ELECTRICAL CONDUCTIVITY MAPPING

Correlates the electrical conductivity values and properties that impact yield.

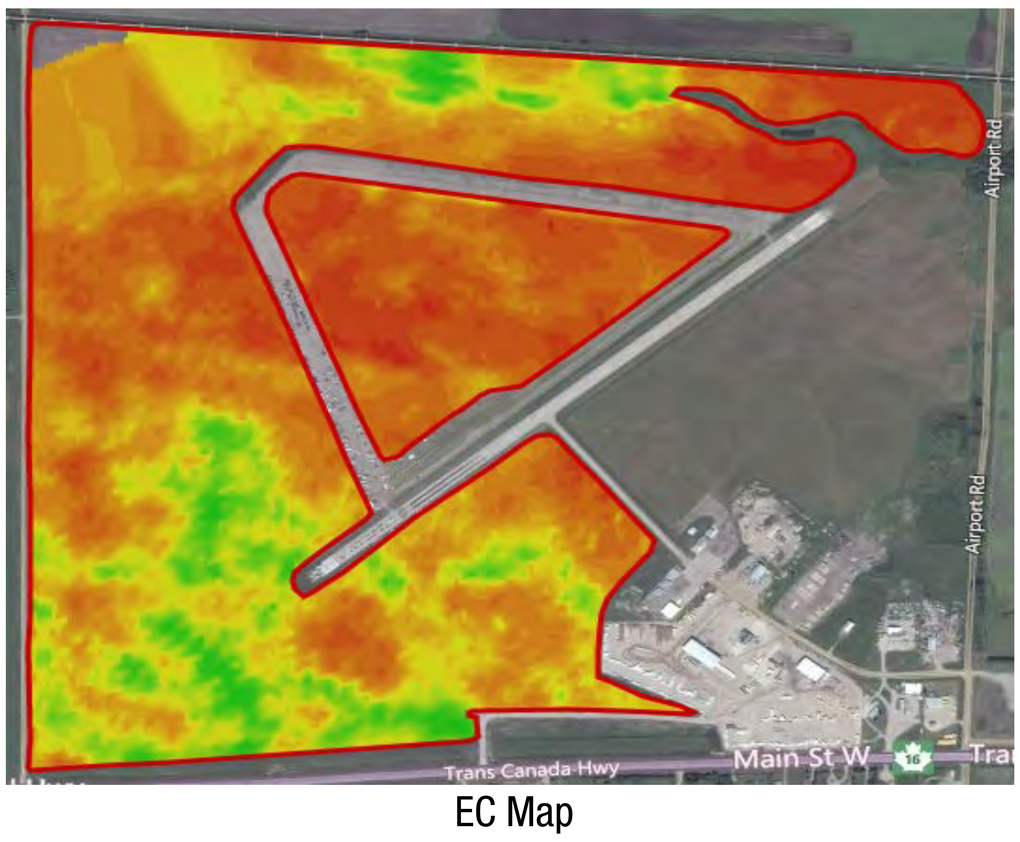
Electrical conductivity (EC) is the ability of a substance to conduct an electrical current. Combined with precision soil sampling, it provides a comprehensive field variability analysis.

Soil properties correlating to EC value:

- Soil texture
- Salinity
- Cation exchange capacity (CEC)
- Soil organic matter (SOM)
- Water holding capacity
- Drainage conditions
- Topsoil depth

EC map to create management zones:

- Directed soil sampling
- Variable rate seeding, fertilizer
- Yield map interpretation
- Better placement of field trials
- Soil salinity management



