Evaluating different quinoa varieties under Interlake conditions

Project duration
2018

Objectives
Assessing different varieties of Quinoa for production.

Collaborators
Prairie Quinoa

Results
The test varieties did not differ in grain yield (p = 0.207) (Figure 1). Grain yield varied from 202 – 275 lbs / acre. Quinoa variety, PHX 16-02 had higher yield, although the results were not statistically significant.

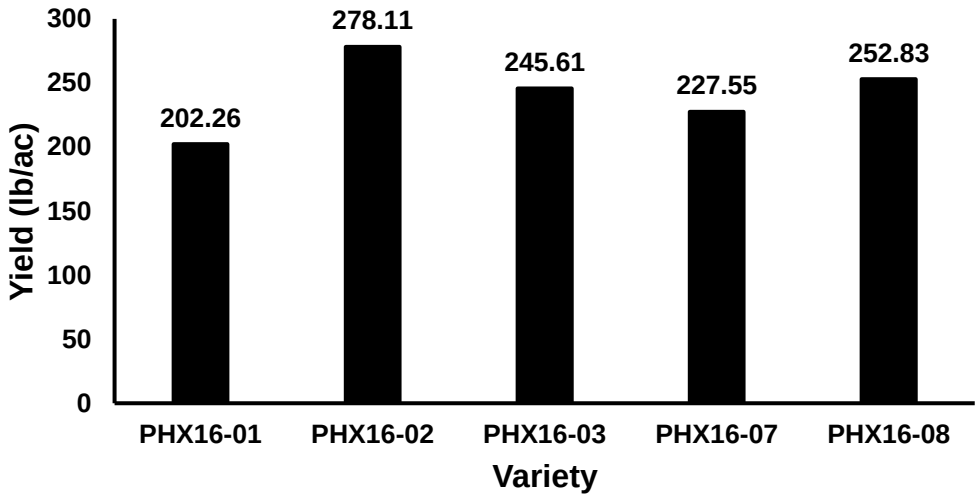

Figure 1. Yield performance of different quinoa varieties at Arborg site.

Project Findings
Grain yield was quite low for all the Quinoa varieties. As Arborg site experienced a relatively drier year, it might have affected yield potential of Quinoa varieties. The site got only 70 % of the normal rainfall during active growing period. The plots were infested with goosefoot groundling moth and bertha armyworm infestation and these infestations also impacted grain yield.

Background / Additional Resources / References
Quinoa is a cool season crop and it prefers short day length and cool temperatures for good growth. Fertility, seedbed preparation, seeding and harvesting parameters for quinoa are similar to canola. Quinoa requires good soil moisture to germinate but once it is established, quinoa prefers drier soils.

Various insect-pests infest Quinoa and Goosefoot groundling moth (*Scrobipalpa atriplicella*) is emerging as a serious pest in Canadian prairies (Boyd et al, 2017). Larvae of this pest can feed within the stem, on foliage, and directly on seed within the panicles, which can result in up to a 100% yield loss.

Quinoa has been traditionally grown in South America. In recent years, quinoa has been grown in Canadian Prairies to find its suitability for the region. In the current study, five varieties from Prairie Quinoa were evaluated for their yield potential.

Boyd A. Mori , Colin Dutcheshen and Tyler J. Wist (2017) *Scrobipalpa atriplicella* (Lepidoptera: Gelechiidae), an invasive insect attacking quinoa (Amaranthaceae) in North America. Canadian Entomologist 149(4): 534-39.

Materials & Methods

Experimental Design – Randomised block design with three replications
Treatments – Five Quinoa varieties (see Fig 1)
Plot size – 8.22m^2
Data collected – plant stand, yield

Agronomic info

Stubble, soil type – Canola, heavy clay
Fertilizer applied – Soil nutrient levels (lbs/acre): N – 77, P – 30, K – 600
N – 25lbs/acre and P – 20lbs/acre was applied at seeding.
Pesticides applied /*Weed control*– Hand weeding on June 23.
Decis @ 45 ml/acre on June 25 (for goosefoot groundling moth)
Decis @ 50 ml/acre on August 10 (for bertha armyworm)
Seeding/harvesting date – May 22 / Oct 19