



Fungicide Efficacy for Control of Soybean Foliar Diseases

The **North Central Regional Committee on Soybean Diseases (NCERA-137)** developed this information about foliar fungicide efficacy for control of major foliar soybean diseases in the United States.

Committee members determined the efficacy rating for each fungicide by field-testing the materials over multiple years and locations. Efficacy ratings are based on the level of disease control the product achieved. Ratings do not necessarily reflect yield increases from applying the product.

A product's efficacy depends on proper application timing, rate, and application method as determined by the product label and overall level of disease in the field. Members of the committee determined differences in efficacy among each fungicide product by directly comparing products in field tests using a single application of the labeled rate (unless otherwise noted).

The table includes systemic fungicides that have been tested over multiple years and locations — it is not intended to be a list of all labeled products.

Multiple fungicides are labeled only for soybean rust, powdery mildew, and *Alternaria* leaf spot, including tebuconazole (multiple products) and myclobutanil (Laredo®). Contact fungicides (such as chlorothalonil) may also be labeled for use. Many products have specific use restrictions about the amount of active ingredient that can be applied within a period of time or the amount of sequential applications that can occur.

Read and follow all specific use restrictions before application.

This information is provided only as a guide. It is the applicator's legal responsibility to read and follow all current label directions. Reference in this publication to any specific commercial product, process, or service, or the use of any trade, firm, or corporation name is for general informational purposes only and does not constitute an endorsement, recommendation, or certification of any kind by NCERA-137, the Crop Protection Network, or its member institutions. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer.

Fungicide Efficacy for Control of Soybean Foliar Diseases¹

Class	FUNGICIDE(S)			Aerial Web Blight	Anthracnose	Brown Spot ²	Cercospora Leaf Blight ³	Frogeye Leaf Spot ⁴	Diaporthe (Pod and Stem Blight)	Soybean Rust	Target Spot	White Mold ⁵	Harvest Restriction ⁶
	Active Ingredient (%)	Trade Name	Rate/A fl. oz.)										
QoI Strobilurins Group 11	azoxystrobin 22.9%	Quadris 2.08SC [®] multiple generics ⁷	6.0-15.5	VG	VG	P-G	P	P	U	G-VG	P-F	P	14 days
	fluoxastrobin 40.3%	Aftershock 480SC [®] Evito 480SC [®]	2.0-5.7	VG	G	P-G	P	P	U	U	U	NL	R5 (beginning seed) 30 days
	picoxystrobin	Approach 2.08SC [®]	6.0-12.0	VG	G	P-G	P	P	U	G	U	G-VG ⁸	14 days
	pyraclostrobin 23.6%	Headline 2.09EC/SC [®]	6.0-12.0	VG	VG	P-G	P	P	U	VG	P-F	NL	21 days
	cyproconazole 8.9%	Alto 100SL [®]	2.75-5.5	U	U	VG	F	F	U	VG	U	NL	30 days
DMI Triazoles Group 3	flutriafol 11.8%	Topguard 1.04SC [®]	7.0-14.0	U	VG	VG	P-G	VG	U	VG-E	P	F	21 days
	propiconazole 41.8%	Tilt 3.6EC [®] multiple generics ⁷	4.0-6.0	P	VG	G	NL	F	NL	VG	U	NL	R5 (beginning seed)
	prothioconazole 41.0%	Proline 480SC ^{®9}	2.5-5.0	NL	NL	NL	NL	G-VG	NL	VG	U	F	21 days
	tetraconazole 20.5%	Domark 230ME [®]	4.0-5.0	NL	VG	VG	P-G	G-VG	U	VG-E	P	F	R5 (beginning seed)
	thiophanate-methyl	Topsin-M [®] multiple generics	10.0-20.0	U	U	U	F	VG	U	G	U	F	21 days
2,6-dinitro-anilines Group 29	fluzinam 40.0%	Omega 500DF [®]	0.75-1.0 pints	NL	NL	NL	NL	NL	NL	NL	U	G	R3 (beginning pod)
	boscalid 70%	Endura 0.7DF [®]	3.5-11.0	U	NL	VG	U	P	NL	NL	U	VG	21 days
SDHI Carboxamides Group 7	azoxystrobin 25.3% flutriafol 18.63%	Topguard EQ 4.29SC [®]	5.0-7.0	U	U	VG	U	G-VG	U	U	P	U	21 days
	azoxystrobin 18.2% difenoconazole 11.4%	Quadris Top 2.72SC [®]	8.0-14.0	U	U	G-VG	P-G	VG	F-G	VG	P	NL	14 days
Mixed Modes of Action	azoxystrobin 19.8% difenoconazole 19.8%	Quadris Top SBX 3.765C [®]	7.0-7.5	U	U	G-VG	P-G	VG	F-G	VG	F-G	U	14 days
	azoxystrobin 7.0% propiconazole 11.7%	Quilt 1.665C [®] multiple generics ⁷	14.0-20.5	U	U	G	F	F	U	VG	U	NL	21 days
	azoxystrobin 13.5% propiconazole 11.7%	Quilt Xcel 2.25E ⁰	10.5-21.0	E	VG	G	F	F	U	VG	P	NL	R6

Fungicide Efficacy for Control of Soybean Foliar Diseases

Fungicide Efficacy for Control of Soybean Foliar Diseases¹ (continued)