EC Map


Geonics EM 38

Electrical Conductivity / Elevation Mapping

Powered by TOTALFARM SOLUTIONS

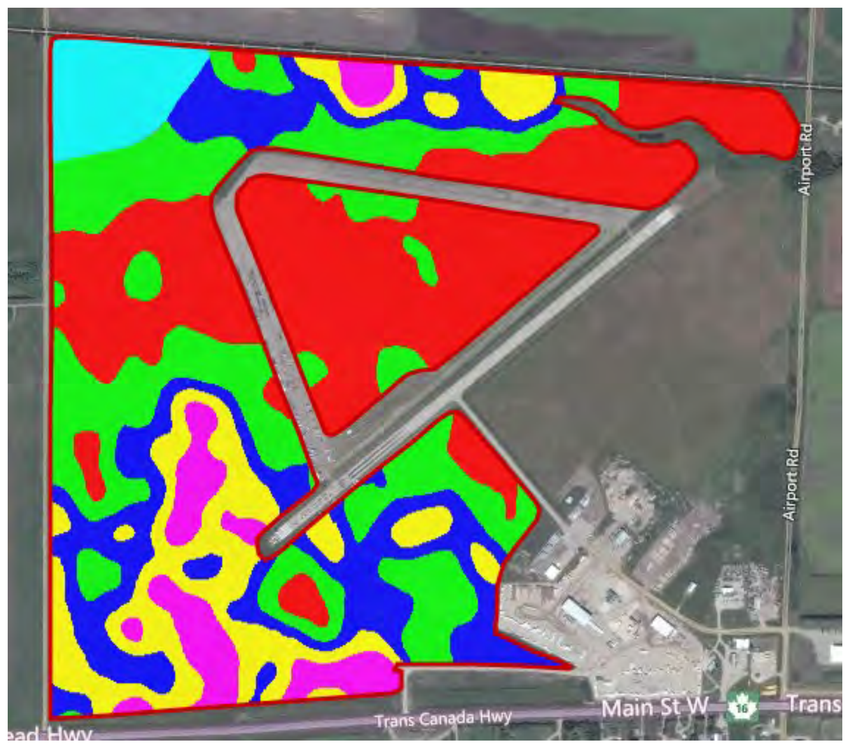
FIELDSMART PRODUCTION SOLUTIONS | ENNS BROTHERS

SMART ZONES

Understanding the carrying characteristics of your soil enables you to maximize your land's potential.

Nitrogen

Zone	0 - 6 "	6 - 24"	Total
1	15 lbs	15 lbs	30 lbs
2	17 lbs	24 lbs	41 lbs
3	14 lbs	18 lbs	32 lbs
4	12 lbs	9 lbs	21 lbs
5	31 lbs	33 lbs	64 lbs
6	6 lbs	3 lbs	9



Phosphorus

Zone	0-6"
1	9 ppm
2	9 ppm
3	10 ppm
4	13 ppm
5	12 ppm
6	5 ppm

Potassium

Zone	
1	125 ppm
2	148 ppm
3	168 ppm
4	167 ppm
5	149 ppm
6	87 ppm

	Soluble Salts		Soil pH		SOM	CEC
Zone	0-6"	6-24"	0-6"	6-24"		
1	0.4 mmho/cm	0.33 mmho/cm	7.9	8.2	3.6%	30.9
2	0.86 mmho/cm	0.54 mmho/cm	8.2	8.4	5.2%	34.1
3	0.83 mmho/cm	1.22 mmho/cm	8.0	8.1	4.4%	37.3
4	2.39 mmho/cm	2.32 mmho/cm	7.9	8.1	5.7%	52.2
5	2.84 mmho/cm	2.66 mmho/cm	8.1	8.4	4.4%	51.1
6	1.05 mmho/cm	0.67 mmho/cm	8.2	8.1	5.3	42.5

Source: AgVise Laboratories

Powered by TOTALFARM SOLUTIONS

FIELDSMART PRODUCTION SOLUTIONS | ENNS BROTHERS

SMART DATA

The most advanced program of collecting, storing and accessing farm collected data.

