Integrated Pest Management: As Important Now as Ever

The goal is to manage pests in a way to minimize economic, health, and environmental risk.
This is accomplished by combining biological, cultural, physical, and chemical tools to manage pests.
Pest management, not pest eradication, is the most desirable strategy.
Key components are scouting, pest ID, and the use of thresholds.

A few terms -

Resurgence
- Survival and reproduction by remnant population

Flare-up
- Similar to resurgence, but original population often not economic or likely to become economic

Recolonization
- New insects colonize field
- Can be single vs. multiple events

Why can resurgence & recolonization be so dramatic?
Average Aphid Densities 2005

The Damage Curve and its Components

Yield
Tolerance
Overcompensation
Compensation
Linearity
Damage Boundary
Desensitization
Inherent Impunity
Injury
Multiple Populations: Worst Case

Aphids/Plant

July 1
August 1
Sept 1

Treat
Treat Again
Pop. Growth
Pop. Growth
Pop. Growth

Do Insurance applications pay? An example
Nebraska CruiserMaxx Study 2006-2008
NSB funded project
Northeast Ag Consulting, Hartington, NE
Dan Steiner, Ben Pinkelman

★ Two locations/year planted during “normal” planting window
★ Three reps of two treatments: CruiserMaxx Pak seed treated, untreated seed
★ Plots: 240 ft wide strips across a quarter section
★ Data: BLB counts, BLB injury, soybean aphid counts, yield

CruiserMaxx Study 2006-2008

✓ Significantly reduced spring BLB, and at times F1 & F2 BLB
✓ Significantly reduced spring BLB injury, although injury was minor (< 10%/plant, ~5%/plant)
✓ Did not significantly reduce soybean aphid

No effect to yield for early or mid-May planting dates
WHY?

• Spring BLB thresholds rarely met
• BPMV (BLB vectored) not yet a significant issue in most of Nebraska
• Not recommended for soybean aphids – appear too late in season

CruiserMaxx Study 2006: Yields
Northeast Ag Consulting, Hartington, NE
Dan Steiner, Ben Pinkelman
- No CruiserMaxx
- CruiserMaxx

Yield (bushel)
Location
Boden, NE
Hartington, NE
Natural Enemies of Insect Pests are Abundant
Preserve Them!

Predators

Parasitoids

Pathogens