Electrostatic vs. Conventional Applications of Stratego

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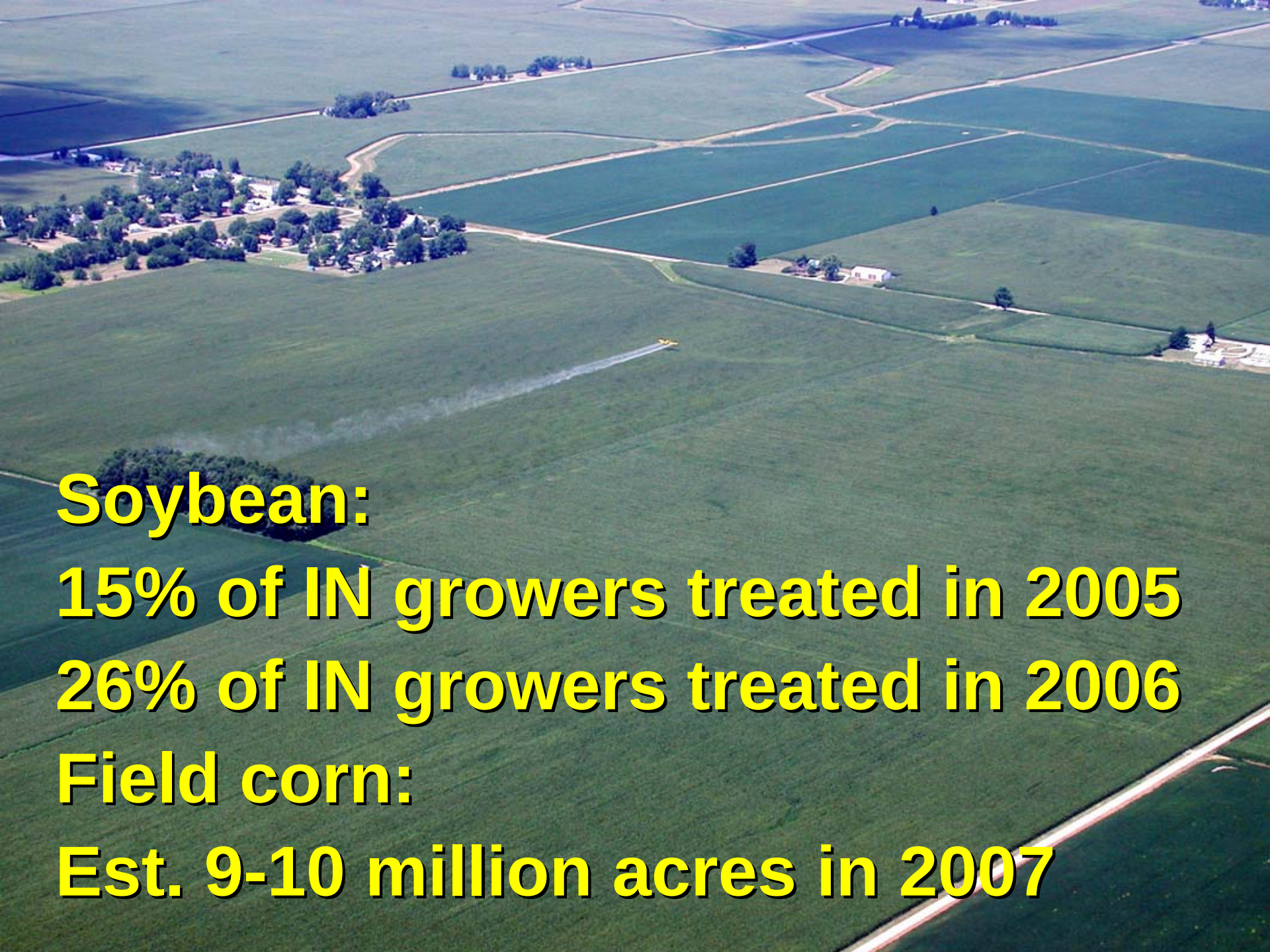


Soybean:

15% of IN growers treated in 2005

26% of IN growers treated in 2006

Field corn:

Est. 9-10 million acres in 2007

Electrostatic Experiment History

- Experiment #1 - Seed corn (inbred-line; sterile male)
  - Aerial at 5 GPA; Conventional flat fan tips: TeeJet 1550
  - Aerial at 1 GPA; Electrostatic spray tips: TXVK 8
  - Quadris
- Experiment #2 – Soybean yield response
  - Aerial 5, 2 GPA; Conventional flat fan tips: TeeJet 1550
  - Aerial at 1 GPA; Electrostatic spray tips: TXVK 8
  - untreated
  - Headline, Quilt, or Stratego
- Air Tractor 402; 140 mph;

Results: Fungicide Efficacy in Seed Corn

- Disease was a combination of gray leaf spot and northern corn leaf blight. Severity was assessed in five 1.25-in.-diameter quadrants per ear leaf on 10 plants per plot.

