

# Factsheet: Peola vs. Mono-Crop Seeding Rates and Fungicide Application



## Objective:

The objective of this trial was to evaluate how different seeding rates of pea and canola intercropped compare to their monocrops. This trial evaluated the new recommended seeding rates of canola and how they perform in intercropping compared to the canola monocrop. Lastly this project demonstrated the effect of one fungicide application versus no fungicide application on disease pressure in intercropping compared to monocrops.

## Methodology:

The demonstration was arranged as a split-block design with four replicates and twelve treatments at Scott, SK 2019. The trial was split, for ease of spraying, into fungicide application versus non fungicide application, with seeded buffers of the canola monocrop (5 plants/ft<sup>2</sup>) separating the different canola seeding rates for maturity timings. The trial was sown on wheat stubble using a Fabro knife-opener drill with 10-inch row spacing. The canola was seed placed, while the peas with the inoculant were side banded.

**Table 1.** Demonstration treatment list of canola and pea seeding rates with fungicide application (Y/N) on the trial “Peola vs. Mono-Crop Seeding Rates” in Scott, SK in 2019

| TRT | Fungicide Application (Y/N) | Field Pea Seeding Rate (plants/m <sup>2</sup> ) | Canola Seeding Rate (plants/ m <sup>2</sup> ) |
|-----|-----------------------------|---|---|
| 1   | Yes                         | 80  | 0   |
| 2   | Yes                         | 0   | 54  |
| 3   | Yes                         | 80  | 54  |
| 4   | Yes                         | 80  | 32  |
| 5   | Yes                         | 40  | 54  |
| 6   | Yes                         | 40  | 32  |
| 7   | No                          | 80  | 0   |
| 8   | No                          | 0   | 54  |
| 9   | No                          | 80  | 54  |
| 10  | No                          | 80  | 32  |
| 11  | No                          | 40  | 54  |
| 12  | No                          | 40  | 32  |

## Key Findings:

- The results indicate that the field pea seeding rates targeted of 80 and 40 plants/m<sup>2</sup> were achieved as crop densities varied between the 60 and 30 plants/m<sup>2</sup>. The higher canola seeding rate on average resulted in a greater plant density than the lower seeding rate. Canola plant density varied greatly throughout the trial and in general had poor emergence due to seeding and environmental constraints.
- The application of a fungicide reduced disease pressure in peas and resulted in a 6 bu/ac yield gain compared to the unsprayed peas. Fungicide application has a lesser effect on the lower pea seeding

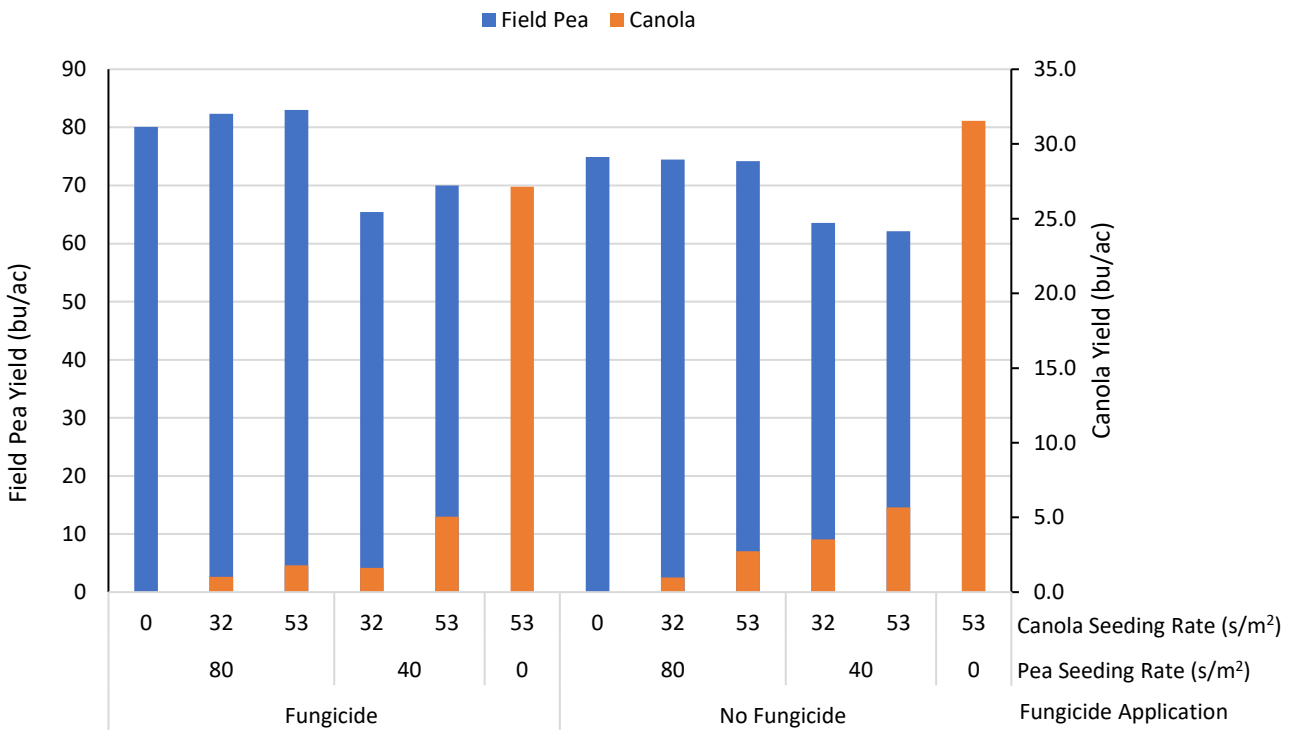
The full report will be available at: [www.warc.ca](http://www.warc.ca). This project was supported by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Government of Saskatchewan and the Government of Canada under the Canadian Agricultural Partnership.

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rates, however, a 5 bu/ac gain occurred when a fungicide was applied compared to when no fungicides were applied.

- The disease levels in canola were relatively low (<20%) prior to application but 2 WAA there was a 47% increase in disease pressure in the unsprayed treatments compared to the sprayed. Alternatively, disease pressure within the field peas were strongly related to seeding rates.
- Intercropping canola with peas was speculated to reduce the amount of disease development in peas, as the canola improves canopy air flow and reduces lodging. These two factors should reduce disease development, however, the monocrop and intercropped peas had similar disease levels.
- The two highest yields of 83 bu/ac and 82.3 bu/ac occurred at the high pea seeding rate (80 seeds/m<sup>2</sup>) intercropped with canola at 53 plants/m<sup>2</sup> and 32 plants/m<sup>2</sup> with a fungicide application.
- The two highest canola yields occurred when canola was seeded as a monocrop at the highest seeding rate of 53 seeds/m<sup>2</sup> with and without a fungicide application.



**Figure 1.** Comparing the yield (bu/ac) of field pea and canola seeding rates seeded as an intercrop and monocrop at two different seeding rates of field pea at 80 vs. 40 seeds/m<sup>2</sup> and canola at 53 vs. 32 plants/m<sup>2</sup> with and without a fungicide application in Scott, SK in 2019.

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