# Optimization of Row Width and Seed Spacing for Red Norland

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## Introduction

Size, quality, and quantity of Red Norland potatoes for fresh market is critical for growers to achieve to maintain sustainable economic returns. Previous work has evaluated seed spacing, row width spacing, but studies combining row width and seed spacing are uncommon because of the lack of standard equipment for such work in potato cultivation, resulting in significant labor costs. Pavek (et al. 2008) found that 32-inch row spacing had a yield and economic advantage for several russet cultivars in the Columbia River Basin. The purpose of this study was to evaluate the effects of row width and seed spacing on yield and profitability of Red Norland in Minnesota.

## Methods

- Location: Becker, MN
- Years: 2022-2023
- Cultivar: Red Norland
- Treatments:
  A. Row Spacing: 28, 30, 32, 34, 36 inches
  B. Seed Spacing: 8, 10, 12 inches
- Nutrition, irrigation, agronomy held constant across plots
- Budget accounted for variable seed costs
- Statistics: ANOVA (p=0.05)
  - » Tukey pair-wise
  - » Row spacing x seed spacing not significant

## Results

Figure 1. Red Norland tuber number as affected by row spacing at Becker, MN in 2022 and 2023.

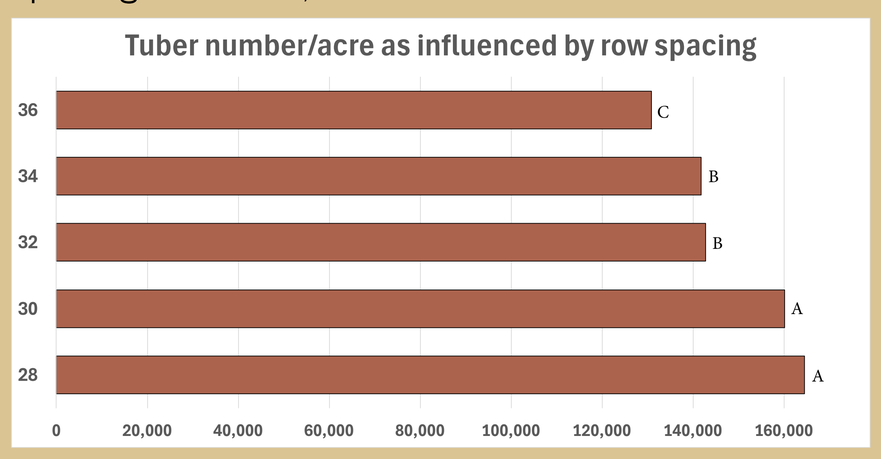



Figure 2. Red Norland tuber yield by size (Chef, A, B, C) affected by row spacing in Becker, MN in 2022 and 2023.

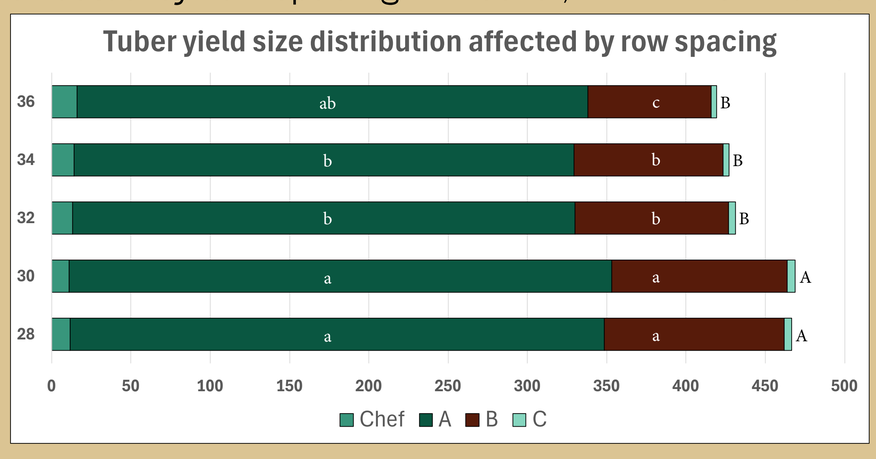
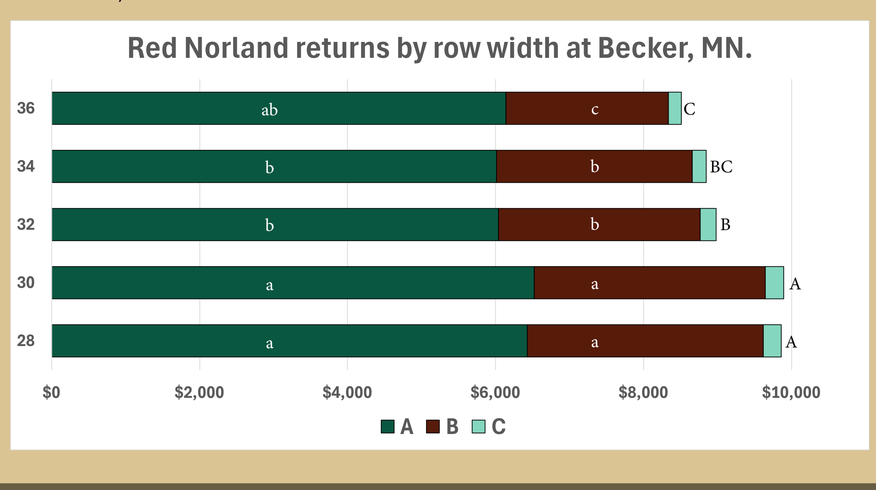



Figure 3. Red Norland economic return by row width at Becker, MN in 2022 and 2023.




## Conclusions

- **Tuber number increased with narrower rows.**
- **Yield was higher at row widths of 28 and 30 inches compared to wider row widths.**
- **Narrow row widths of 28 and 30 inches were more profitable compared to wider rows.**

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