



# Cover Crop Workshop

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Conservation Agriculture

# Herbicide Interactions

- Significant issues with different cover crops
- Some combinations have reduced cover crop control by 40%
- Chemical company staff do not understand issues of herbicide antagonism
- Many cover crops have very specific herbicide recommendations
- Dealers and agronomists do not understand or use proper herbicide recommendations

# Ryegrass Herbicide Control

Gramoxone Inteon	3 pt	78%
Gramoxone Int / Aatrex /Princep	3 pt/2 qt/1 qt	85%
Round-up W.MAX	22 oz	98%
Round-up W.MAX / Degree Xtra	22 oz/3 qt	86%
Steadfast	.75 oz	47%
ClearOut 41 plus	1 qt.	93%
ClearOut 41 plus	1.5 qt	98%
ClearOut 41 plus /Basis	1.5 qt/.33 oz	98%

# Annual Ryegrass Herbicide trial

Control at 36 das

treatment

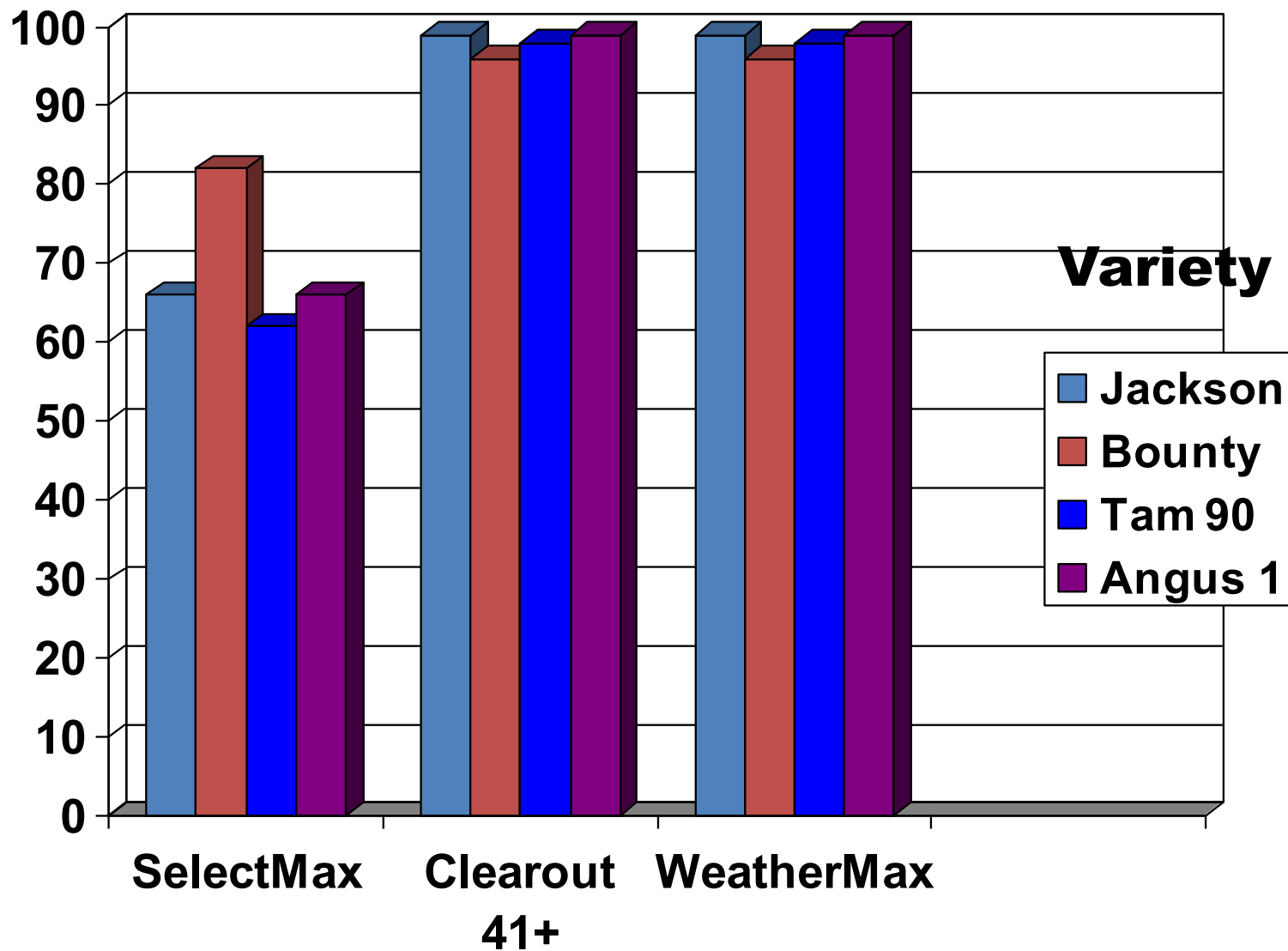
gly51 22oz	97
gly 51 32oz +2,4-D 16oz	99
gly 51 32oz + calisto 7oz	63
gly51 32oz + Prowl H2O 3 pt	99
gly51 32oz + resolve 2 oz.	99
gly51 32 oz + Basis 1 oz	99
gly51 32oz + Balance Pro 4oz	99
gly 51 32 oz	99

