet at least twice a year during the project to review materials being developed and to advise the project leaders.

The BMP guidelines and other training materials will be presented to producers and stakeholders through field days and at national and regional Information Agriculture conferences. A National Fertilizer Best Management Practices conference is planned as part of InfoAg 2007 to promote understanding and adoption of new BMPs. Information will also be shared through websites, on-line modules, and other training methods.

The six cropping systems that have been identified for this project are:

- Irrigated corn in the Great Plains
- Potato production in the Northwest
- Spring cereal/pulse rotations in North Dakota
- Midwest corn/soybean systems
- Cotton rotations in the Midsouth
- Forage crops for dairy farms in the Northeast

The concept of applying the right fertilizer at the “right rate, right time, and right place” is a guiding theme in the series. This issue of *Better Crops with Plant Food* features six brief articles discussing these topics. They serve as a starting point for the efforts of the regional CIG teams. Some BMPs are common to all cropping systems, while others are not. To avoid repeating these BMPs, they are included in the article beginning on page 4...but the focus of the remaining articles is on the unique practices for the specific cropping systems. Even more thorough discussion of the six cropping systems appears in a series of *News & Views* which are available in print or as PDF files at the PPI website: [www.ppi-ppic.org](http://www.ppi-ppic.org). 

BMPs for Fertilizer Management in the Great Plains		
Category	Major Action	Resource/Support
Soil	Use soil test results to guide fertilizer application rates and timing.	NRCS, State Extension, Private Consultants
Plant Selection	Choose crop varieties that are adapted to the soil and climate conditions of the region.	State Extension, Private Consultants
Planting Date	Plant crops at the optimal time for the region to maximize yield and nutrient use efficiency.	State Extension, Private Consultants
Planting Depth	Plant crops at the optimal depth for the region to ensure good seed-to-soil contact and moisture availability.	State Extension, Private Consultants
Planting Density	Plant crops at the optimal density for the region to maximize yield and nutrient use efficiency.	State Extension, Private Consultants
Planting Method	Use planting methods that minimize soil erosion and nutrient loss.	NRCS, State Extension, Private Consultants
Planting Equipment	Use planting equipment that is well-maintained and calibrated for accurate fertilizer application.	State Extension, Private Consultants
Planting Fertilizer	Apply fertilizer at the optimal rate and timing for the region to maximize yield and nutrient use efficiency.	NRCS, State Extension, Private Consultants
Planting Fertilizer Type	Use fertilizer products that are suitable for the soil and climate conditions of the region.	State Extension, Private Consultants
Planting Fertilizer Placement	Place fertilizer in the soil zone where it is most available to the plant.	NRCS, State Extension, Private Consultants
Planting Fertilizer Timing	Apply fertilizer at the optimal time for the region to maximize yield and nutrient use efficiency.	State Extension, Private Consultants
Planting Fertilizer Rate	Apply fertilizer at the optimal rate for the region to maximize yield and nutrient use efficiency.	NRCS, State Extension, Private Consultants
Planting Fertilizer Source	Use fertilizer products that are produced in a sustainable and environmentally sound manner.	State Extension, Private Consultants
Planting Fertilizer Storage	Store fertilizer products in a secure and safe manner to prevent loss and contamination.	State Extension, Private Consultants
Planting Fertilizer Handling	Handle fertilizer products in a safe and responsible manner to protect human health and the environment.	NRCS, State Extension, Private Consultants
Planting Fertilizer Application	Apply fertilizer products in a precise and accurate manner to ensure optimal nutrient availability.	NRCS, State Extension, Private Consultants
Planting Fertilizer Evaluation	Monitor crop growth and nutrient status to evaluate the effectiveness of fertilizer management practices.	State Extension, Private Consultants
Planting Fertilizer Record Keeping	Keep accurate records of fertilizer application rates, timing, and results to inform future decisions.	State Extension, Private Consultants
Planting Fertilizer Training	Participate in training programs and workshops to stay current on the latest fertilizer management practices.	State Extension, Private Consultants
