

# Assessing the Risk of Kerb SC Herbicide Carryover to Winter Wheat Following Use in Spring Canola

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## Reporting Period: 2022

### Accomplishments:

Winter wheat was planted in the fall of 2021 following spring canola that had received fall and spring applications of Kerb SC (1.25 & 2.5 pt/a) prior to planting (see 2021 progress report for details related to the 2021 spring canola crop). The winter wheat was harvested in August 2022.

Spring canola was grown in 2022 following fall and spring applications of Kerb SC (1.25 & 2.5 pt/a) prior to planting. Winter wheat was planted in the fall following canola harvest.

Kerb use in spring canola does pose a risk for injuring winter wheat planted in the fall after spring canola harvest.

### Results:

Winter wheat grain yields were strongly and negatively affected by Kerb SC residues in the soil (Table 1). Very few wheat plants emerged in plots treated with the 2.5 pt/a rate of Kerb. These plots were not harvested. Plots treated with 1.25 pt/a of Kerb SC yielded about one-fourth of what the nontreated check treatment yielded. It did not matter if the Kerb SC was applied in the fall or the spring.

**Table 1.** Winter wheat yield following late fall and late winter applications of Kerb SC prior to spring canola planting in the spring of 2021.

Herbicide treatment	Rate	Application date	Grain yield <sup>1</sup>
	pt/a		bu/a
Nontreated check	---	---	121 a
Kerb SC	1.25	11/21/2020	32 b
Kerb SC	1.25	3/9/2021	36 b

<sup>1</sup> Means, based on six replicates, within a column, followed by the same letter are not significantly different at P = 0.05 as determined by Fisher's protected LSD test, which means that we are not confident that the difference is the result of treatment rather than experimental error or random variation associated with the experiment.

The 2021 growing season was plagued by drought. This likely resulted in limited herbicide degradation and a worst-case scenario for herbicide carryover. The continued dry conditions at winter wheat seeding resulted in a shallow seeding depth, which may have placed the winter wheat seed in or above the layer of soil containing the herbicide residues. If true, this would have resulted in significantly more crop injury than if the seed had been placed below the soil containing herbicide residues.

None of the Kerb SC applications affected the 2022 canola yield, which averaged 1055 lb/a. The 2022 growing season was in many ways the opposite of the 2021 season.

### Publications:

No publications were written. We are awaiting results from 2023.

## Washington Oilseeds Commission

### Progress Report for 2022 Projects

Name	Supporting Agency	Total \$ Amount	Effective and Expiration Dates	% of Time Committed	Title of Project
Lyon and Wetzel	Current: Washington State University	\$7,536 for 2022/\$22,368 for three years	6/1/2021-5/31/2023	3%	Assessing the Risk of Kerb Herbicide Carryover to Winter Wheat Following Use in Spring Canola
Lyon and Thorne	Washington State University	\$10,306 for 2022/\$20,993 for two years	6/1/2022-5/31/2023	5%	Using multiple herbicide mode of actions in Roundup Ready spring canola for avoiding glyphosate resistance in Italian ryegrass
	Pending:				