- Fertile, de-tasseled (21 DAT)
  - Conventional – 3.9%
  - Electrostatic – 4.5%

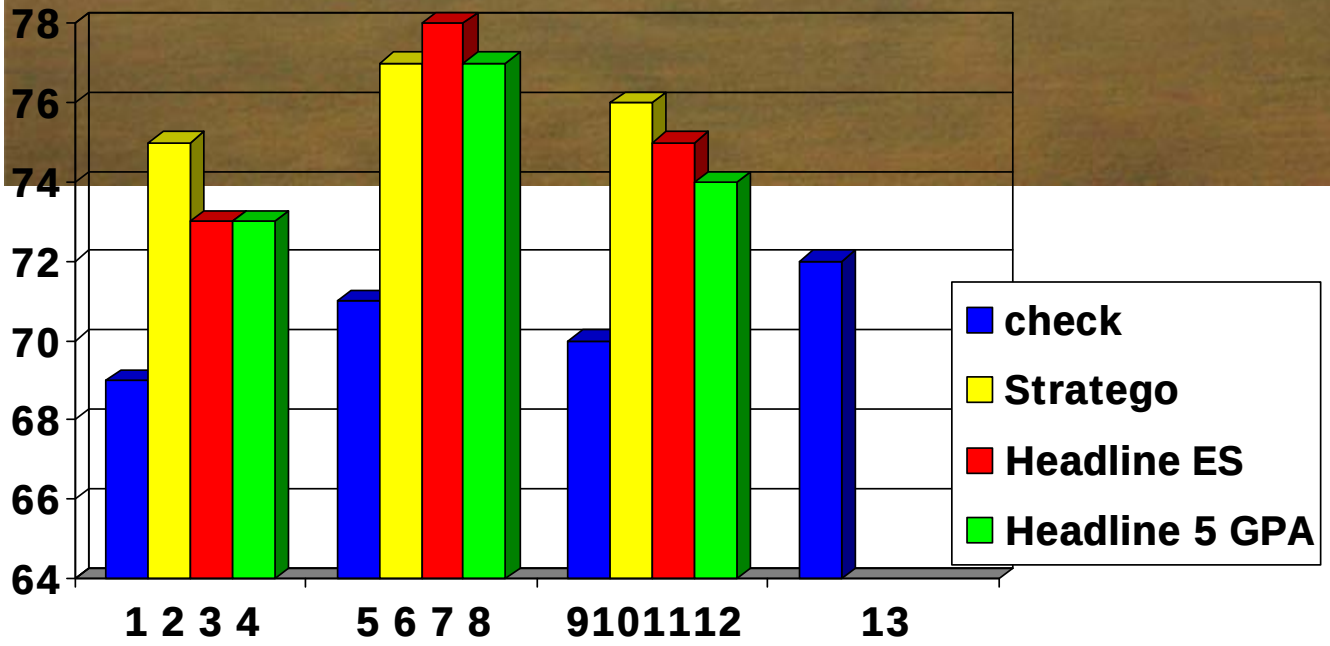
- Male sterile (21 DAT)
  - Conventional – 3.8%
  - Electrostatic – 4.4%

Leesburg, In 9.11.06 Soybean Fungicide Applications

Application Date: 7.23.06
Distance between swaths: 150 ft.
Application swath width: 65 Ft
Wind :West 10 MPH
Headline: 6 oz.
Stratego: 10 oz.

