# Pea Nitrogen Fertility Trial

**Trial ID: 2020_PN01 – R.M. of Pembina**

**Objective:** Quantify the agronomic and economic impacts of nitrogen fertilizer rates in field peas

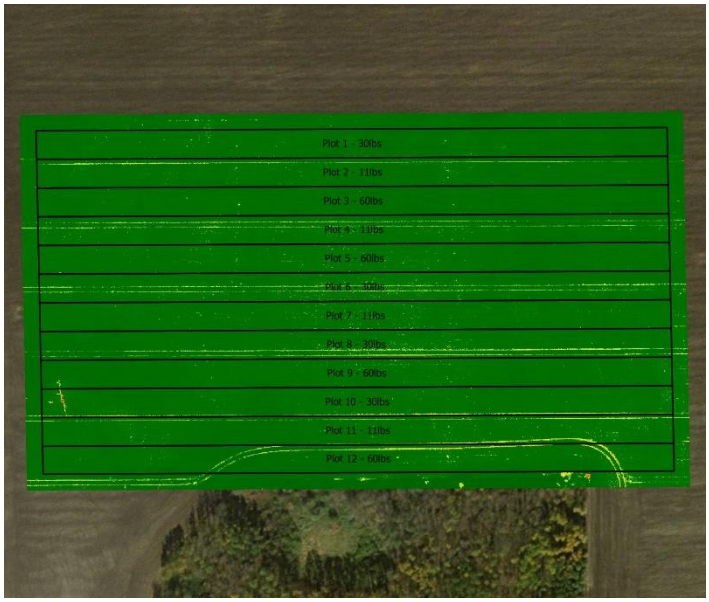
**Summary:** There was no significant yield difference between nitrogen fertilizer treatments. Protein analysis will be conducted to determine if the fertilizer treatments influenced pea protein content.

## Trial Information

| | |
|---|---|
| **Treatment ǂ** | 11 vs 30 vs 60 lb N/ac |
| **Rural Municipality** | Pembina |
| **Soil Texture** | Clay Loam |
| **Previous Crop** | Canola |
| **Tillage** | Zero Till |
| **Fall 2019 Soil N** | 8 lb/ac (0-8″) |
| **Seeding Date** | May 7 |
| **Variety** | AAC Chrome |
| **Seeding Rate** | 180 000 seeds/ac |
| **Row Spacing** | 7.5″ |
| **Plant Stand @ V1** | 184 000 plants/ac |
| **Harvest Date** | August 20 |

**ǂ The 11 lb N/ac treatment is from the N contribution of an S15 application which is standard practice for this producer. The 30 and 60 lb N/ac treatments include ESN-N in addition to the S15-N contribution.**

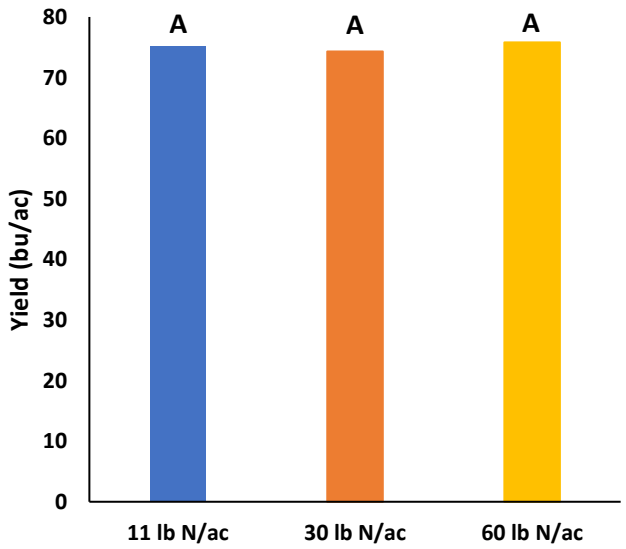
## NDVI Field Image July 24




## Precipitation (mm)

| | May | June | July | August |
|---|---|---|---|---|
| **Normal** | 58.6 | 90.8 | 73.3 | 63.6 |
| **Rainfall** | 39.1 | 53.1 | 80.7 | 18.7 |

## Yield by Treatment




## Nodulation ǂ

| | Average Nodulation Rating @R2ǂ |
|---|---|
| **11 lb N/ac** | 3.5 |
| **30 lb N/ac** | 3.5 |
| **60 lb N/ac** | 2.9 |

**ǂ 0 = no nodules, 1 = Poor (<5/plant), 2 = Fair (<10/plant), 3 = Good (<20/plant), 4 = Excellent (>20/plant)**

## Soil Test N

| Treatment | 0-24″ Fall N (lb N/ac) |
|---|---|
| **11 lb N/ac** | 20 |
| **30 lb N/ac** | 17 |
| **60 lb N/ac** | 18 |

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## Overall Yield & Economics

| | Mean (bu/ac) | Cost ǂ | Change in Profit/ac ǂ ǂ |
|---|---|---|---|
| **11 lb N/ac** | 75.2 | | |
| **30 lb N/ac** | 74.3 | $19/ac | -$19/ac |
| **60 lb N/ac** | 75.8 | $38/ac | -$38/ac |
| **P-Value** | 0.7326 | | |
| **CV** | 3.4% | | |
| **Significance** | **No** | **Economic** | **No** |

**ǂ Based on estimated ESN cost of $610/MT; 11 lb N/ac is contribution from S15 application which is standard practice for this producer, so there is no additional cost accounted for in this treatment**

**ǂ ǂ There was no significant difference in yield to offset the cost of ESN/ac**

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