

**Abstract:**

Flea beetles are significant pests of canola in Western Canada, traditionally managed through extensive use of insecticide as seed coatings and foliar applications. Observations suggest that seeding canola into cover crops may reduce flea beetle damage. This study investigates the impact of a fall rye cover crop on flea beetle abundance, damage to canola and canola yield. We conducted two trials (2022 and 2023) in Carman, testing rye cover crop at three (2022) and four (2023) termination times and control plots without cover crops in a RCBD with four replications. Flea beetle abundance was monitored using sticky cards, and damage was assessed visually on cotyledons, and first true leaves of canola seedlings during their vulnerable growth stages. Rye terminated at the 2<sup>nd</sup> leaf stage of canola reduced flea beetle abundance and damage but resulted in significant yield loss in both years. Rye terminated at the cotyledon stage (only tested in 2023) reduced flea beetle abundance and damage during some sampling dates and resulted in intermediate yield levels. Future research should focus on cover crops and termination times that reduces flea beetle damage without reducing yield.