



University of Idaho

Do Flea Beetles Prefer Certain Canola Varieties?

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Background

- Crucifer flea beetles (*Phyllotreta cruciferae*) are a major cause of economic loss for producers in the Inland Pacific Northwest growing spring canola (*Brassica napus*)
- Flea beetle damage is more severe in the early seedling stage: adults feed on young leaves and even stems, which leads to further damage
- Flea Beetles can kill plants early in the season, and insecticides prices decrease crop profits.

Objectives

- Determine if spring flea beetle damage impacts yield
- Determine if flea beetles prefer certain canola varieties over others

Methods

- Small plot experiment (Fig. 1)
- Tested 35 varieties in 2024 and 29 in 2025
- Varieties from industry cultivars and UI-bred canola cultivars
- Randomized complete block design with four replications
- Two rainfed sites, Moscow and Genesee, ID
- Flea beetle damage visual scores recorded in spring
 - 2024: 1-9 Scale
 - 2025: Percentage
- Yield recorded in the fall

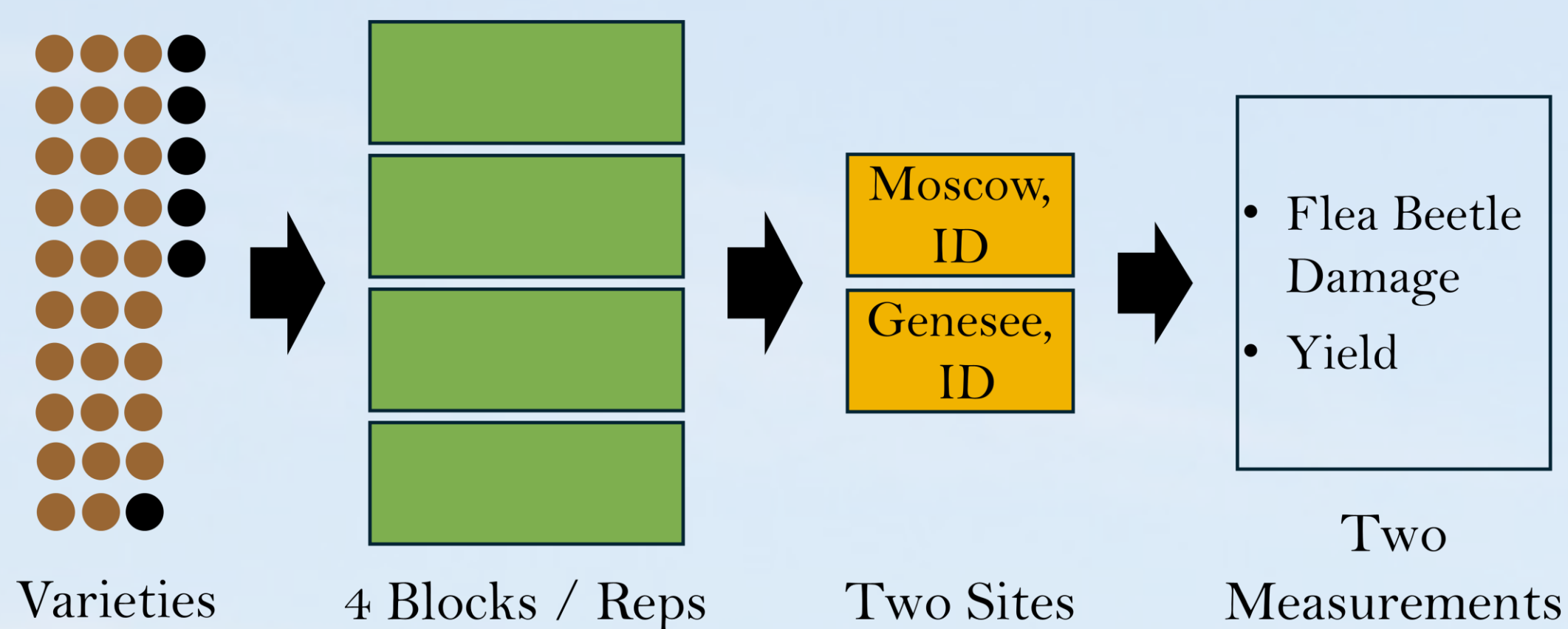


Figure 1. Experimental Design flowchart, showing varieties, reps, sites, and measurements.

