Roots

w/ CC

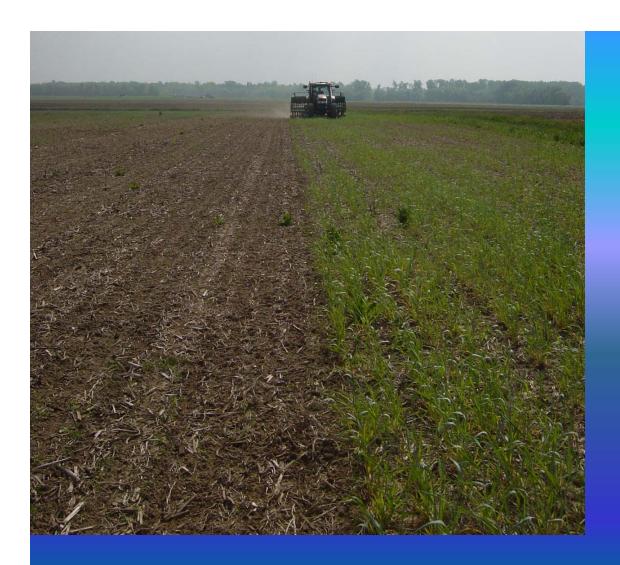
and Gypsum

Indiana, 2012

None







### Drilling Soybeans Indiana, 2013





### Equipment

#### Litter & lime spreaders

Chandler

**BBI** 





### Equipment



#### **New Leader 30-Series**



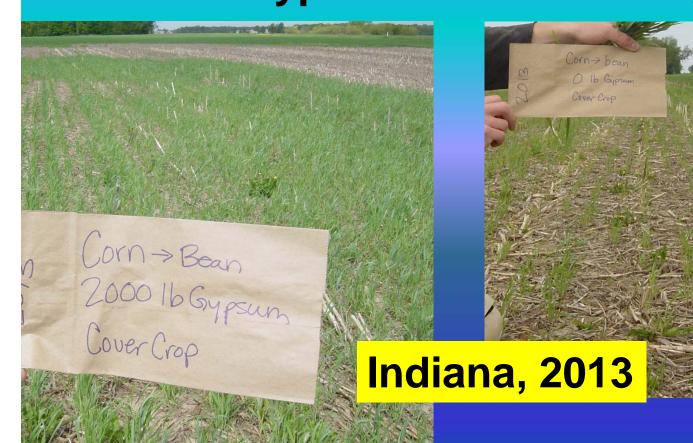
#### BBI lime/fertilizer spreader





### 2000# Gypsum

### 0# Gypsum





## 2013 Profitability Analyses by Marv Batte

#### **Notes**

- Profitability analysis is based on crop enterprise budgets from Ohio State, Purdue, and Auburn.
- Profit measure is Return to Management.
   All other costs including labor and land rental are deducted.
  - Cash rental rates are \$260 (OH), \$290 (IN) and \$100 (AL).

#### **Notes**

- Costs of production are the same except:
  - Gypsum is \$50/ton
  - Cover crop seed as applied at each state (cereal rye in Ohio and Indiana and Oilseed Radish in Alabama.
  - Cover crop seeding costs are \$4.50/acre
  - Yields are average of four replicates
- Soybean price: \$12.90/bu

### 2013 Yields and Profitability – Average of all treatments

	Average Yields	Average Profit	
Site	(bu/ac)	\$/ ac	
Alabama	38.3	-33	
Hoytville	57.7	117	
Indiana	57.3	80	
Piketon	59.4	139	

### 2013 Yields and Profitability – Average of all sites

	Average Yields	Average Profit
<b>Gypsum</b> (lb/ac)	(bu/ac)	\$/ ac
0	53.0	98
1,000	53.5	79
2,000	53.1	50

### Soybean Yields for Gypsum levels

			Obia	
Gypsum (lb/ac)	Alabama	Indiana	Ohio- Hoytville	Ohio-Piketon
0	38.2	58.2	58.2	57.4
1,000	38.8	58.2	57.8	59.0
2,000	38.0	55.6	57.1	61.8

### 2013 Profitability – Average by Gypsum level and Site

Profit (\$/Ac)

Gypsum (lb/ac)	Alabama	Indiana	Ohio- Hoytville	Ohio- Piketon
0	-9.56	116.42	148.23	138.03
1,000	-27.14	91.70	118.64	133.50
2,000	-61.93	31.59	84.86	144.33

### 2013 Yields and Profitability – Average of all sites

	Average Yields	Average Profit
Cover Crop	(bu/ac)	(\$/ ac)
No	51.4	63
Yes	55.0	88

+\$25

### 2013 Yields – Average by Cover Crop Treatment and Site

Yield (bu/Ac)

Cover Crop	Alabama	Indiana	Ohio- Hoytville	Ohio- Piketon
No	35.4	55.2	57.6	57.3
Yes	41.2	59.5	57.9	61.4

#### **2013 Profitability – Cover Crop Treatment**

Profit (\$/Ac) Ohio-Ohio-**Cover Crop** Alabama Indiana Hoytville Piketon No -\$48.20 61.60 121.20 118.30 -\$17.60 98.20 113.30 158.90 Yes

### 2013 Yields and Profitability – Average of all treatments

	Average Yields	Average Profit
Soybean		
type	(bu/ac)	\$/ ac
Low Oil	50.9	46
High Oil	55.5	105

### 2013 Yields – Average by Soybean Variety and Site

Yield (bu/Ac)

			Ohio-	Ohio-
Soybean type	Alabama	Indiana	Hoytville	Piketon
Low Oil	34.4	54.9	55.8	58.5
High Oil	42.3	59.7	59.7	60.2

### 2013 Profitability – Average by Soybean Variety and Site

-	Profit (\$/Ac)			
Soybean type	Alabama	Indiana	Ohio- Hoytville	Ohio- Piketon
Low Oil	-\$83.90	49.10	92.00	127.70
High Oil	\$18.20	110.70	142.50	149.60

#### **Key Observations**

- For Soybean yield:
  - Gypsum: no impact in 2013.
  - Cover crops plots: +3.6 bu/acre
  - High oil soybeans: + 4.6 bu/acre
  - Continuous soybeans: 5.5 bu/acre less than soybeans after corn.
  - Yields in Ohio (Piketon and Hoytville) and Indiana were "statistically" equal.
  - Alabama yields were significantly lower: 19 bu/acre less.

#### Observations across sites and treatments

- For Soybean Profitability (Return to Management):
  - Gypsum
    - 1,000#, -\$20/acre less profit
    - 2,000#, -\$40/acre less profit (\*based on 1 year)
  - Cover crop: + \$25/acre

#### Observations across sites and treatments

High oleic soybean: \$59/acre more profit.

 Continuous soybeans produced \$70/acre less profit that soybeans following corn.

# Increasing No-Till Soybean Productivity with Cover Crops and/or Gypsum

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COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

