

# Row Spacing Trial

## 7.5" vs 15" row spacing in spring wheat (Foothills)

**Closest Town:** Blackie, Alberta

**Soil type:** Orthic Black Chernozem on medium textured till

**Seeding Date:** May 6, 2022

**Harvest Date:** September 6, 2022

**Row Spacing:** 7.5" (19 cm) and 15" (38 cm)

**Variety(s):** CDC Go

**Reps:** Five

**Previous Crop:** Peas

**Tillage:** None

**Herbicides:** **Pre:** PrePass™ Flex + Glyphosate

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

**Seed Treatment:** Raxil®

**Foliar Insecticides:** None

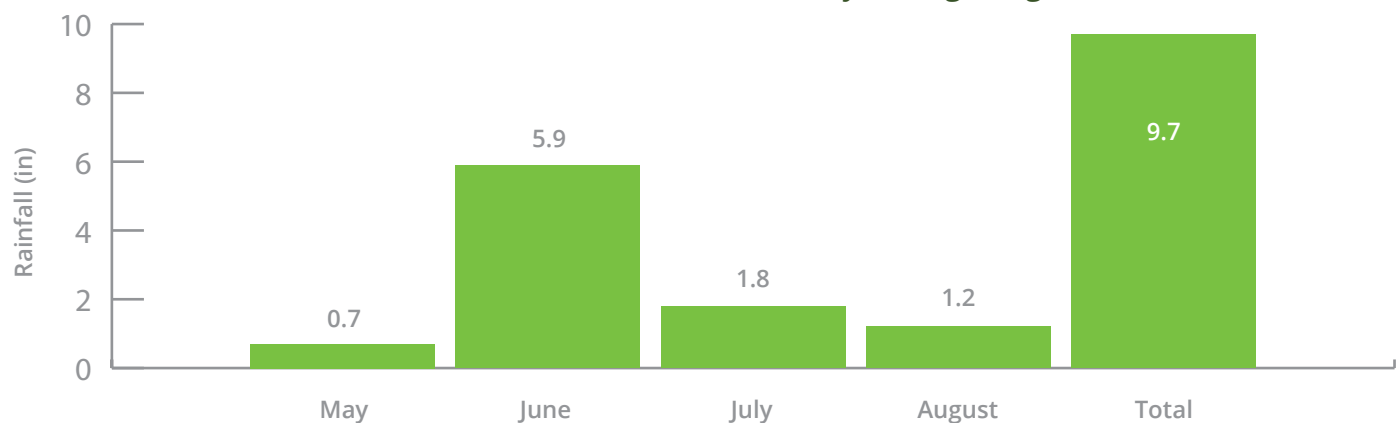
**Foliar Fungicides:** Orius® 430 SC

**Fertilizer:** 70N-27P-0K-0S

**Irrigation:** None

### Rainfall:

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



## Introduction

Partnering with Newman Farms in Blackie, Alberta, this trial compared 7.5" rows to 15" rows on the spring wheat variety CDC Go. The trial was seeded using a 60-foot SeedMaster UltraSR drill with 38 cm (15") and 19 cm (7.5") row spacings. The 19 cm (7.5") row spacings were implemented by making two passes and seeding between the first pass rows using RTK. To adjust for two passes, seed and Fertilizer rates were applied at half rates for each pass. To account for the compaction caused by the extra pass required on the 19 cm (7.5") treatment, a non-working pass was made on each 38 cm (15") row treatment to increase compaction uniformity between treatments. Treatments were replicated and randomized.

## Treatments

### *Trial design goal:*

To determine the yield and grain quality impacts of 7.5" to 15" rows on spring wheat production.

**Treatment 1:** 7.5" rows

**Treatment 2:** 15" rows

## Results

### *In-crop assessment results*

Plant stand assessments were conducted 21 days after seeding to potential differences in plant stand due to row spacing. Row spacing had no effect on the plant stand. The 7.5" rows and 15" rows had non-significantly different plant stands of 33.1 and 30.6 plants/ft<sup>2</sup> (Table 1).



Above: Trial photo taken July 13, 2022, comparing 15" rows (left) and 7.5" rows (right).

### Yield results

Row spacing had significant effects on the yield of CDC Go. 15" rows led to a 3% reduction in yield from 84.1 bu ac<sup>-1</sup> to 81.8 bu ac<sup>-1</sup>.

**Table 1:** Yield, and quality results comparing 7.5" to 15" rows on the Canada Western Red Spring (CWRS) variety CDC Go in Blackie, Alberta, 2022.

| Treatment      | Plant stand count at 21 days after seeding (plants/ft <sup>2</sup> ) | Yield at 14.5% seed moisture content (bu ac <sup>-1</sup> ) | Protein (%) | Test Weight (lb/bu) |
|----------------|----------------------------------------------------------------------|-------------------------------------------------------------|-------------|---------------------|
| 7.5" Row Width | 33.1 a                                                               | 84.1 a                                                      | 11.4 a      | 66.8 a              |
| 15" Row Width  | 30.6 a                                                               | 81.8 b                                                      | 12.1 b      | 66.7 a              |
| p-value        | 0.4479                                                               | 0.0445                                                      | 0.0006      | 0.3                 |
| CV%            | 16.07%                                                               | 2.91%                                                       | 3.46%       | 0.21%               |

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

### Grain quality results

Under 15" rows, protein increased 6% from 11.4% to 12.1% when compared to 7.5% rows.

### Economics

**Table 2:** Economic comparison of 7.5" and 15" row spacing on the Canada Western Red Spring (CWRS) variety CDC Go in Blackie, Alberta, 2022.

| Treatment      | Yield at 14.5% seed moisture content (bu ac <sup>-1</sup> ) | Profit (\$ ac <sup>-1</sup> )* |
|----------------|-------------------------------------------------------------|--------------------------------|
| 7.5" Row Width | 84.1                                                        | \$925.10                       |
| 15" Row Width  | 81.8                                                        | <b>\$899.80</b>                |

Assuming \$11.00/bu at the elevator

When focusing on yield, the economics of the 7.5" row spacing was superior. However, wide row spacing comes with economic benefits such as equipment and fuel costs. That being said, wider row spacing may pose longer term economic challenges such as weed competition. A true assessment of economic viability between treatments would require long term analysis.

## Summary

15" rows in spring wheat led to a decrease in yield by 3%. However, the wider row spacing led to an increase in protein by 6%.