Class	FUNGICIDE(S)		Rate/A fl. oz.)	Aerial Web Blight	Anthracnose	Brown Spot ²	Cercospora Leaf Blight ³	Frogeye Leaf Spot ⁴	Diaporthe (Pod and Stem Blight)	Soybean Rust	Target Spot	White Mold ⁵	Harvest Restriction ⁶	
	Active Ingredient (%)	Trade Name												
Mixed Modes of Action (continued)	benzovindiflupyr 2.9% azoxystrobin 10.5% propiconazole 11.9%	Trivapro ⁶	13.7-20.7	E	U	VG	P-G	G	G	VG-E	U	NL	14 days R6	
	cyproconazole 7.17% picoxystrobin 17.94%	Aproach Prima 2.345C ⁸	5.0-6.8	U	U	G	P-G	F-G	U	VG	F-G	NL	14 days	
	fluopyram 17.4% prothioconazole 17.4%	Propulse 3.345C ¹⁰	6.0-10.2	NL	NL	U	NL	U	U	U	U	NL	G	21 days
	flutriafol 26.47% bixafen 15.5%	Lucento 4.175C ⁹	3-5.5	U	U	VG	U	VG	U	U	U	U	U	21 days
	flutriafol 19.3% fluoxastrobin 14.84%	Fortix 5C ⁷ Preemptor 5C ⁷	4.0-6.0	U	U	G-VG	P-G	VG	VG	U	U	P	U	R5
	prothioconazole 16.0% trifloxystrobin 13.7%	Delaro 3.255C ⁸	8.0-11.0	U	U	VG	U	G-VG	U	U	U	NL	NL	21 days
	pydiflumetofen 6.9% difenoconazole 11.5%	Miravis Top 1.675C ⁹	13.7	U	U	VG	P-G	VG	G	G	U	U	U	14 days
	pyraclostrobin 28.58% fluxapyroxad 14.33%	Priaxor 4.175C ⁸	4.0-8.0	E	VG	G-VG	P-G	P-F	U	U	VG	F-G	P	21 days
	pyraclostrobin 28.58% fluxapyroxad 14.33% tetraconazole 20.50%	Priaxor D 4.175C ⁸ 1.95C ⁸	4.0 (each component)	U	U	VG	P-G	G-VG	G	G	VG-E	U	P	21 days R5
	trifloxystrobin 32.3% prothioconazole 10.8%	Stratego YLD 4.185C ¹¹	4.0-4.65	VG	VG	VG	F	F-G	U	U	VG	P	NL	21 days
	tetraconazole 7.48% azoxystrobin 9.35%	Affiance 1.55C ⁸	10.0-14.0	U	VG	VG	F	G-VG	U	U	U	U	U	R5 14 days
	tetraconazole 17.76% fluoxastrobin 17.76%	Zolera FX 3.345C ⁸	4.4-6.8	U	U	U	U	G-VG	U	U	U	U	U	R5 30 days
	thiophanate-methyl 21.3% tetraconazole 4.2%	Acropolis ⁸	20.0-23.0	NL	U	U	U	VG	VG	U	VG-E	U	U	R5

¹ Efficacy ratings: P=poor, F=fair, G=good, VG=very good, E=excellent, NL=not labeled for use against this disease, U=unknown efficacy or insufficient data to rank product.

² QoI fungicides may provide poor control in areas where there are QoI-fungicide-resistant isolates of the brown spot pathogen.

³ Cercospora leaf blight efficacy relies on accurate application timing. Standard R3 application timings may not provide adequate disease control. Fungicide efficacy may improve with later applications; however, efficacy has been inconsistent with some products. Fungicides with a solo or mixed QoI or MBC mode of action may not be effective in areas where QoI or MBC resistance has been detected in the fungal population that causes Cercospora leaf blight.

⁴ In areas where QoI fungicide-resistant isolates of the frogeye leaf spot pathogen are not present, QoI fungicides may be more effective than indicated in this table.

⁵ White mold efficacy is based on R1-R2 application timing. Lower efficacy is obtained with R3 or later application timings, or if disease symptoms are already present at the time of application. Harvest restrictions are listed for soybean harvested for grain. Restrictions may vary for other types of soybean (edamame, etc.) or soybean for other uses (such as forage or fodder).

⁶ Multiple generic products containing this mode of action may also be labeled in some states.

⁷ Rating is based on two applications of Aproach⁸ at 9 fl. oz./A at R1 and R3.

⁸ Proline⁸ has a supplemental label (2ee) for use on white mold in New York.

⁹ Propulse⁸ is not labeled for use on soybean in all states as of January 2019.

¹¹ Stratego YLD⁸ has a supplemental label (2ee) for white mold on soybean only in Illinois, Indiana, Iowa, Michigan, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Find Out More

The Crop Protection Network (CPN) is a multi-state and international collaboration of university and provincial extension specialists, and public and private professionals who provide unbiased, research-based information to farmers and agricultural personnel. Our goal is to communicate relevant information that will help professionals identify and manage field crop diseases.

Find more crop disease resources at CropProtectionNetwork.org.



Technical Editor: Kevin Leigh Smith, Purdue Agricultural Sciences Education and Communication.

Design: Purdue Agricultural Communication.

The information in this publication is only a guide, and the authors assume no liability for practices implemented based on this information. Reference to products in this publication is not intended to be an endorsement to the exclusion of others that may be similar. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer.

Feb 2019

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

©2019 by the Crop Protection Network. All rights reserved.