

Pea/canola intercropping is considered the most suitable intercropping option for the northern Saskatchewan agricultural region. Peas are a common and successfully grown crop in the area, but the recent fall in yellow and green pea prices has renewed interest in more niche pea classes with higher prices. These niche pea varieties are often prone to lodging, but canola could act as a trellis to hold up the peas and knit the crop together.

To explore the ability of intercropping to reduce lodging and examine the different pea varieties and their suitability for intercropping, a trial was conducted near Prince Albert in 2019. Five types of peas (green, yellow, Dun, Maple, and Marrowfat) were evaluated in intercrop with Nexera canola and as a monocrop.

Canola was also grown as a monocrop. These treatments were replicated 4 times. Dry spring conditions in 2019 with high flea beetle pressure resulted in very populations of canola plant stands in both the monocrop and intercrop plots, and dry conditions and deer browsing greatly reduced pea yields. Intercropped Maple peas had a significantly greater yield than Dun peas, and overall had the highest biomass and yield of the peas.

The intercropped Maple peas also had the best land equivalency ratio of 1.8, meaning that a total of 1.8 ha of sole cropping would be required to produce the same yield as 1 ha of maple peas and canola intercrop (Table 1). As seen in Figure 1, intercropping with canola decreased lodging for every pea variety. Monocrop Maple and Marrowfat peas were lodged the most.

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Table 1. Different marketing classes of peas grown in intercrop and monocrop at the CLC in 2019.

Treatment	Biomass (kg/ha)	Yield (kg/ha)	Yield LER
Intercrop CDC spruce green	23419 C	474 AB	1.1
Intercrop yellow Inca	23757 C	633 AB	1.4
Intercrop CDC Dakota Dun	23673 C	404 B	1
Intercrop Maples	27641 ABC	1277 A	1.8
Intercrop Marrowfat	25323 BC	572 AB	1.3
Monocrop CDC spruce green	23739 C	573 AB	N/A
Monocrop Inca Yellow	32989 A	573 AB	N/A
Monocrop CDC Dakota Dun	31395 AB	486 AB	N/A
Monocrop Maple	24939 BC	784 AB	N/A
Monocrop Marrowfat	24764 C	518 AB	N/A
Monocrop Canola	14295 A	1510 A	N/A
P value	0.0458	0.0039	0.226

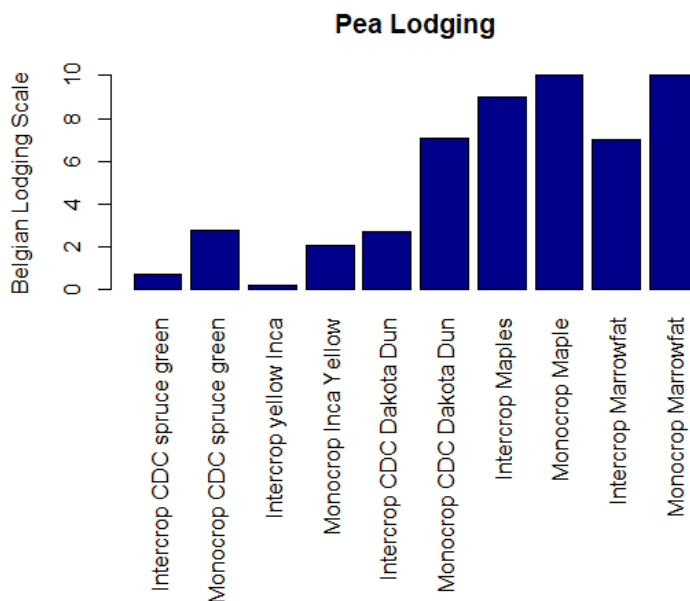


Figure 1. Scale of lodging for different marketing classes of peas grown in intercrop and monocrop at the CLC in 2019.