Bay Farms: A Regional Nutrient Use Efficiency Initiative

Overall Project Objectives:

Involve farmers, agribusiness, ag service providers in participatory program to improve efficiency of N management

Address key barriers -- lack of feedback about the accuracy of nitrogen application rates, and a need to more fully engage farmers in nutrient management decisions

Work with all types and sizes of farms – English and Plain Sect; large and small; dairy, hog poultry, grain

Guiding principles:

- Nitrogen management requires an adaptive approach due to uncertainty in the amount of N needed
- Solutions to nutrient challenges must be economically viable
- Solutions to nutrient challenges require farmers to take ownership of the initiative
- Impact on nutrient challenges will be far greater if model is easily replicated elsewhere

Getting Started:

- 2003 – EDF interest in developing a collaborative project to 1) leverage innovative, information-based tools to improve nutrient use efficiency and 2) leverage EQIP to increase use of these tools.
- Brought together TeamAg Inc (leading ag consulting group in Lancaster, PA); Tom Morris of UConn; Walter Smith of NRCS; Mike Brubaker (local community leader)
- 2004 – Lancaster Farms project launched – contribution agreement between NRCS in PA and EDF to work with 22 farmers to use PSNT and CSNT
- 2005 – NRCS introduced special EQIP project in Lancaster to provide incentive payment for using PSNT and CSNT
- 2006 – Expanded into Lebanon and Chester Counties
- 2007 – Added guided stalk sampling and aerial imagery to project in collaboration with ISA

Bay Farms – on the ground:

- CSNT and other tests -- PSNT and chlorophyll meter – with field-by-field records
- Key strategy: Discuss how to use information in winter meetings with small groups of farmers
- Farmers adapt N management based on discussions
- Also guided stalk sampling, aerial imagery, replicated test plots

Progress so far:

- 2004: 22 English farms, 3,708 acres; 3 winter meetings
- 2008: 22 Plain Sect and 83 English farms, 900 fields and more than 12,000 acres, 8 farmer meetings in January

Impact on the ground:

Results of winter 2008 farmer survey showed major changes in N management:

- 32 farmers in survey
- Average decrease in N from manure and fertilizer was 27 pounds/acre on 4,750 acres
- If N cost is $0.75/pound, savings were $131,287 on 3,890 acres
- N rate increased on 860 acres

One farmer's story: Matt Young, Red Knob Farm: Making nutrient management changes and seeing the benefits

Farmer Ownership and Leadership:

- 2008: Farmers formed grower association -- Bay Farms Program
- Purpose of group: implement economically and environmentally sound agricultural nutrient use efficiency practices and approaches through participatory science and education.
- Core belief: Environmentally sound and economically beneficial practices are compatible and possible.

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