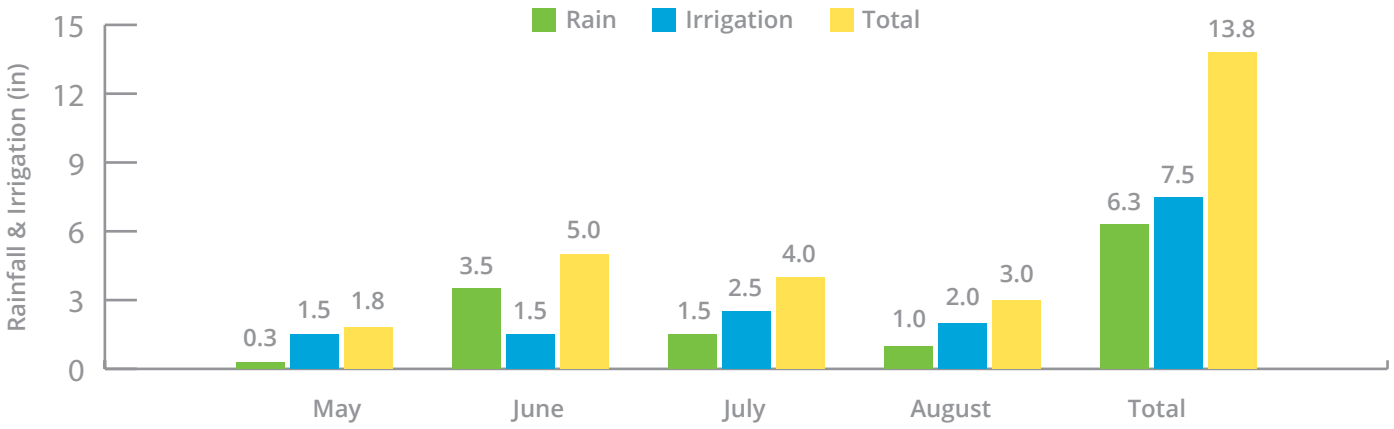
Nitrogen fixing foliar bacteria Utrisha-N™ + Envita® in durum irrigation (Willow Creek)

This trial was conducted with the agronomic support of FarmWise Inc

Closest Town: Barons, Alberta
Soil type: Orthic Dark Brown Chernozem on medium textured sediments
Seeding Date: April 30, 2022
Harvest Date: September 14, 2022
Row Spacing: 10" (25.5 cm)
Variety(s): AAC Stronghold
Reps: Four
Previous Crop: Yellow Pea
Tillage: None
Rainfall & Irrigation:

Herbicides: Pre: Roundup Transorb® + Blackhawk®
In-Crop: Varro® + Buctril M®
Seed Treatment: Teraxxa® F4
Foliar Insecticides: None
Foliar Fungicides: Folicur® 250 EW
Fertilizer: At and prior to seeding: 172N-30P-0K-10S lbs nutrient/ac PLUS 20lbs N applied through fertigation on July 9

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



Introduction

Partnering with Bishop Farms Ltd. in Barons, Alberta, this trial compared the impacts of Utrisha-N™ + Envita® on the durum wheat variety AAC Stronghold. Treatments were compared to an untreated check. The trial was seeded using a Bourgault Paralink hoe drill with 10" (25.5 cm) row spacings and ¾" openers. Target plant stand of 21 plants ft^2 using a seeding rate of 110 lbs ac^{-1}. Treatments were randomized and replicated.

As indicated from soil tests, soil nitrogen (NO_{-3}) at 0-12" depth was 35 lbs ac^{-1}. Field organic matter was 2.9%.
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 to six leaf with two to three tillers. 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 durum 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 22 plants/ft^2.

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 Amber Durum (CWAD) variety AAC Stronghold in Barons, Alberta, 2022.

Treatment	Yield at 14.5% seed moisture content (bu ac^{-1})	Protein (%)	Test Weight (lb/bu)
Check	105.6 a	14.8 a	63.5 a
Utrisha-N™	104.2 a	14.6 a	63.2 a
Envita®	103.3 a	15.0 a	64.0 a
***p*-value**	*0.6023*	*0.2608*	*0.266*
CV%	3.88%	2.07%	1.09%

Values with the same letter are not significantly different. Significant difference if p≤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.