

Tamarack Farms Pea-Quinoa Intercrop

Project duration	May 2018 – August 2019
Objectives	To demonstrate the use of cover cropping strategies
Collaborators	Ryan Pengelly, Tamarack Farms

Results

Due to extreme insect pressure, the quinoa crop did not yield any seed. However, the intercropped peas established well and yielded seed.

Project findings

Both the quinoa and the pea crops established successfully. Unfortunately, the quinoa sustained extreme insect damage (stem borer and goosefoot groundling moth) and so it did not yield any seed. Despite the virtual failure of the quinoa crop, the accompanying pea crop performed well. The peas were seeded at varying rates, and yields varied accordingly. The success of the pea crop, despite the failure of the quinoa crop, demonstrates the potential for intercropping to reduce risk to the producer within the cropping year.

Background/References/Additional Resources

The trial was designed to examine yield differences between pea and quinoa crops seeded at combinations of high, medium and low rates for both crops. Proposed benefits of intercropping include: 1) confusion of insect populations; 2) beneficial nutrient interactions such as nitrogen fixation; 3) support for crops prone to lodging; 4) increased combined yields; 5) mitigation of the risk of crop failure; 6) weed suppression; and 7) reduced input requirements and costs.

Materials & Methods

Experimental Design	Random Complete Block Design
Entries	11
Seeding	May 24
Harvest	Sept 5

Agronomic info

Previous 2 years crop	Oat Barley Silage
Soil Type	Erickson Loam Clay
Landscape	Rolling with trees to the east
Seedbed preparation	No-till due to moisture concerns; direct-seeded into stubble

Table 1: Spring 2018 Soil Test

Available	
N	54 lb/ac
P	13 ppm
K	228 ppm
S	118 lb/ac

Added Fertility: 10lbs/ac actual P and 2.11lbs/ac actual N

Table 2: Treatments – Seeding Rate

Pea only	High pea, high quinoa	Medium pea, high quinoa	Low pea, high quinoa
	High pea, medium quinoa	Medium pea, medium quinoa	Low pea, medium quinoa
	High pea, low quinoa	Medium pea, low quinoa	Low pea, low quinoa
			Quinoa only

Data collected
Vigor

Date Collected
June 25