

Planning Your On-Farm SSEA Trial

One treatment strip. Your normal field management around it. Zone-specific answers from yield data.

The Single-strip Spatial Evaluation Approach (SSEA) lets you test one management change in a field using a single treatment strip. The rest of the field is managed as usual. At harvest, yield monitor data are used to determine whether the treatment affected yield and, when yield stability zones are available, whether the response differed across the field.

1. What would you like to test?

N SIDEDRESS RATE	SEEDING RATE	COVER CROPS
Would a higher or lower N rate change yield?	Would a higher or lower population change yield?	Does a fall cover crop affect corn yield the following season?

Have another question? SSEA can also evaluate other management changes such as fertilizer products/rates, cover crops, manure, fungicide, application timings, and other practices.

2. What does the trial look like?

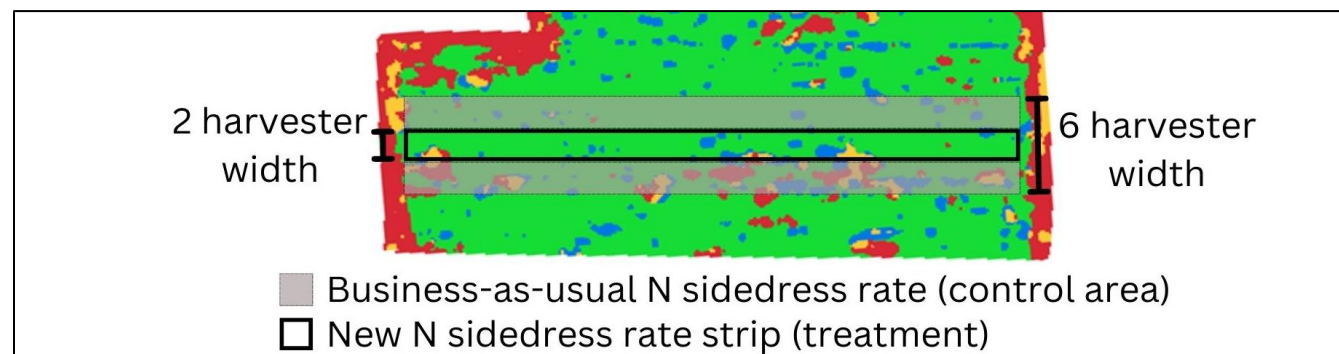


Figure 1. Example of a treatment design for a N sidedressing rate study using the single strip. Two harvester width wide is the minimum width of the single strip treatment.

Considerations when applying the single strip treatment

WIDTH	DIRECTION	LENGTH	LOCATION
2–4 harvester/chopper widths	Along planting/harvest direction	As long as practical; longer is better	Away from headlands, edges, and problem areas

Important! You do not need to physically establish control strips. The surrounding business-as-usual areas are used as controls during analysis.

3. What you do / What we take care of

WHAT YOU DO	WHAT WE TAKE CARE OF
- Choose a field and research question - Apply one treatment strip, mark its corners - Keep all other management uniform - Harvest as you would normally do - Share yield monitor and strip-location data	- Help select the field and strip location - Help design and georeference the strip - Clean yield monitor data - Conduct spatial and zone-specific analysis - Generate a farm-specific report

4. Before you start

TRIAL CHECKLIST ✓ Calibrated yield monitor ✓ Treatment selected ✓ Treatment and business-as-usual rates/products recorded ✓ Strip location planned ✓ Equipment widths known ✓ GPS strip corner coordinates or digitized application data	YIELD HISTORY Have 3+ years of high-quality yield monitor data? We can develop/use crop-specific yield stability zones to strategically locate the strip and evaluate responses across Q1–Q4 zones.
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5. Where should the strip go?

Yield stability zones are crop specific. We will work with you to identify which zones are most relevant to your research question and place the strip accordingly. Ideally, the strip crosses the zones of interest while remaining parallel to planting/harvest direction and away from field edges and problem areas.

6. Treatment specific instructions

IF TESTING...	RECORD / CONSIDER...
N sidedress rate	Business-as-usual and treatment strip N rates; N source and stabilizers (if any); application timing; relevant past N credits; application-equipment width.
Seeding rate	Business-as-usual population; treatment population; planter and harvester widths and types; hybrids; stand counts.
Cover crop	Record the cover crop species or mixture, seeding rate, planting date and method, and termination date and method.
Other management practice	Record the management change implemented in the strip as compared to the rest of the field.

7. At harvest

Harvest as you do normally. Do not stop, slow down, or change how you harvest because of the trial.

- Make sure the yield monitor is calibrated, and yield/moisture sensors are working properly.
- Harvest through the treatment strip as you normally would.
- Share yield-monitor data and strip-location information with the research team.

8. What you get back

We clean the yield data and use spatial analysis to estimate the treatment response. Where yield stability zones are available, results can be evaluated by zone and summarized in a farm-specific report. Individual farm data and reports are kept confidential.

- **Where?** See where the practice helped and where it didn't.
- **How much?** Measure the size of the yield response.
- **Worth it?** Measure if the yield responses justify the cost of a practice.

Resources & contact

TECHNICAL REFERENCES • Agronomy Fact Sheet #123: Yield Stability Zones • Agronomy Fact Sheet #124: Single-Strip Spatial Evaluation Approach • Agronomy Fact Sheet #135: Creating Strip Shapefiles for SSEA	GOT A FIELD & A QUESTION? LET'S TEST IT! Subha Srinivasagan (sn558@cornell.edu) Juan Carlos Ramos (jr2343@cornell.edu)
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