Responding to a Late Season Hail Damage Event in the Amish Community in Pennsylvania

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Background

- Two severe hail events occurred in Lancaster County, PA during the first week of August, 2008.
- Over 10,000 acres of corn and 1,200 acres of tobacco, as well alfalfa and soybeans were severely damaged or destroyed.
- Most corn was at R3 to R4 growth stage and from 50 – 90% defoliated
- This region is heavily populated by Anabaptists, (mostly Amish) who primarily operate small dairy farms. (average farm size 40 acres)
- The initial response was to provide yield and forage quality estimates based on defoliation studies. However, we quickly realized that bruising on the ear had caused kernel rupture and mold development, a more significant issue.
- Strategies needed to be developed to minimize and deal with yield loss, mold and yeast, and potential mycotoxin development.

Hail Damaged Tobacco

Developing Molds

Damaged Corn

Situation development

- Damaged corn rapidly developed moldy ears and significant stalk rots. Some fields had 100% of the ears with moldy areas.
- Rumors spread that large acreages should be disked down to avoid mycotoxin contamination.
- County educators spearheaded discussions with feed & grain industry representatives, local farmers and leadership from within the Amish community
- The Lancaster County Agronomy Educator met with the Amish Storm Aid Committee to develop a corn silage relief program.
- Forage tests show many fields with over 5 million yeast and 750,000 mold spores per gram of fresh silage.

Actions Implemented

- A series of press releases to the local weekly farm newspaper educated and informed producers about the potential for toxins and steps to take to lessen this threat.
- A fact sheet entitled “Considerations for Hail Damaged Corn” was created and widely distributed within the affected area.
- The Amish Storm Aid Committee and Lancaster County Extension held a meeting where 65 affected farmers attended. Strategies to ensile, roast, market or destroy fields was presented.
- Teams evaluated fields and approved farms to destroy the worst fields and receive relief silage.

Ensiling was critical. Extension and industry assisted farmers in accurate moisture assessment. Several producers bagged silage rather than trust good fermentation to older upright silos. Some roasted, ground and bagged the moldy grain.

Farmer Response

- Farm response was multifaceted.
- 23 farms destroyed most or all of their corn crop and received relief silage.
- Silages were made at slightly wetter moistures.
- Inoculants and preservatives were used to speed fermentation.
- Some farmers flame roasted, ground and bagged dry shelled corn rather than make HMC.
- Some silages were sold off dairy farms to beef producers.
- Some producers chose to sell standing corn to elevators at reduced prices and purchase feed or receive relief silage

Follow-up and Results

- Farmers reported very little mold growth in the silo even from severely infested standing corn.
- Mycotoxin and complete forage analysis were taken on fermented silages as they were fed.
- Surprisingly, very few cases of mycotoxin production were found.
- Most silage samples reported lower than normal levels of energy and digestibility.
- As a result of a rapid response by Extension and the community, most farmers had limited negative impact from a potential nightmare.

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