LSD 0.05 0.6

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Sprayed at 1<sup>st</sup> to 2<sup>nd</sup> joint stage, mid April, 6 reps

% control Sprayed April 16, 2007, all varieties jointed, rating 30 days after spraying



# Herbicide translocation Issues in Spring

- only works when plant is actively growing
  - Need sunny days
  - Above 50 degree temperature
  - Cold weather means spraying morning to early afternoon (night temps < 40)
  - NO triazines in mix
  - Pre- reproductive stage
- Use additives
  - AMS or other like products
  - 10 gallons water/ acre for glyphosate

# Glyphosate resistant marestail control



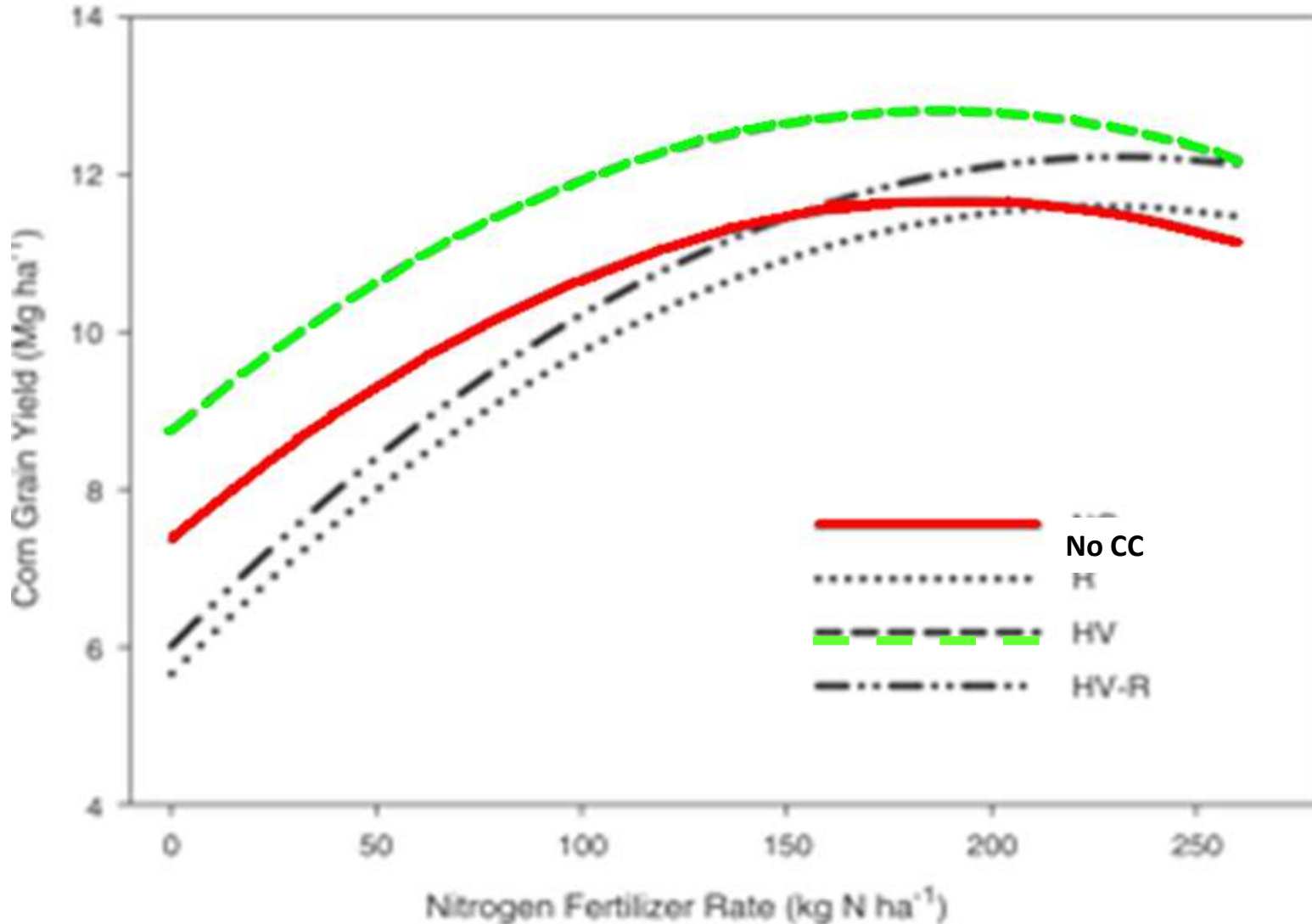
Cereal rye (Rymin)

# Soil microbial changes

- Disease suppression
- Nematode reduction
- Fertility availability/uptake
- Soil organic matter changes



# Impact of hairy vetch and rye cover crops on corn yield in IL



<b>Treatment</b>	<b>SCN eggs/100cc  Changes in Egg count</b>	<b>SDS Foliar Disease DX 8/26</b>	<b>Foliar Disease AUDPC</b>	<b>Yield (bu/A)</b>
Fallow (No winter crop)	+589 a	25.2 a	157.7 a	65.4 b
Cover crop (rapeseed)	-313 b	16.8 b	103.9 a	67.5 ab
Green manure (rapeseed)	-691 b	5.5 c	37.1 b	69.6 a
<i>P &gt; F</i>	<i>.002</i>	<i>.0001</i>	<i>.001</i>	<i>0.07</i>

Means followed by the same letter are not significant (P=0.05), according to Fisher's LSD test.

**J. Bond, SIU**

# Soybean Cyst Nematodes

## Soybean Cyst Nematodes Egg Count

	Bare	Cereal Rye	Annual Ryegrass
NW	7533	717*	117**
SW	3650	320*	0**
LF	1559	722*	386*
JA	1202	390*	279*

