

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

This trial was conducted with the agronomic support of FarmWise Inc.

Closest Town: Claresholm, Alberta

Soil type: Orthic Dark Brown Chernozem on medium textured till

Seeding Date: April 26, 2022

Harvest Date: August 22, 2022

Row Spacing: 10" (25.5 cm)

Variety(s): AAC Brandon

Reps: Four

Previous Crop: Field Pea

Tillage: No

Rainfall:

Herbicides: Pre: Glyphosate + Prepass™ Flex

In-Crop: Simplicity™ GoDRI™ + Octtain™ XL

Seed Treatment: Insure® Cereal

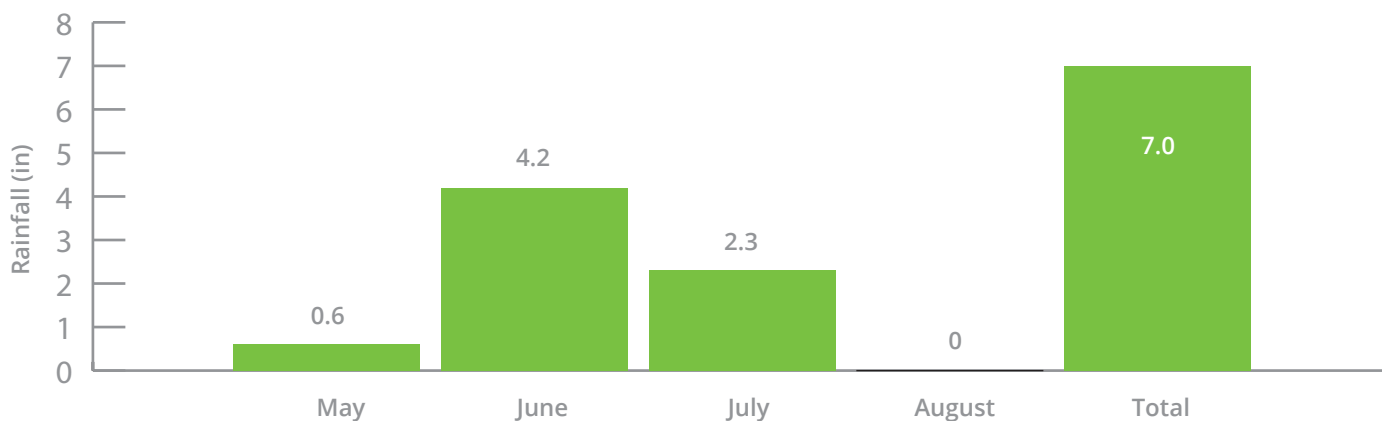
Foliar Insecticides: None

Foliar Fungicides: None

Fertilizer: 70N-22P-0K lbs nutrient/ac

Irrigation: None

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



Introduction

Partnering with Southwest Farms in Claresholm, Alberta, this trial compared the impacts of Utrisha-N™ + Envita® on the spring wheat variety AAC Brandon. Treatments were compared to an untreated check. The trial was seeded using a New Holland hoe drill with 10" (25.5 cm) row spacings and 3 1/2" paired row openers. Target plant stand of 27 plants ft² using a seeding rate of 90 lbs ac⁻¹. It should be noted that soil moisture at seeding was very poor. Soil moisture was found at the 15" depth (38.1 cm). Treatments were replicated and randomized.

As indicated from soil tests, soil nitrogen (NO₃) at 0-24" depth was 47lbs ac⁻¹ (17 lbs ac⁻¹ in the 0-6" and 30 lbs ac⁻¹ in the 6-24" depth). Field organic matter was 3.0%.

Utrisha-N™ + Envita® were applied at herbicide timing at label rates for the spring wheat crop. 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 12 plants ft². The below target plant stand was likely related to the very poor soil moisture conditions at and after seeding.

Yield results

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

Table 1: Yield, and quality results comparing Utrisha-N™ + Envita® to an untreated check on the Canada Western Red Spring (CWRS) variety AAC Brandon, in Claresholm, Alberta, 2022.

Treatment	Yield at 14.5% seed moisture content (bu ac ⁻¹)	Protein (%)	Test Weight (lb/bu)
Check	46.3 a	14.6 a	63.1 a
Utrisha-N™	47.1 a	14.6 a	63.1 a
Envita®	46.8 a	14.7 a	63.2 a
<i>p</i> -value	0.7954	0.2577	0.9395
CV%	4.99%	0.71%	0.41%

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.