Key Findings



- Spring flea beetle damage decreases fall yield (Fig. 2)
- Flea beetles appear to prefer some spring canola cultivars over others (Fig. 3)
- Flea beetle preferences are impacted by site, showing a genotype-by-environment interaction (Fig. 3)
- Findings indicate the potential to breed for flea beetle resistant cultivars; by determining which phenotypic traits and corresponding genes contribute to resistance
- Further research is required to determine the role seed-treatment may have played in cultivar resistance

Results

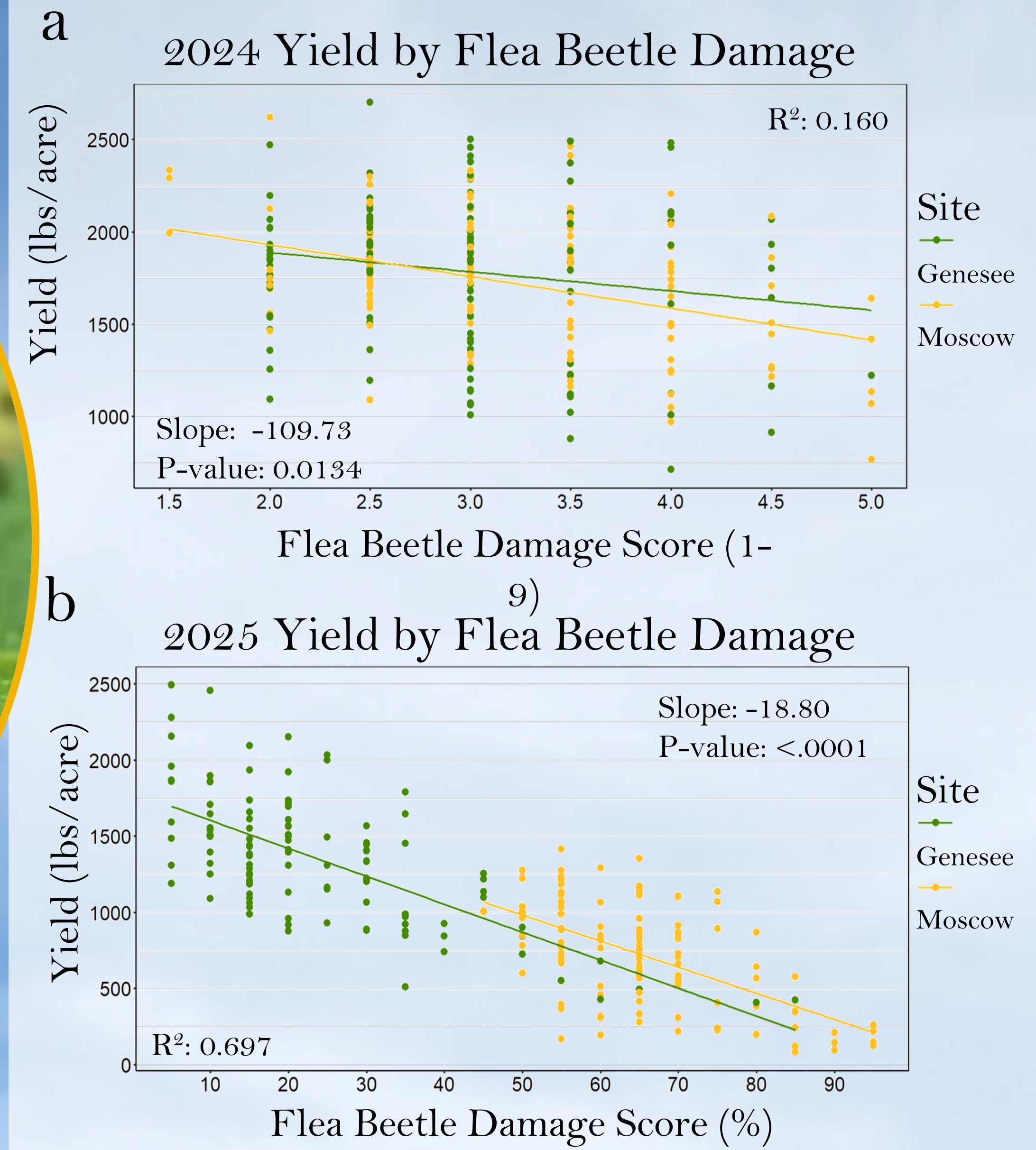


Figure 2. Scatter plots for 2024 a) and 2025 b) showing the correlation between Flea beetle damage and yield, with colors indicating site. Higher flea beetle scores indicate more damage.

Beetle Damage Interaction by Variety & Site



Figure 3. 2025 Flea Beetle Damage scores by variety and site. Each line and set of dots indicates an individual variety. Crosses indicate an interaction.