Planting Fertilizer Research	Support and participate in research projects that aim to improve fertilizer management practices.	NRCS, State Extension, Private Consultants
Planting Fertilizer Extension	Share knowledge and resources with other producers to promote the adoption of best management practices.	State Extension, Private Consultants
Planting Fertilizer Policy	Advocate for policies and regulations that support sustainable and responsible fertilizer management.	NRCS, State Extension, Private Consultants
Planting Fertilizer Compliance	Follow all applicable laws and regulations regarding fertilizer use and application.	NRCS, State Extension, Private Consultants
Planting Fertilizer Innovation	Explore and adopt new technologies and practices that improve fertilizer management efficiency.	NRCS, State Extension, Private Consultants
Planting Fertilizer Sustainability	Implement fertilizer management practices that are economically, environmentally, and socially sustainable.	NRCS, State Extension, Private Consultants
Planting Fertilizer Resilience	Develop fertilizer management plans that are resilient to climate change and other uncertainties.	NRCS, State Extension, Private Consultants
Planting Fertilizer Adaptability	Adjust fertilizer management practices to changing conditions and requirements.	NRCS, State Extension, Private Consultants
Planting Fertilizer Flexibility	Use flexible fertilizer management strategies that can be adjusted to different crop and soil conditions.	NRCS, State Extension, Private Consultants
Planting Fertilizer Scalability	Implement fertilizer management practices that can be scaled up or down to fit different farm sizes.	NRCS, State Extension, Private Consultants
Planting Fertilizer Transferability	Share and learn from fertilizer management practices that have been successful in other regions.	NRCS, State Extension, Private Consultants
Planting Fertilizer Replicability	Ensure that fertilizer management practices can be consistently replicated across different farms and regions.	NRCS, State Extension, Private Consultants
Planting Fertilizer Generalizability	Identify fertilizer management practices that can be applied to a wide range of crop and soil conditions.	NRCS, State Extension, Private Consultants
Planting Fertilizer Specificity	Develop fertilizer management practices that are tailored to the specific needs of different crops and soils.	NRCS, State Extension, Private Consultants
Planting Fertilizer Precision	Use precision agriculture techniques to optimize fertilizer application rates and timing.	NRCS, State Extension, Private Consultants
Planting Fertilizer Accuracy	Ensure that fertilizer management practices are based on accurate data and information.	NRCS, State Extension, Private Consultants
Planting Fertilizer Reliability	Implement fertilizer management practices that are reliable and consistent over time.	NRCS, State Extension, Private Consultants
Planting Fertilizer Validity	Use evidence-based fertilizer management practices that are supported by scientific research.	NRCS, State Extension, Private Consultants
Planting Fertilizer Credibility	Build trust and credibility with other producers and stakeholders through transparent and open communication.	NRCS, State Extension, Private Consultants
Planting Fertilizer Authority	Establish authority and expertise in fertilizer management practices through ongoing education and training.	NRCS, State Extension, Private Consultants
Planting Fertilizer Expertise	Develop and maintain expertise in fertilizer management practices through continuous learning and improvement.	NRCS, State Extension, Private Consultants
Planting Fertilizer Competence	Ensure that fertilizer management practices are performed with competence and skill.	NRCS, State Extension, Private Consultants
Planting Fertilizer Proficiency	Use fertilizer management practices with proficiency and confidence.	NRCS, State Extension, Private Consultants
Planting Fertilizer Skillfulness	Apply fertilizer management practices with skill and precision.	NRCS, State Extension, Private Consultants
Planting Fertilizer Dexterity	Use dexterity and manual skill to perform fertilizer management tasks.	NRCS, State Extension, Private Consultants
Planting Fertilizer Agility	Respond quickly and effectively to changes in fertilizer management requirements.	NRCS, State Extension, Private Consultants
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Tables such as this are available for review on-line for each of the six cropping systems.

Dr. Fixen is PPI Senior Vice President, Americas Program Coordinator, and Director of Research, located at Brookings, South Dakota; e-mail: [pfixen@ppi-far.org](mailto:pfixen@ppi-far.org). Dr. Reetz is FAR President, located at Monticello, Illinois; e-mail: [hreetz@ppi-far.org](mailto:hreetz@ppi-far.org).