Equipment, Technology & Agronomy

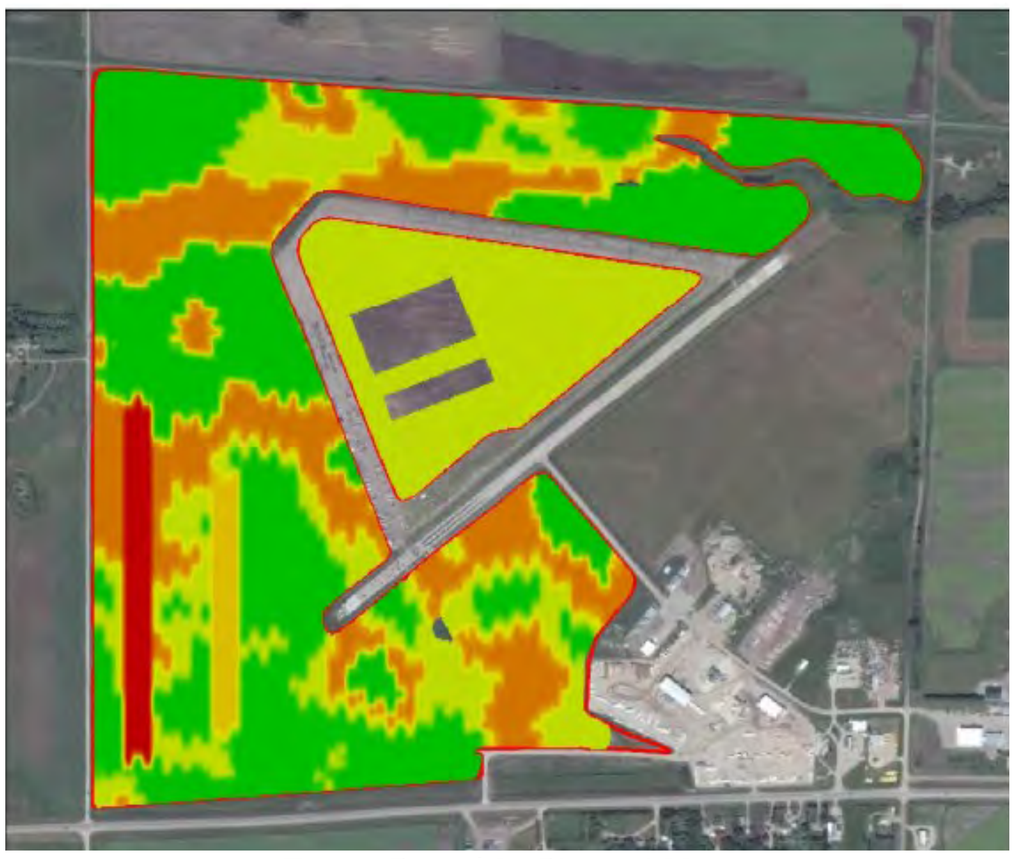
Seed Placement:

Soybeans

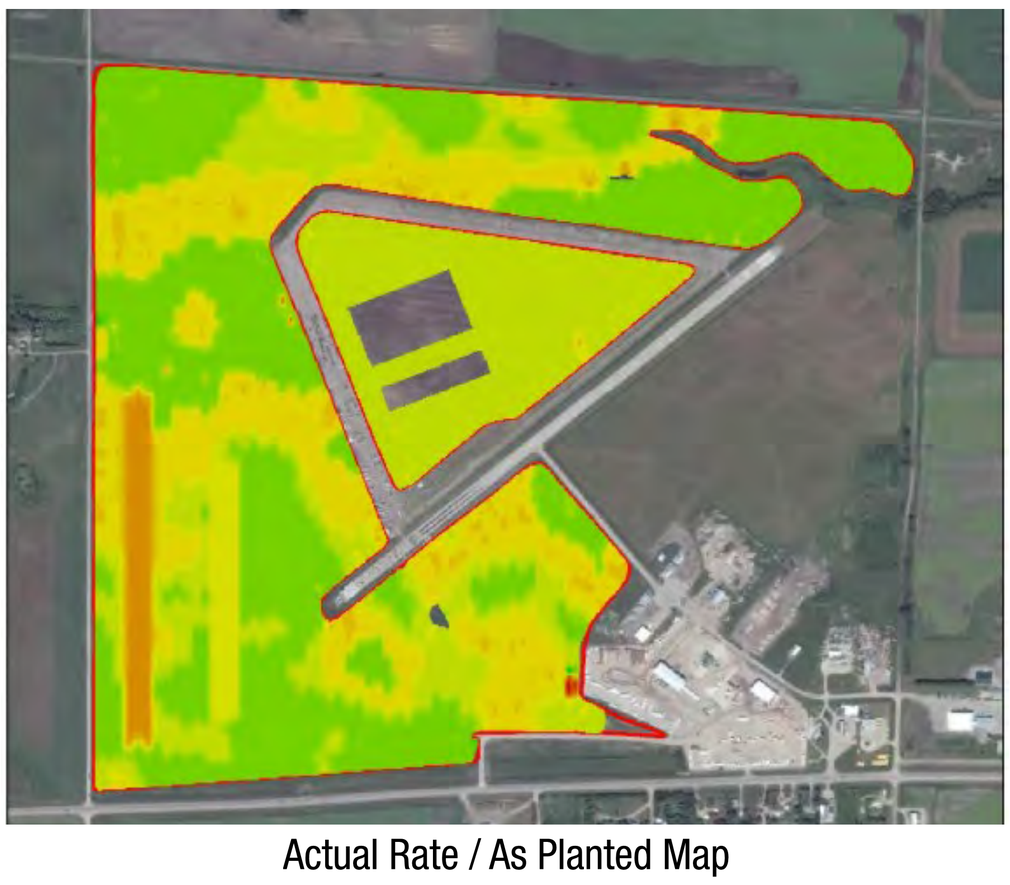
- Variety: P006T78R Pioneer
- Variable rate - 180,000-230,000 seeds/ac
- 10 inch spacing, disc opener
- Fertilizer in row placement

