

Station 2: Treatment and Plot Layout

4R Nutrient Stewardship Self-Guided Tour

- ✦ 4R Nitrogen Fertilizer Study under the Corn Science Cluster of the Grain Field Crop Research Alliance
- ✦ Project is for 3 year and started 2018 with the U Manitoba as the project lead and co-investigation institutions of AAFC, University of Guelph and McGill University
- ✦ Objectives
 - ✦ 1) Evaluation of Benefit of 4R Practices for
 - ✦ Agronomic
 - ✦ Environmental
 - ✦ 2) Development of in-season N assessment tools
- ✦ Objective 1) has field sites at Carman (MB), Ridgetown (ON), Harrow (ON) and Montreal (QC)
- ✦ Objective 2) has field sites at Portage La Prairie (ON) and Quebec (QC)
- ✦ You are visiting the Carman site for Objective 1)
- ✦ Treatments are designed to compare
 - ✦ Granular urea and UAN (28-0-0) to their enhanced efficiency fertilizer options (Source)
 - ✦ Broadcast incorporation, mid-row banding, surface dribble and side-dressing (Placement)
 - ✦ Pre/At Plant and in-season N application (Timing)
 - ✦ Depth of in-season side-dressing (Placement)
 - ✦ Treatment effects on most economical rate of nitrogen - MERN (Rate)