3 to 8 bu

1 2 3 4 5 6 7 8 9 10 11 12 13



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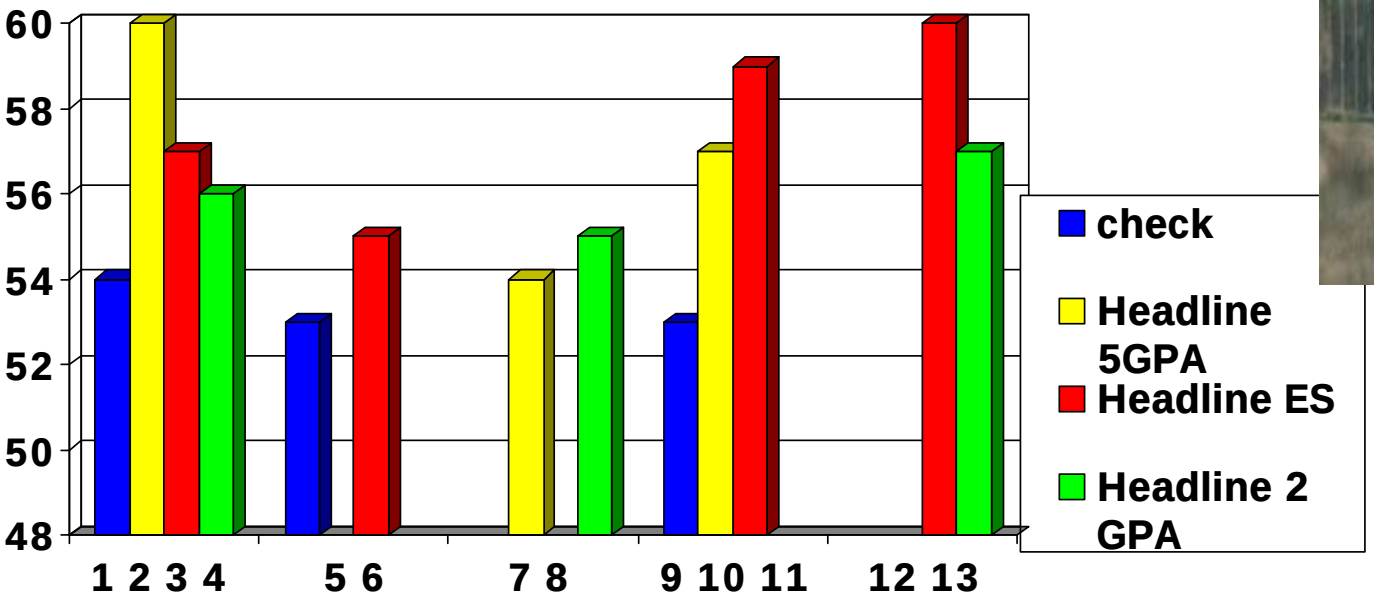
Wakarusa, In 9.26.06 Soybean Fungicide Applications



