SOYBEAN PRODUCTION
MANAGING COST PER
BUSHEL

Kyle Jensen and Scott Nelson

KYLE.JENSEN@PLANTPIONEER.COM
SNELSON@IASOYBEANS.COM

$9.46
Understand what areas in your fields are unprofitable and why.
Managing Nutrient Supply

• Are there nutrients
  • Form that can be used
  • In amounts required

• Can the plant reach them
  • Rooting mass/depth

• Manage for maximum nutrient uptake
  • Uptake vs Removal
Soil pH

Yield
Soil pH

Value
- High: 8.45224
- Low: 4.5133

Yield

Value
- High: 87.9699
- Low: 41.3007
Nitrogen Partitioning

- Uptake after R5.5 = 40.1%

67% of veg. N is remobilized after R5.5
N Uptake Rate

- Less time in lag phase for greater early season uptake, higher peak rate, longer duration, and higher late season rates
- Will one N application meet the uptake requirements of high yield soybeans? Even Late Season?
Changes in Veg. Remobilization and Uptake

- **Old genetics** showed greater percentage of N taken up before R5.5, but also less efficient remobilization of this vegetative N to the seed.
Potassium Partitioning

- Uptake after R5.5 = 1%

46% of veg. K₂O is remobilized after R5.5
Potassium Uptake Rate

- Early season uptake rates are the same between yield levels, higher peak rate but similar duration, and not much difference in late season uptake rates.
Changes in Uptake Pattern

- K uptake in newer genetics has heavily shift prior to seed fill compared to old genetics.
## Soybean Nutrient Requirements

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<th>Soybean Yield</th>
<th>N Uptake</th>
<th>N Removal</th>
<th>P Uptake</th>
<th>P Removal</th>
<th>K Uptake</th>
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badgerbean.com/calculator
Close Canopy by 1st Day of Summer
Early Planting Dates to Max Canopy

More SDS in Earliest Planting Date
Planting Date and Soybean Protein

![Bar chart showing protein percentage by planting date: Early, Intermediate, Late. Early planting date has the highest protein percentage, followed by Intermediate, and then Late.]
OFN Soybean Row Spacing Results

Most response after May 15\textsuperscript{th} plantings.
White Mold and Sprayer Tracks are issues with NR Soybeans
Other Benefits of Narrow Row Spacing

- NR close canopy 10-22 days earlier
- NR have less weeds 64% of the time
- Weed Resurgence is less in NR
Seeding Rate in Poorly Drained Soils

Seeding Rate (x 1000)

Yield (Bu/A)

PDHP

PDMP
Seeding Rate in Very Poorly Drained Soils

Seeding Rate (X 1000)

Yield (Bu/A)

VPD
Seeding Rate in Well Drained Soils

![Graph showing the relationship between seeding rate and yield for WDHP and WDMP.]
What effect does soybean planting population have on pigweed control?

*Results summarized across herbicide programs, tillage types, and row spacings.
**Means followed by the same letter are not different, P ≤ 0.05
In 30 inch rows, stand loss is significant at higher rates of seed drop.
New Soybean Varieties

• Shorter
• Branch More
• Greater per plant yield
Effect of Seed Treatment on Yield

All planting dates in May. Responses in earlier planting dates could be different.
Effect of Tillage on Soybean Yield

- Fall Stalk Chop
- Fall Disc + Spring Cultivate
- Fall VT + Spring VT
- No-Till
- Fall Plow + Spring Cultivate

Yield (Bu/A)
Effect of Fungicide and Insecticide on Yield

No Disease or insects present at time of application.