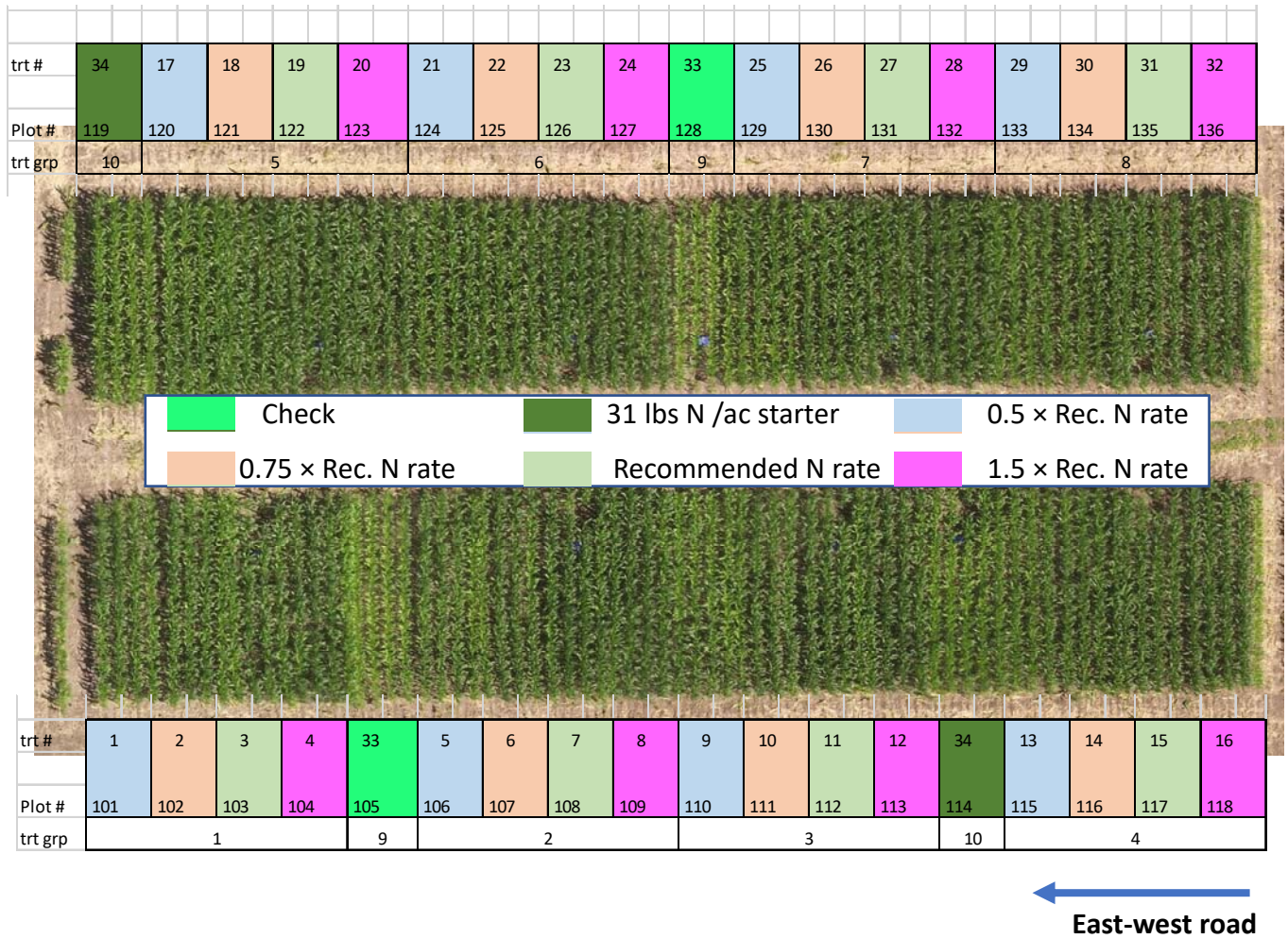


- Check
- 31 lbs N /ac starter
- 0.5 × Rec. N rate
- 0.75 × Rec. N rate
- Recommended N rate
- 1.5 × Rec. N rate

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UAV Visible Light Image of Block 1 on July 16, 2020



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trt #	trt group	Pre- or At-Planting				In-Season				Total lbs N/ac		
		lbs N/ac	Source	Timing	Placement	lbs N/ac	Source	Time	Placement			
1	1	50	urea	pre-plant	broad + incorp					50		
2		75										75
3		100										100
4		150										150
5	2	50	ESN 70% Urea30%	pre-plant	broad + incorp					50		
6		75										75
7		100										100
8		150										150
9	3	50	SuperU	pre-plant	broad + incorp					50		
10		75										75
11		100										100
12		150										150
13	4	31	urea	planting	mid-row band	19	UAN	V4	surface dribble	50		
14						44				75		
15						69				100		
16						118				150		
17	5	31	urea	planting	mid-row band	19	UAN w/ agrotain	V4	surface dribble	50		
18						44				75		
19						69				100		
20						118				150		
21	6	31	urea	planting	mid-row band	19	UAN w/ agrotain +	V4	surface dribble	50		
22						44				75		
23						69				100		
24						118				150		
25	7	31	urea	planting	mid-row band	19	UAN	V4	shallow side dress	50		
26						44				75		
27						69				100		
28						118				150		
29	8	31	urea	planting	mid-row band	19	UAN	V4	deep side dress	50		
30						44				75		
31						69				100		
32						118				150		
33	9	0	nothing	planting	mid-row band	0				0		
34	10	31	urea	planting	mid-row band	0				31		

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Station walkthrough

- ✦ **Station 1:** Project Overview
- ✦ **Station 2:** 4R Treatments and Layout
- ✦ **Station 3A:** Right Rate
- ✦ **Station 3B:** Rate
- ✦ **Station 3C:** Nitrogen Mineralization
- ✦ **Station 4:** Source
- ✦ **Station 5A:** Timing
- ✦ **Station 5B:** Timing
- ✦ **Station 6A:** Placement
- ✦ **Station 6B:** Nitrogen Placement for Corn
- ✦ **Station 7:** Nitrous Oxide – It's a Gas
- ✦ **Station 8:** Ammonia
- ✦ **Station 9:** Predicting in-season N Application Rate
- ✦ **Station 10:** 4R Summary
- ✦ **Station 11:** Further Learning
- ✦ **Station 12:** Introducing the 4R Senior Industrial Research Chair Program