Equipment/Technology:

- John Deere 1890 disc drill, 60’
- John Deere 1910 air cart (hydraulic drive 550 bu.)
- John Deere 9560R tractor
- RTK, 2630 display
- Field Smart variable rate



Target Rate / As Planted Map



Actual Rate / As Planted Map

Powered by TOTALFARM SOLUTIONS

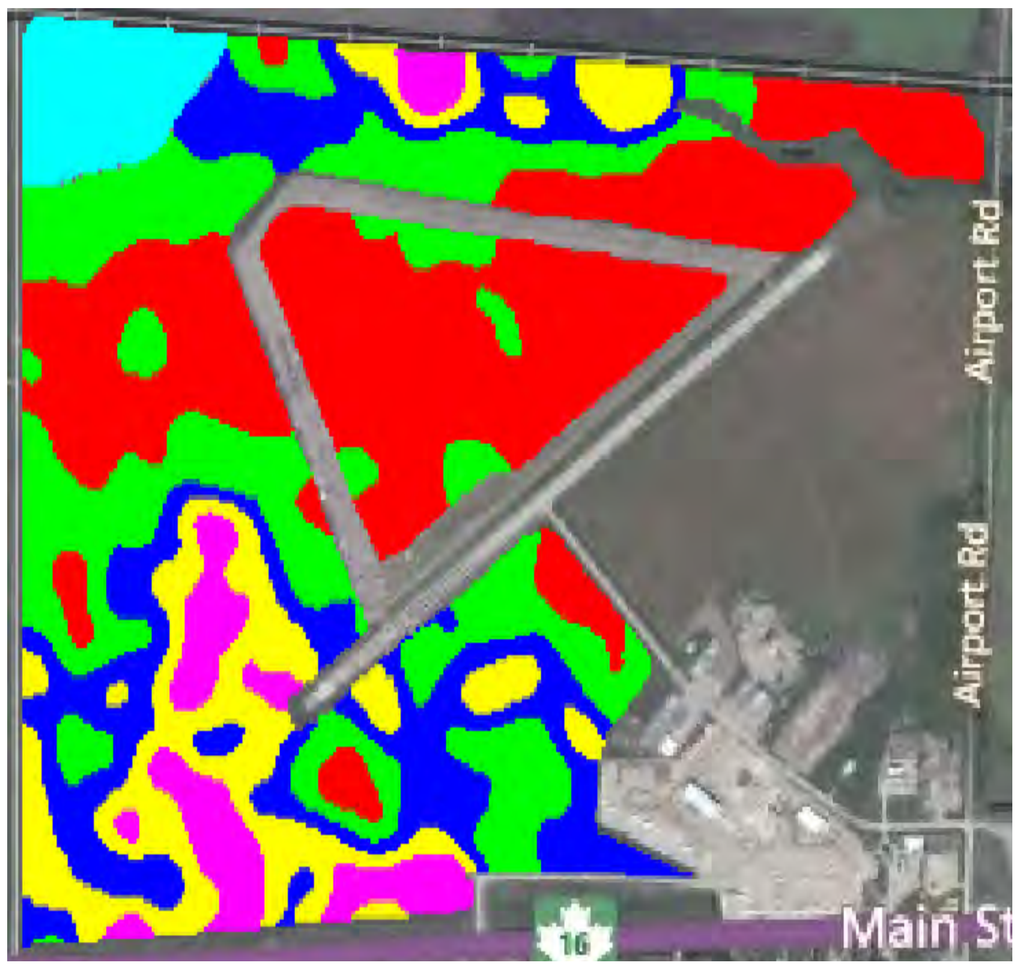
FIELDSMART PRODUCTION SOLUTIONS | ENNS BROTHERS