Additional research needed

\* Significant .05

2 years /3 replications \*\* Significant .01

- Samples after soybean harvest

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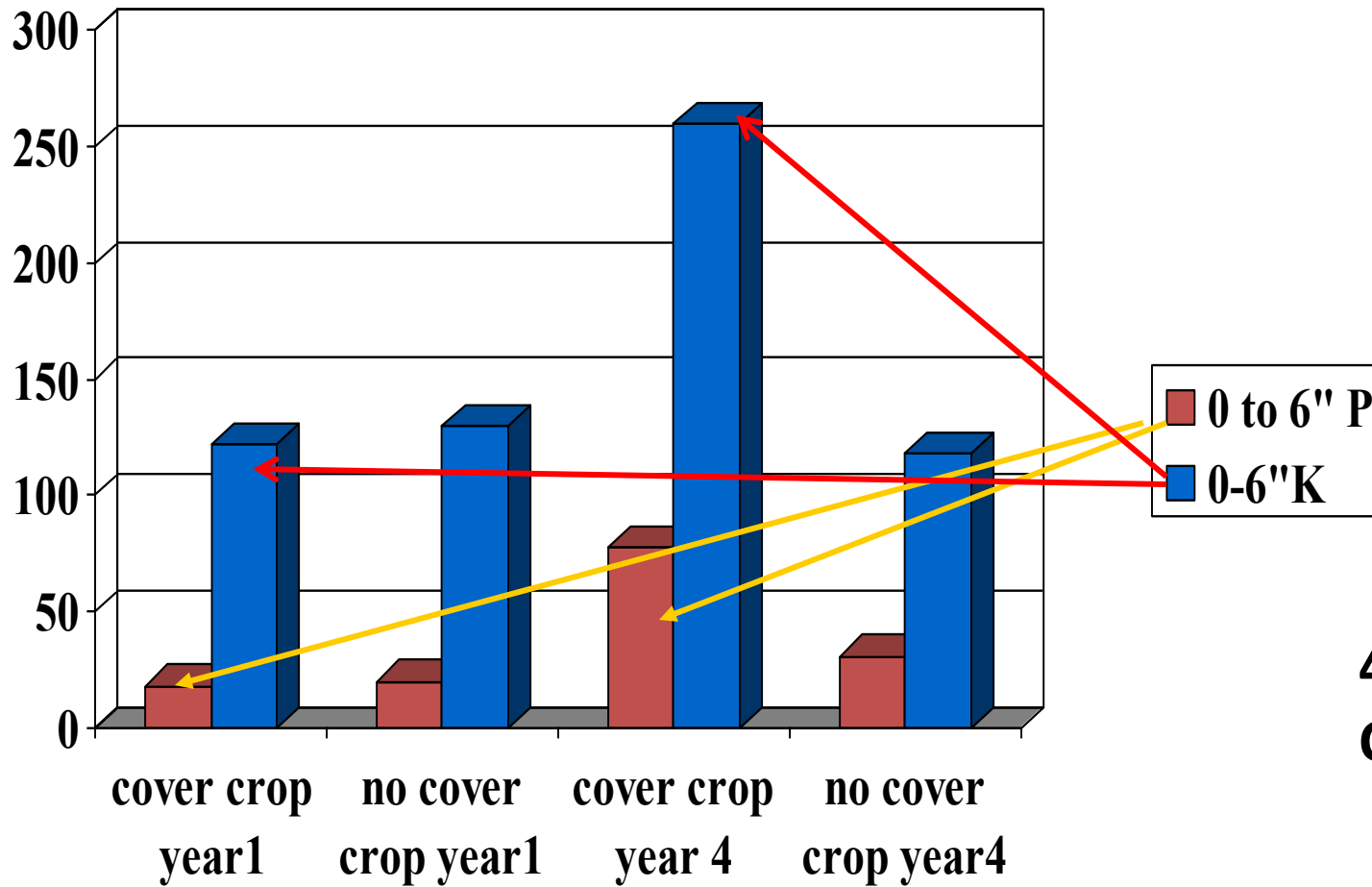
# Soybean Cyst nematode suppression

Treatment	NW Plot yield	SW Plot yield
Bare soil	48.9	48.2
Cereal rye	53.8	52.3
Annual ryegrass	55.7	60.6

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# Fertility Changes

## Soil Tests in ryegrass Cover Crop



**4 years, 3 reps**  
**C-S rotation**

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# Label/Planting Restrictions

- Most labels restrict cover crop planting
- Need guidelines on what can plant and herbicide implications
- Herbicide carryover concerns