At Stern Farms we always evaluate new technology that is being developed to see how it might benefit our operation. Biotechnology is a factor that affects our purchases when we consider sourcing seed. When purchasing seed we evaluate the latest genetics and latest biotech events to see how they might benefit our production systems. We also consider best management practices for the incorporation of biotech into our operation. Our farming operation is very diverse, so we take care with the deployment of biotech events to make sure they are compatible with the crop rotations in the overall operation. Biotech seed has allowed us to reduce our chemical usage and increase our yields. We have a specialty market where only non-GMO seed can be used, so we must purchase the right seed. Our vegetable customers also require that we provide them with information on the type and variety of seed we use so they can incorporate this information in their marketing.
Deployment of Soybean Biotechnology on Our Farm

Mr. Rick Stern
Cream Ridge NJ USA
Stern Farms

- Stern Farms is a 1,500 acre (600 ha) mixed farming operation
- Crop enterprises include corn, soybeans, wheat, rye, sorghum, tomatoes, peppers, watermelons, cantaloupes and various types of hay.
- The farming operation involves several family members as well as three full-time and 15 seasonal employees.
Biotech Use

• First grew RR soybeans in the early 90s
  – Roundup (glyphosate) had no carryover
  – Benefited our vegetable crops for Chinese customers.
  – Eliminated concerns about chemical residues

• Benefits include less application of chemicals and cleaner fields
  • Estimated that annual herbicide use 23.1 million lbs less in biotech soybean
Biotech Considerations

• Our location to the major cities allows for a lot of specialty markets.
• Marketing non-GMO soybeans was a large market to the Asian community.
  – Identified specific traits they desired, especially high protein
  – Not concerned whether GMO or Non-GMO.
  – Continuing to grow Non-GMO for this market
  – Now switching to all GMO with attention to quality requirements
Biotech Considerations

• Produced non-GMO low linoleic soybean for specialty markets
• Now looking forward to high oleic soybean
• Use biotech traits to our advantage in our diverse farm operation
  – RR soybeans - No herbicide carryover and cleaner fields. Broader time to spray
  – Bt corn - New traits that the seed companies are developing. Better stand ability. Pest resistance
  – RR alfalfa - Less time cleaning spray tank when fields need to be sprayed
Always looking for the best traits for our operation!

Soybean Industry Portfolio
Pipeline of biotech events and novel trait releases

- **High Oleic / Low-Sat** (Monsanto)
- **Omega-3 Stearidonic Acid** (Monsanto)
- **2,4-D Tolerant** (Dow)
- **Aphid Protection** (DuPont Pioneer)
- **2012**
- **Dicamba Tolerant** (Monsanto)
- **Multiple Mode Herbicide Tolerance** (DuPont Pioneer)
- **Bt/RR2Y** Brazil only (Monsanto)
- **Glytol/HPPD** (Bayer/MS Technologies)
- **2020**
- **Higher Yield I** (Monsanto)
- **Higher Yield II** (Monsanto)
- **RR2Y** (Monsanto)
- **HPPD Tolerant** (Syngenta/Bayer)
- **Glytol / HPPD / LL** (Bayer/MS Technologies)
- **Aphid Resistance** (Monsanto)
- **Asian Rust Resistance** (DuPont Pioneer)
- **Disease Resistance** (Syngenta)
- **Imidazolinone Tolerant** Brazil only (BASF/Embrapa Brazil)
- **LibertyLink (LL)** (Bayer)
- **Bt/RR2Y** Brazil only (Monsanto)
- **Low Raff-Stach** (Virginia Tech)
- **Lepidoptera Protection** (DuPont Pioneer)
- **Increased Oil / Feed Efficiency** (DuPont Pioneer)
- **Increased Oil** (DuPont Pioneer)
- **Rust** (Monsanto; Syngenta; DuPont Pioneer)
- **RR2Y** (Monsanto)
- **Low Oleic / Red. Sat / Low Lin** (DuPont Pioneer)
- **Omega-3 Stearidonic Acid** (Monsanto)
- **HPPD Tolerant** (Syngenta/Bayer)
- **Glytol/HPPD / LL** (Bayer/MS Technologies)
- **2,4-D Tolerant** (Monsanto)
- **Dicamba Tolerant** (Monsanto)
- **Multiple Mode Herbicide Tolerance** (DuPont Pioneer)
- **Bt/RR2Y** Brazil only (Monsanto)
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Source: Pipeline from Industry Sources; prepared by ASA, USSEC, USB. Updated August, 2012
Education is the key to biotech acceptance

• USB educational programs
  – Biotech U for journalism students
    • Univ. of Missouri and Arizona State
  – CASE Animal and Plant Biotechnology Course
  – 4-H Partners for Biotechnology Education

• New Jersey Biotechnology program
Thank you!