Soybean Yield® App: A New On-Farm Tool for Yield Estimation

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BACKGROUND

- Soybean yield estimation is time-consuming and labor-intensive.
- The seed weight component is the main "unknown" factor at the time of yield estimation. Thus, a study was developed to test a scientific framework for estimating seed weight and predicting yields.
- The figure below shows the traditional approach or steps utilized to estimate yield.

CONCLUSIONS

- Soybean Yield® App is a more precise digital on-farm tool to increase seed weight prediction power and improve yield estimation before harvest.
- This methodology considers an important yield component that it is not properly addressed in the "conventional" yield estimation methods, the seed weight estimation.

SEED WEIGHT ESTIMATION (CONTINUATION)

- Count and enter number of plants, row spacing and number of pods in 10 plants.
- Pictures of pods should be based on representative areas of the field (include variation).
- Number of sampling areas should be based on the field variability: +variation, +samples.
- The process of pod collection can start from R4 (Full Pod)/R5 (Beginning Seed) stages.

SEED WEIGHT ESTIMATION (OBJECTIVE)

Develop a digital application to aid the forecasting of soybean yields before harvest, by improving the seed weight prediction.

Objectives:

1. Count plants (21-inch row length or in a defined area)
2. Count total pods per plant
3. Count number of seeds per pod (ranged 1 – 4 seeds)
4. Seed size – “Unknown factor" - determined at Maturity (Ranged from 2,500 – 3,500 seeds per pound)

How to improve the seed size prediction and estimate yields more accurately and in a interactive way?

Recommendations

- Count and enter number of plants, row spacing and number of pods in **10 plants**.
- Pictures of pods should be based on representative areas of the field (include variation).
- Number of sampling areas should be based on the field variability: +variation, +samples.
- The process of pod collection can start from **R4 (Full Pod)/R5 (Beginning Seed)** stages.

SOYBEAN YIELD® APP: MAIN FEATURES

- Count and enter number of plants, row spacing and number of pods in **10 plants**.
- Pictures of pods should be based on representative areas of the field (include variation).
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