SMART ZONES

Understanding the carrying characteristics of your soil enables you to maximize your land's potential.

Zone

1	- Reduced yield potential - Coarser textured soil - High nutrient leaching - Higher risk of drought pressure
2	- Higher yield potential - Good SOM - Well drained with moderate water holding capacity
3	- Medium yield potential - Higher water holding capacity - Increased salinity - Potential for excess moisture
4	- Low yield potential. - High salinity - High potential for excess moisture issues.
5	- Low yield potential - Very high salinity - High potential for excess moisture
6	-Low yield potential -High potential for excess moisture



Zone Map

Smart Rx

Zone	Yield Goal	Seeding Rate
1	45 bu/ac	230 000 seeds/ac
2	50 bu/ac	180 000 seeds/ac
3	40 bu/ac	200 000 seeds/ac
4	35 bu/ac	230 000 seeds/ac
5	25 bu/ac	230 000 seeds/ac
6	20 bu/ac	230,000 seeds/ac

Powered by TOTALFARM SOLUTIONS

FIELDSMART PRODUCTION SOLUTIONS | ENNS BROTHERS

FIELD RESEARCH SUPPORT

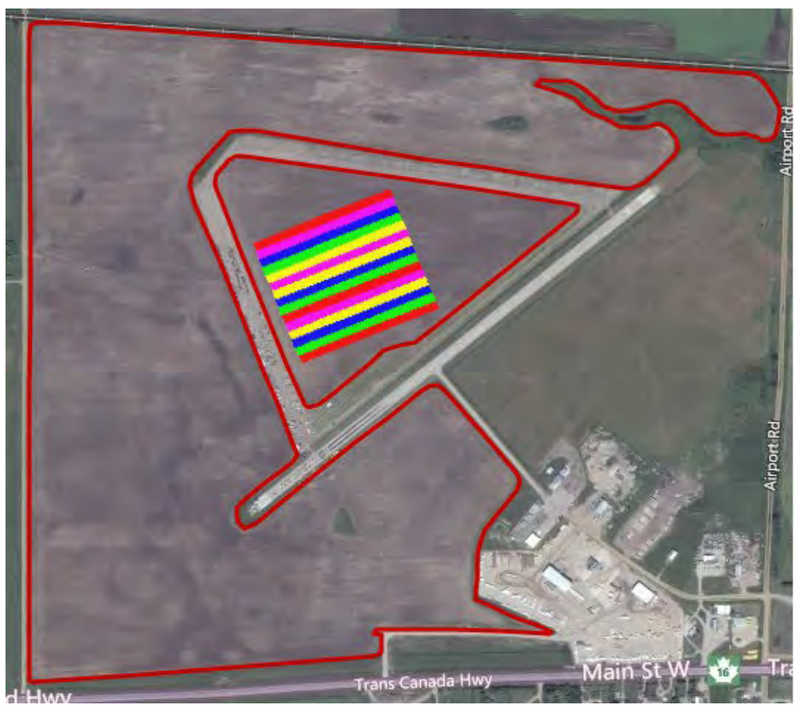
Field scale research enablement and support with small plot design, replication and analytics.