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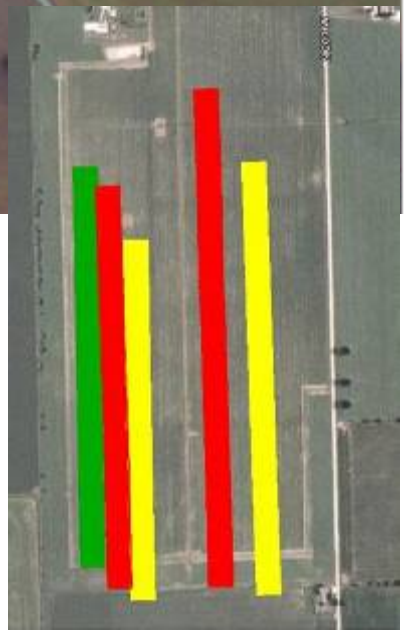
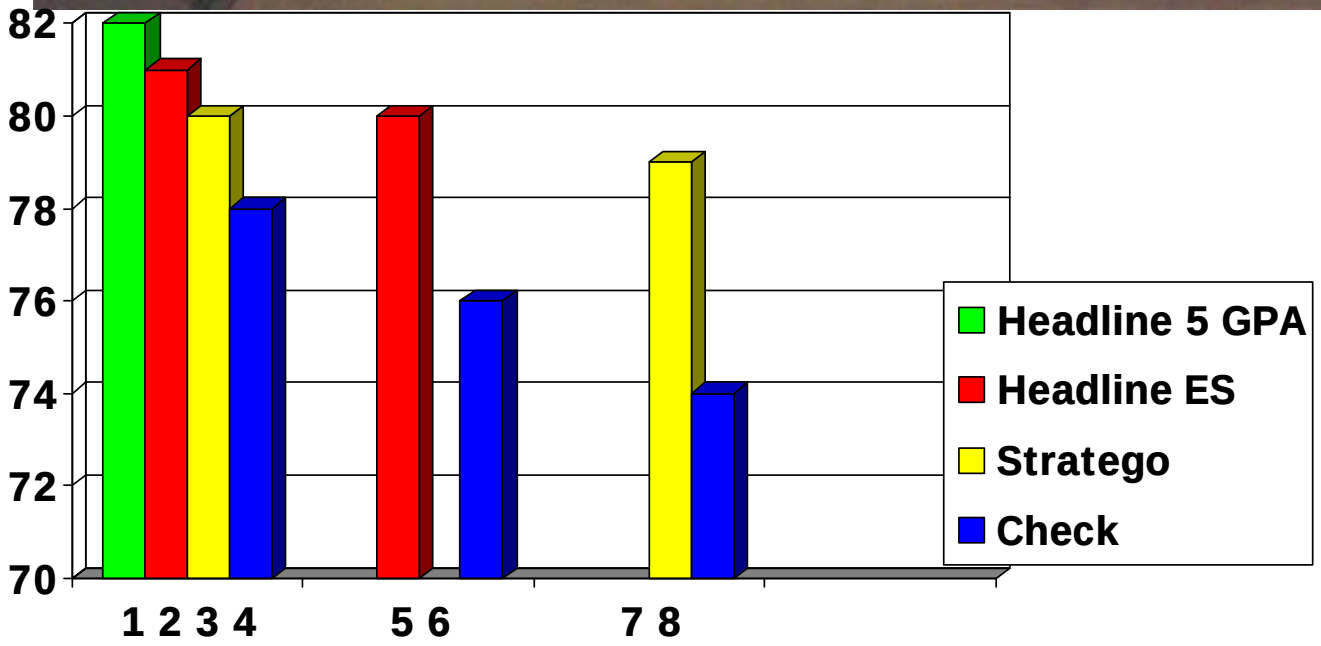
Leesburg, In 9.11.06 Soybean Fungicide Applications





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Conclusions

- Experiment #1 - Seed corn efficacy trial
  - Fungicide efficacy was similar between the conventional application at 5 and the electrostatic system at 1 GPA at 7 and 21 DAT
- Experiment #2 –Soybean yield
  - Yield response was similar among spray systems

2007 Stratego Experiments

- The experimental design was a randomized complete block design with 3 replications.
- The volume treatments were
  - untreated control,
  - 5 GPA: Stratego at 10 fl oz/A + NIS 0.125% (v/v)
  - 2 GPA: Stratego at 10 fl oz/A + COC at 1 pint/A
  - 1 GPA: Stratego at 10 fl oz/A (electrostatic).
- The application timing for soybean and corn were R3 (first pod) and VT (tassel), respectively.
- Plot size was ~6 A for both corn and soybean.

2007 Stratego Experiments

- Disease severity was assessed on 20 plants in each plot
- Rust was the predominant disease on corn, but gray leaf spot (disease of interest – University trials) and northern corn leaf blight were also present
- No measurable disease pressure was noted in soybean

Field Corn Results

Treatment	% Ear leaf Disease 3 Sep	% Stalk Disease 22 Oct	Yield bu/A
Untreated	7.0	2.0	191
Stratego at 5 gpa	3.7	1.0	186
Stratego at 2 gpa	4.0	1.0	189
Stratego at 1 gpa (electrostatic)	3.3	1.0	189
LSD (0.05)	2.4	NS	NS

Soybean Results

Treatment	Yield bu/A
Untreated	63
Stratego at 5 gpa	64
Stratego at 2 gpa	65
Stratego at 1 gpa (electrostatic)	65
LSD (0.05)	NS

2007 Plant Health Study

- Affect of fungicide and experimental plot size on soybean yield response to fungicide

