

## Extending Knowledge - Changing Lives

### Delaware Nutrient Management Certification (2013–2015)

*How a comprehensive education program for production agriculture is increasing the health of soil and water in Delaware's watersheds*

#### ISSUE

Nutrient impairments are common in Delaware waters, resulting from non-point sources of nitrogen (N) and phosphorus (P) from agricultural and urban areas. Agricultural nutrient losses are linked to the use of manures and inorganic fertilizers to supply nutrients to growing crops. The 1999 Delaware Nutrient Management Act mandated that individuals who fertilize more than 10 acres of land, own/manage more than eight animal units, apply nutrients for a fee or consult in the business of nutrients must become nutrient certified:

- 6 to 12 hours of classes required for initial certification
- 6 CEUs required after certification every three years (excluding nutrient consultants)
- 5 CEUs required annually for nutrient consultants

#### RESPONSE

University of Delaware (UD) Cooperative Extension offers initial nutrient management certification training to individuals as required by law. Statewide training sessions are led by UD Cooperative Extension, with oversight by the Delaware Nutrient Management Commission and the Delaware Department of Agriculture. The Delaware Nutrient Management Certification program is unique among Chesapeake Bay states in that farmers and landscape professionals receive comprehensive nutrient management education on the following: water quality, fertilizer and manure management, animal mortality management, soil testing and plant analysis, and plant selection. Since 2001, UD Cooperative Extension has certified more than 2,750 individuals at four certification levels (nutrient generator, private nutrient handler, commercial nutrient handler and nutrient consultant). A 2015 survey of all individuals certified between 2007 and 2015 identified positive changes in behavior as a result of certification. Since 2013, UD Cooperative Extension has offered 61 initial certification sessions and certified 357 people. What's more, 140 private nutrient handlers certified between 2013 and 2016 indicated that they make nutrient management decisions on 36,303 acres of cropland in Delaware (i.e., 26% of Delaware's 439,157 acres of total cropland).

#### IMPACT

The results of 293 pre- and post-test evaluations conducted between 2013 and 2016 determined the benefits of nutrient management certification:

- 70% of participants (205 of 293) increased their knowledge of Delaware's nutrient management issues and certification requirements after 6 hours of instruction
- 96% of respondents (246 of 256) indicated an improved ability to interpret a soil test report after completing the third session
- 84% of private nutrient handlers certified between 2007 and 2015 improved management of N and P
- 80% applied soil test analysis to increase production and reduce fertilizer use/cost
- An estimated 53.4 tons of N and 1.82 tons of P were prevented from leaving agricultural fields and entering sensitive waterbodies (e.g., Chesapeake Bay and Delaware Bay)