Agronomy:

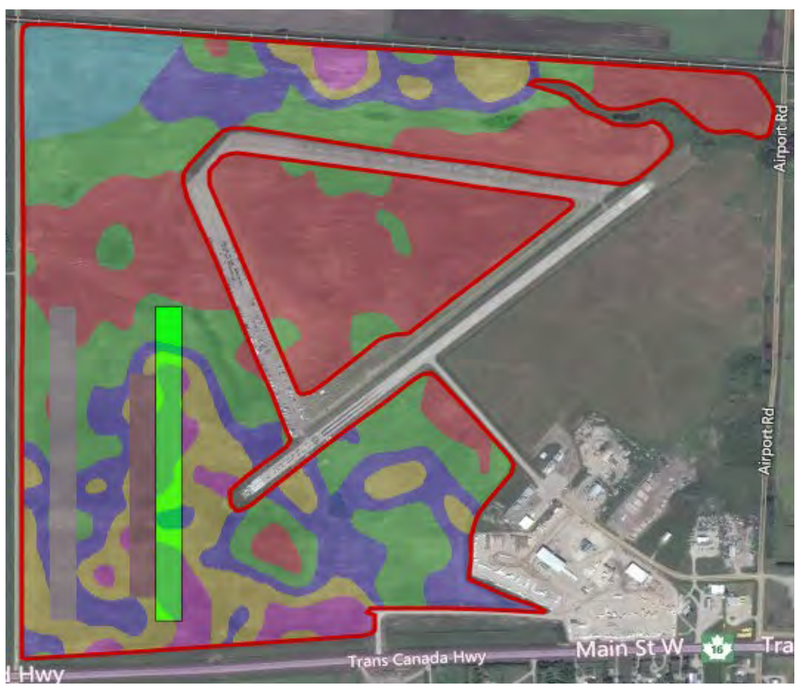
- One acre strips, replicated three times with each variety
- Varieties used: P006T78R, P006T46R, S0009M2, P005T13R, and S003L3
- Ten acre strip planted at a speed of 7.5 m/hr
- The rest of the field is planted at 5.4 m/hr
- Brown strip seeded at 160,000 seeds/acre
- Grey strip seeded at 190,000 seeds/acre

Equipment:

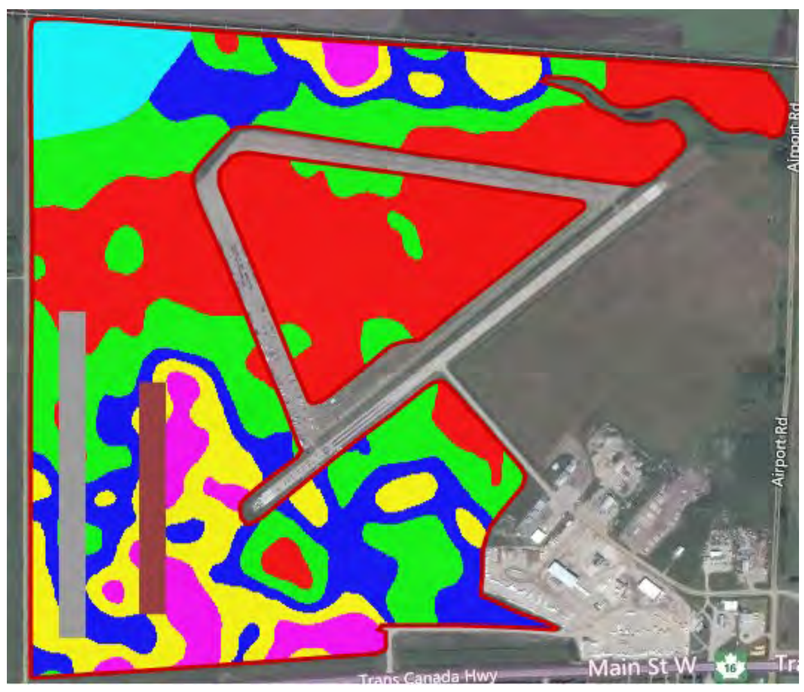
- John Deere 1890 disc drill, 60’
- John Deere 1910 air cart (hydraulic drive 550 bu.)
- John Deere 9560R tractor
- John Deere Section Control
- John Deere Field Connect
- John Deere RTK
- FieldSmart variable rate
- FieldSmart electrical conductivity mapping
- FieldSmart imagery



