

Key Highlights:

Issue Detection:

Uneven emergence detected through NDVI and vegetation analytics tied to tillage direction.

Targeted Scouting:

Field scouting confirmed AGMRI findings, linking tillage passes and rainfall to variability.

Informed Decisions:

Improved confidence in AGMRI, supporting more informed tillage and field management decisions.

Management Practices

AGMRI + Field Scouting Confirm Uneven Emergence Linked to Tillage Patterns



Railroad/wavy pattern moving from NW to SE through the field. Indicates uneven emergence caused by the planter bouncing along the ground due to a poor seedbed.

Background:

During a **mid-season meeting**, an agronomy team and crop specialist reviewed AGMRI imagery across several fields. In one particular field, the imagery revealed a **pattern of uneven emergence** that caught the team's attention. The variation appeared in **distinct waves**, prompting a closer look.

Upon further discussion, the crop specialist noted that the angle of the emergence pattern matched the tillage direction used earlier in the season. The area had also experienced a challenging spring with excessive rainfall, which likely compounded the issue by creating

variable soil conditions at planting. Scouting pins placed earlier in the season supported this theory, as several aligned with **low-lying areas and poor emergence zones** tied to weather stress.

This case presented an opportunity to connect **AGMRI maps and related insights with field-level validation** to better understand how tillage and weather interactions were affecting stand establishment.

Challenge:

The concern was that if **the same tillage practices** were used across the grower's entire operation, similar problems could exist in other fields — potentially leading to **inconsistent emergence, uneven stands, and reduced yield potential**.

While the crop specialist had been somewhat skeptical about the value analytics, this field provided a clear example that could demonstrate how AGMRI helps visualize, verify, and **diagnose field variability in real time**.

The challenge was twofold: to confirm that the AGMRI maps was accurately detecting the issue, and to identify whether the root cause was **tillage-related, weather-related, or a combination of both**.



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Solution:

The agronomy team and crop specialist decided to **ground-truth the maps** by field scouting the affected fields. After reviewing the NDVI and VEG layers on AGMRI, they observed the same **wave-like emergence pattern** during the field walk.

The visual alignment between the **imagery patterns and tillage direction** confirmed that the unevenness seen from above matched what was happening on the ground. The field inspection also showed that wet conditions and compaction from spring rainfall likely amplified the variability.

The crop specialist planned to **review the findings with the grower** to discuss potential adjustments to tillage methods—such as changing the tillage angle, reducing pass intensity, or incorporating residue management practices—to improve emergence consistency in future seasons.

Results:

This collaboration demonstrated how AGMRI's analytics and field validation can work together to **diagnose agronomic issues quickly and accurately**. By connecting insights from field scouting, both the agronomist and grower gained a clear understanding of the interactions among **tillage patterns, soil conditions, and weather** on crop emergence.

The crop specialist expressed greater confidence in using AGMRI for **real-time field diagnostics** and plans to continue using it to monitor tillage impacts across other fields. Moving forward, the grower will explore **refinements to spring tillage practices** to minimize soil variability and promote more uniform stands.



Dirt layer image showing tillage passes from the NW to the SE that correlate with the angle of the train track/wavy pattern.