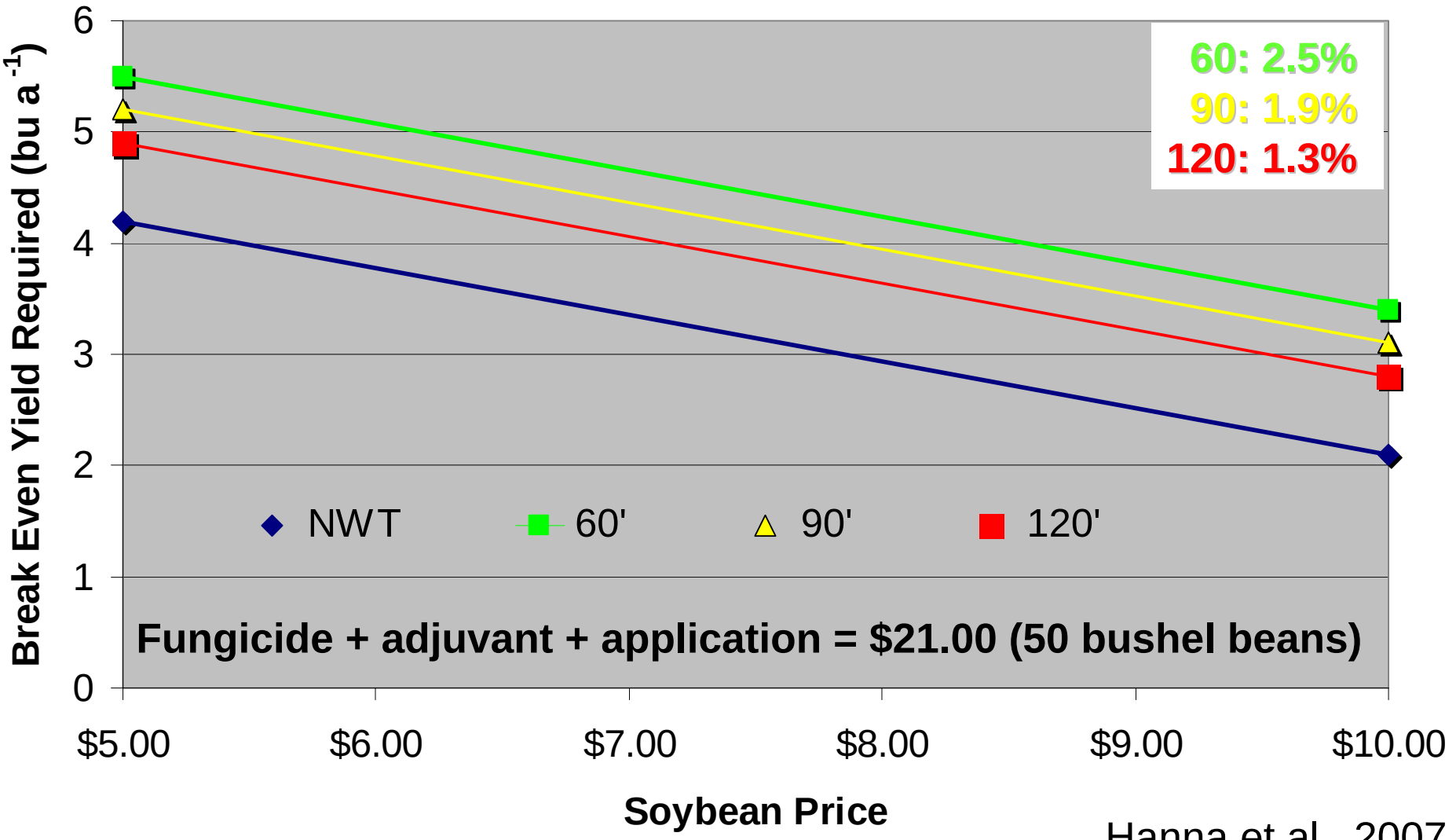
- 5 locations across IN
  - PPAC, NEPAC, SEPAC,
  - TPAC, DPAC

- Two plot sizes by 3 reps
  - 5 x 30 vs. 60 by 300 (minimum)

Plant Health Soybean Results

	All	All	Yield gain	
Treatment	Large	Small	Large	Small
Quadris 9.2	57.7	56.7	4.7	4.3
Headline 9.2	58.5	56.8	5.5	4.4
Folicur 4	54.3	53.4	1.3	1.0
Untreated	53.0	52.4	0.0	0.0
P	0.058	0.265		
CV	3.36	6.11		

Break Even Yield



Hanna et al., 2007

Conclusions

- Fungicide efficacy and yield results from 2006 and 2007 indicate that electrostatic was comparable to conventional spray systems
- Preliminary results from 2007 US corn yield experiments are variable
  - Rotation differences and North to South gradient
  - 40 to 50% break even from University trials
  - Greater % from industry
  - Headline ~70% of market
- What does the 2008 year hold in store for us?
  - Industry strip plots vs. University replicated plots