

Objective:

This demonstration highlighted the importance of proper application timing when using a chemical desiccant. The objective of this study is to evaluate early and optimal application timings using four different chemical desiccants.

Methodology:

The demonstration was at Scott, SK 2019. An early application was applied when 50% of plant was yellow to brown in colour and containing 35-50% seed moisture. Later, an optimized application was applied when the pods on the bottom third of the plant were brown with hard seeds detached from pod that rattled when shaken, or when 80% of plant is yellow to brown in colour. 8 different treatments tested Reglone Ion, Heat LQ, and Glyphosate at an early and optimal timing.

Table 1. Lentil pre-harvest management rates treatment list for Scott, SK 2019.

<u>TRT</u>	<u>Product</u>	<u>Volume</u>	<u>Timing</u>
1	Reglone Ion	20 gal/ac	Early
2	Heat LQ	20 gal/ ac	Early
	Merge (0.4 L/ac)		
3	Glyphosate	10 gal/ac	Early
4	Heat LQ	20 gal/ac	Early
	Glyphosate		
	Merge (0.2 L/ac)		
5	Reglone Ion	20 gal/ac	Optimized
6	Heat LQ	20 gal/ac	Optimized
	Merge (0.4 L/ac)		
7	Glyphosate	10 gal/ac	Optimized
8	Heat LQ	20 gal/ac	Optimized
	Glyphosate		
	Merge (0.2 L/ac)		

Key Findings:

- The timing of application, regardless of the desiccant used, was the most important factor for achieving a successful harvest. Desiccants applied at the optimal timing resulted in an 11% yield gain and 4.8% increase in seed weight compared to the early application timings. Applying desiccants early resulted in lower yields as the crop was not fully matured at application resulting in smaller, shriveled seeds.

- Reglone Ion and Heat LQ with glyphosate provided the fastest crop dry down and lowest plant moisture at harvest. These two traits improved overall harvestability of the lentil crop.
- Glyphosate was the slowest and least effective method in drying down lentils. The drying period was the most prolonged under both early and optimal application timings and it also had the highest seed moisture. Under the early application timing, glyphosate dry down ratings were similar to the unsprayed check.
- Overall, application timing and environmental conditions were the two most important factors in achieving a successful harvest. Desiccant selection also played an influential role in harvest timing as Reglone Ion and Heat LQ with glyphosate resulted in the fastest dry down. This shortened drying window would be very beneficial when time is a limiting factor.

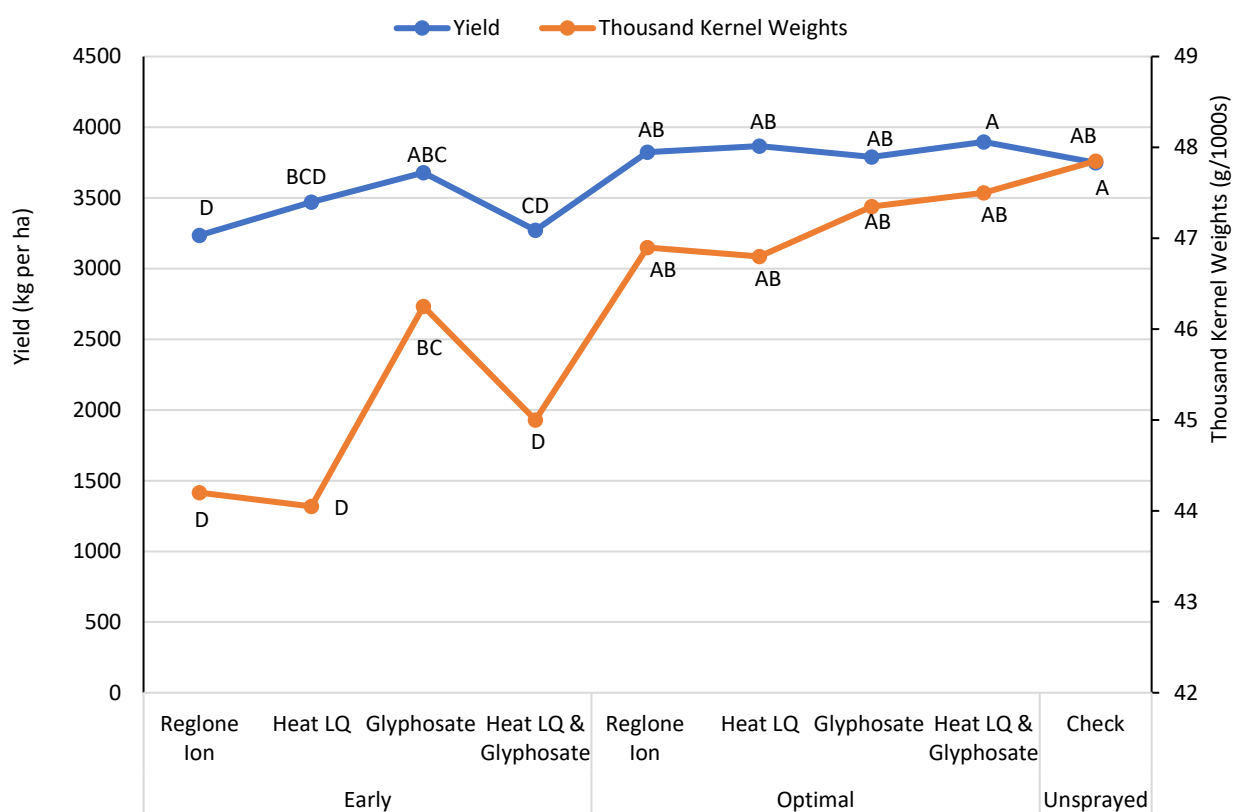


Figure 1. The effect of four desiccation products applied at two different application timings (early and late) compared to the unsprayed control on yield (kg/ha) and thousand kernel weight (g/1000s) at Scott SK, 2019. *Different letters indicate significant differences between treatments.*