

Nitrogen Fixing Bacterial Trials

Nitrogen fixing foliar bacteria Utrisha-N™ + Envita® in spring wheat (Parkland)

This trial was conducted with the agronomic support of ENtegrity Ag Solutions

Closest Town: Stony Plain

Soil type: Orthic Dark Gray Chernozem

Seeding Date: May 6, 2022

Harvest Date: September 6, 2022

Row Spacing: 30.5 cm (12")

Variety(s): 5700

Reps: Five

Previous Crop: Potatoes

Tillage: Fall cultivation with Salford

Herbicides: **Pre:** None

In-Crop: Axial Extreme® + Sentrallus™ + MCPA

Seed Treatment: Rancona® Trio

Foliar Insecticides: None

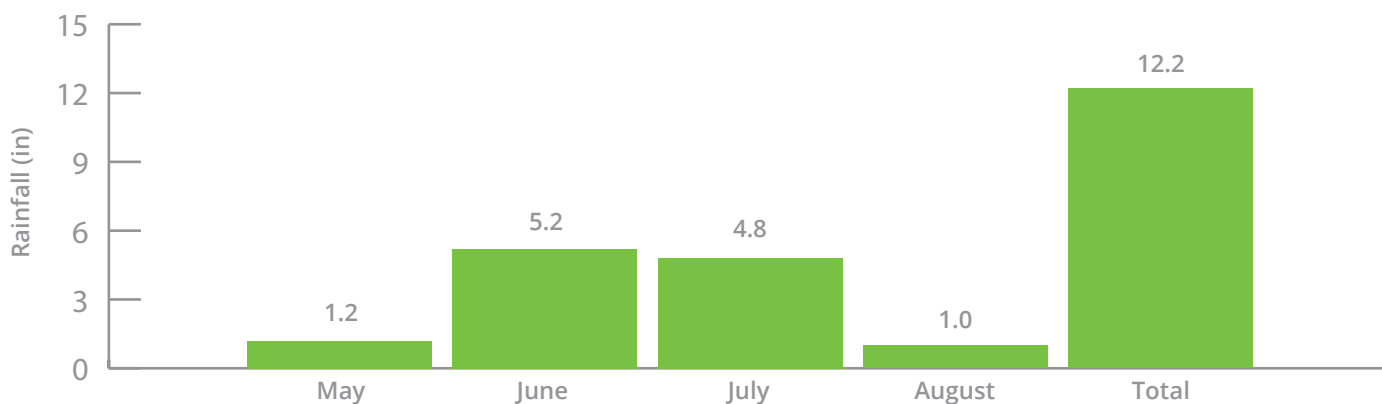
Foliar Fungicides: Folicur® 250 EW

Fertilizer: 100N-35P-35K-5S lbs nutrient/ac

Irrigation: None

Rainfall:

Rainfall (in) at trial location from May through August, 2022



Introduction

Partnering with Vermue Farms in Stony Plain, Alberta this trial compared the impacts of Utrisha-N™ + Envita® on the spring wheat variety 5700. Treatments were compared to an untreated check. The trial was seeded using a Flexicoil hoe drill with 12" (30.5 cm) row spacings and 3" openers. Target plant stand of 32 plants ft² using a seeding rate of 165 lbs ac⁻¹. Treatments were replicated and randomized.

As indicated from soil tests, soil nitrogen (NO₃) at 0-6" depth was 28 lbs ac⁻¹. Organic matter for the field was 6.5%. Utrisha-N™ + Envita® were applied at herbicide timing at label rates for the spring wheat crop. The crop stage at application of Utrisha-N™ and Envita® was five leaf and two tiller. Utrisha-N™ was applied at 135.75 g ac⁻¹ and Envita® was applied at 95mL ac⁻¹. Both products were applied as a separate pass to avoid herbicide tank mixing.

Treatments

Trial design goal:

To determine the yield and grain quality impacts of Utrisha-N™ + Envita® on spring wheat.

Treatment 1: Check

Treatment 2: Utrisha-N™ applied at herbicide timing

Treatment 3: Envita® applied at herbicide timing

Results

In-crop assessment results

Plant stand assessments were conducted 21 days after seeding. The average plant stand within the trial area was 31.5 plants/ft².

Yield results

No significant differences in yield were seen between treatments (Table 1).

Table 1: Yield, and quality results comparing Utrisha-N™ + Envita® to an untreated check on the Canada Prairie Spring Red (CPRS) variety 5700, in Stony Plain, Alberta, 2022.

Treatment	Yield at 14.5% seed moisture content (bu ac ⁻¹)	Protein (%)	Test Weight (lb/bu)
Check	123.5 a	11.0 a	65.8 a
Utrisha-N™	123.6 a	10.8 a	65.9 a
Envita®	123.0 a	11.0 a	65.7 a
p-value	0.5481	0.3276	0.4871
CV%	1.13%	2.05%	0.31%

Values with the same letter are not significantly different. Significant difference if $p \leq 0.05$.

Grain quality results

No significant differences were seen on any grain quality parameters (Table 1).

Economics

No differences were seen between treatments. Therefore, the most economical treatment is the check.

Summary

No change in yield or quality parameters were seen when Utrisha-N™ and Envita® foliar nitrogen fixing bacteria treatments were applied under these trial conditions.