Additional Canola Information

Great Plains Canola Production Handbook,
www.bookstore.ksre.ksu.edu/pubs/mf2734.pdf

Winter Canola Production in Kansas: Producer Experiences
www.bookstore.ksre.ksu.edu/pubs/MF3093.pdf

Canola Growth and Development (poster)
www.bookstore.ksre.ksu.edu/pubs/MF3236.pdf

Griffin Canola
www.bookstore.ksre.ksu.edu/pubs/L937.pdf

Riley Canola
www.bookstore.ksre.ksu.edu/pubs/L929.pdf

National Winter Canola Variety Trial
www.agronomy.k-state.edu/services/crop-performance-tests/canola-and-cotton.html

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Surefire Canola

Surefire is a winter canola cultivar tolerant to residual sulfonylurea herbicide (SURT) in the soil. This tolerance allows Surefire to be planted after a spring application of a sulfonylurea herbicide. These herbicides are commonly used in wheat production and they often have lengthy plant-back restrictions for winter canola. Planting SURT cultivars allows producers to avoid plant-back restrictions, and more wheat acres will be available for rotating to winter canola.

Surefire replaces Sumner, which was the first commercial SURT cultivar released in 2003. From 2012 through 2017, Surefire was tested as experimental, KSUR1211, in cultivar performance trials. It was released by K-State Research and Extension in 2017. Surefire is broadly adapted to the southern Great Plains and the Pacific Northwest. Foundation seed of Surefire will be available through the Kansas Foundation Seed Service. Certified seed will be available through licensed seed dealers.

Agronomic Characteristics

Surefire averages 37.7 percent total oil on a dry-seed basis. It has a glucosinolate content of 14.6 µmol/g in the oil-free meal. The average fatty acid profile measures 4.4 percent (C16:0), 1.5 percent (C18:0), 65.8 percent (C18:1), 17.8 percent (C18:2), 6.8 percent (C18:3), 1.4 percent (C20:1), and 0.0 percent (C22:1). Surefire has a 3 percent greater C18:1 content compared to Sumner (62.8 percent).

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Surefire differs from Sumner in its time to 50 percent bloom and maturity. On average, Surefire attains 50 percent bloom about 4 days later than Sumner. The consistently later-flowering period of Surefire across diverse environments and its later maturity contribute to its high-yield potential, as fuller season cultivars typically yield more than early-flowering cultivars like Sumner. Surefire's tolerance to sulfonylurea herbicide residual does not differ from Sumner's. Surefire shows good tolerance to blackleg, caused by the fungus *Leptosphaeria maculans*.

Yield Potential

Surefire was evaluated for release over the 2015/16 and 2016/17 growing seasons as an entry in regional and national variety trials. In the National Winter Canola Variety Trial (NWCVT), Surefire performed better than check SURT cultivars. Surefire yielded 332 pounds per acre more than Sumner and 168 pounds per acre more than HC225W across six site-years in Kansas (Table 1). Surefire has broad adaptability to the southern Great Plains. The yield of Surefire was better than or equal to the check SURT cultivars in four additional states where variety trials were planted. On average, the yield of Surefire ranged from 90 to 608 pounds per acre more than Sumner (Table 2). In the Pacific Northwest, the yield of Surefire was slightly less than or equal to the SURT check, HC225W, and the standard check, Amanda in 2016/17 (Table 3).

Winter Survival

Winter survival ratings are presented in Table 3 and Table 4. In the Pacific Northwest, Surefire had a better winter survival rating than Amanda and HC225W at one location where differential winterkill occurred (Table 3). In Kansas, Surefire averaged 4.1 percent and 9.0 percent better survival than Sumner and HC225W, respectively (Table 4). Its level of survival is more than adequate for diverse environments in the southern Great Plains and the Pacific Northwest.

Summary

Surefire possesses greater yield potential, is later to 50 percent bloom, and has slightly better winter survival than Sumner. Surefire has the highest level of sulfonylurea herbicide residual tolerance available on the market as it replaces Sumner. For more information on the performance of Surefire across multiple environments, please follow the link *www.agronomy.k-state.edu/services/crop-performance-tests/index.html*.

Table 1. Yield results for Surefire and SURT† cultivar checks at Kansas locations of the National Winter Canola Variety Trial.

	2015/16			2016/17			
Name	Conway Springs	Hutchinson	Kiowa	Hutchinson	Manhattan	Troy	2-year Average
	pounds per acre						
Surefire	1,770	2,725	3,035	2,745	2,095	2,563	2,488
Sumner	2,030	1,930	2,365	2,540	1,600	2,472	2,156
HC225W	2,165	2,495	2,940	2,240	2,005	2,075	2,320
Mean‡	1,898	2,235	2,838	2,500	1,816	2,094	----

† Varieties tolerant to residual sulfonylurea herbicide.

‡ Mean value is a representation of all varieties in the trials.

Table 2. Mean yields for Surefire and SURT† cultivar checks in Great Plains states in 2015/16 and 2016/17.

Name	Colorado	Nebraska	New Mexico	Oklahoma
	pounds per acre			
Surefire	2,068	2,638	3,385	2,459
Sumner	1,685	2,030	2,875	2,369
HC225W	2,188	2,143	3,255	2,348
Site years	2	2	1	7

†Varieties tolerant to residual sulfonylurea herbicide.

Table 3. Mean yield and winter survival score for Surefire and checks in the 2016/17 Pacific Northwest Winter Canola and Rapeseed Variety Trials.

Name	Idaho	Oregon	Washington	Washington
	pounds per acre			survival†
Surefire	4,476	2,532	3,666	8.0
Amanda	4,434	2,602	3,830	6.0
HC225W	4,812	2,274	3,821	6.5
Site years	2	2	2	1

†Survival rated on a scale of 1=complete winter kill to 9=no damage.

Table 4. Winter survival† results for Surefire and check cultivars in Kansas in 2016/17.

Name	Garden City	Hutchinson	Kiowa	Manhattan	Average
	survival percentage				
Surefire	81.7	100	68.3	99.3	87.3
Sumner	68.3	99.3	65.0	100	83.2
HC225W	83.3	90.0	41.7	98.0	78.3
Mean‡	82.9	96.9	51.4	98.4	---

† Winter survival is rated as the percent of fall stand that overwinters.

‡ Mean value is a representation of all varieties in the trial.