Soybean Variety Trial



Seeding Speed trial



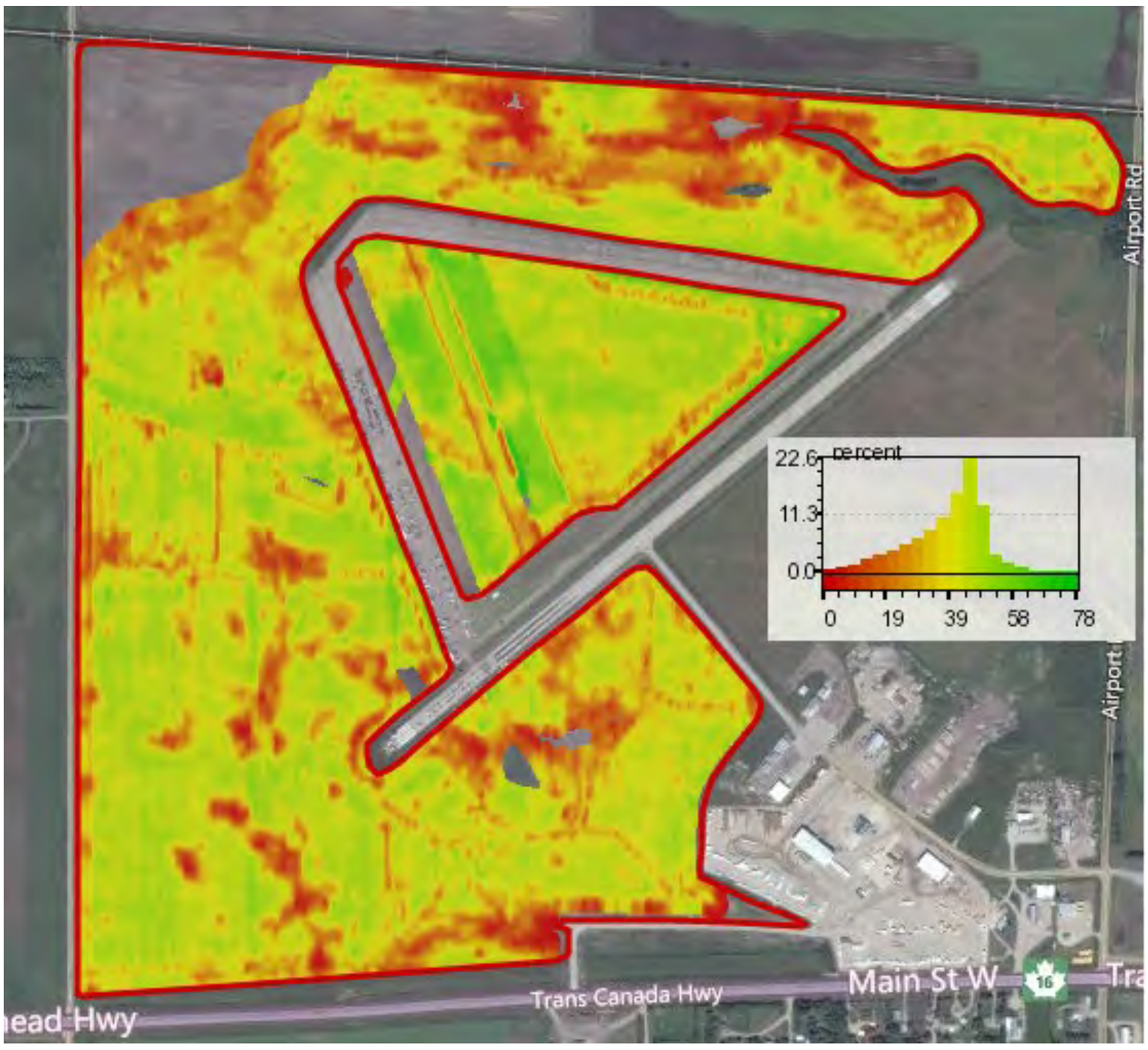
Seeding Rate Trial

Powered by TOTALFARM SOLUTIONS

FIELDSMART PRODUCTION SOLUTIONS | ENNS BROTHERS

SMART DATA

The most advanced program of collecting, storing and accessing farm collected data.



2015 Yield

Rx

Zone	2015 Yield Goal	2015 Actual Yield
1	30	43
2	45	37
3	40	36
4	30	34
5	20	25

Powered by TOTALFARM SOLUTIONS

FIELDSMART PRODUCTION SOLUTIONS

ENNS BROTHERS