

## WHEAT – SEED TREATMENTS

Terry Spurlock

Disease	Fungicide	Active Ingredient	FRAC Code*	Rate/cwt Seed	Comments
Loose Smut, Stagonospora Blotch (glume blotch), and other seedling diseases	Charter 0.21 FS	triticonazole	3	3.1 fl oz	On-farm or commercial seed treaters. See label for details.
	Vibrance 4.3 FS	sedaxane	7	1.16 – 2.32 g ai	Also labeled for oats and triticale.
	Maxim 4 FS 4 FC	fludioxonil	12	1.16 – 2.32 g ai	See label.
	Mertect 340 F 4.1 SC	thiabendazole	1	0.17 oz	See label.
	Raxil MD 11.6 S	tebuconazole + metalaxyl + prothioconazole	3 + 4 + 3	5 – 7.5 fl oz	On-farm or commercial seed treaters. Dilute 1:1 with water before application to seed. Already contains dye. Do not graze for 38 days after seeding. Also controls loose smut of oats.
	Dividend Extreme 0.96 FC	difenoconazole + mefenoxam	3 + 4	2 - 4 fl oz	Also labeled for triticale.
	Charter F2 0.19 FS	triticonazole + metalaxyl	3 + 4	5.4 fl oz	See label.
	Rancona Crest 1.37 FS	ipconazole + metalaxyl + imidacloprid	3 + 4	5 fl oz	Do not graze or feed livestock on treated areas for 45 days after planting.
	Rancona V RTU FS 1.26 FS	ipconazole + carboxin + metalaxyl	3 + 7 + 4	4.6 fl oz	Do not graze or feed livestock on treated areas for 42 days after planting.
	Vibrance Extreme 0.81 FC	difenoconazole + sedaxane + mefenoxam	3 + 7 + 4	2.8 - 5.6 fl oz	Also labeled for oats and triticale.
	CruiserMaxx Vibrance Cereals 0.72 FS	difenoconazole + sedaxane + mefenoxam + thiamethoxam	3 + 7 + 4 + N/A	5 oz	Multiple seed and seedling diseases (see label). Also labeled for oats and triticale. Contains Cruiser 5 FS at 0.25 oz/cwt. Add additional 0.75 oz/cwt Cruiser 5 FS for aphid control and BYDV suppression.
	EverGol Energy 1.47 FS	prothioconazole + penflufen + metalaxyl	3 + 7 + 4	1 oz	Commercial seed treatment only.
Gaucho XT 1.29 F	tebuconazole + metalaxyl + imidacloprid	3 + 4 + N/A	3.4 fl oz	See label.	

\***FRAC Code** – Fungicides with the same FRAC Code have the same mode of action. See <http://www.frac.info/> for an explanation of the FRAC Codes. Rotation of fungicides with different FRAC Codes could minimize the development of fungicide resistant strains.

**NOTE:** Wheat seed producers in Arkansas should always plant seed treated with one of the listed products to prevent a buildup of loose smut and Stagonospora glume blotch in the seed supply. Growers who plant saved seed should have it treated with one of the above, especially if the seed came from a field with these diseases or if either of the diseases was at epidemic levels in nearby fields during the spring.

## WHEAT – FOLIAR FUNGICIDES

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Disease	Fungicide	Active Ingredient	FRAC Code*	Rate/cwt Seed	Comments
Leaf Rust Stagonospora (Glume) Blotch <sup>1</sup> Septoria Leaf Blotch Powdery Mildew Stripe Rust <sup>2</sup>	Alto100 SL	cyproconazole	3	3 - 5.5 fl oz	See label.
	Caramba 90 EC	metconazole	3	10 - 14 fl oz	No more than 2 applications/season. See label.
	Bumper 41.8 EC, Propimax 3.6 EC, Tilt 1.04 SC	propiconazole	3	4 fl oz	Do not apply after Feekes GS 10.5 (full heading). Do not apply more than 8 fl oz per acre per crop per season.
	tebuconazole (various trade names 3.6 F)	tebuconazole	3	4 fl oz	Maximum of 4 fl oz/acre per year.
	Quadris 2.08 F**	azoxystrobin	11	6 fl oz	Do not apply after Feekes GS 10.54 (flowering over). Apply prior to disease development.
	Aftershock 480 SC	fluxastrobin	11	2.5 - 4 fl oz	10 - 14 day intervals. See label.
	Evito 480 SC	fluxastrobin	11	2.5 - 4 fl oz	10 - 14 day intervals. See label.
	Headline 2.09 SC*	pyraclostrobin	11	6 - 9 fl oz	Do not apply after Feekes GS 10.5. See label. Headline is also labeled for control of black point of wheat.
	Quilt Xcel 2.2 SE	azoxystrobin + propiconazole	11 + 3	10.5 - 14 fl oz	Do not apply after Feekes GS 10.54. Tank mixes with certain herbicides and fertilizers may result in crop injury – see label for all restrictions.
	Preemptor 3.22 SC	fluxastrobin + flutriafol	11 + 3	4 - 6 fl oz	Do not apply after Feekes GS 10.5.
	Approach Prima 2.34 SC	picoxystrobin + cyproconazole	11 + 3	3.4 - 6.8 fl oz	Do not apply more than 6.8 fl oz per acre per crop. Minimum time to harvest is 45 days for grain.
	Twinline 3.72 SE	pyraclostrobin + metconazole	11 + 3	7 - 9 fl oz	Use high rate for stripe rust. Do not apply after Feekes GS 10.5. See label.
	Fusarium head blight (Scab) (suppression only)	Stratego 2.08 SC	trifloxystrobin + propiconazole	11 + 3	10 fl oz
Stratego YLD 4.18 SC		trifloxystrobin + prothioconazole	11 + 3	4 fl oz	See label for restrictions.
Absolute 500 SC		trifloxystrobin + tebuconazole	11 + 3	5 fl oz	Do not apply more than 5 fl oz per season. Do not use adjuvants.
Topguard EQ 4.29 SC		azoxystrobin + flutriafol	11 + 3	4 - 7 fl oz	Do not apply after Feekes 10.5.4.
Priaxor 4.17 SC		pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	Do not apply after Feekes GS 10.5. Apply no more than 16 oz/acre per year.

(continued)

**WHEAT – FOLIAR FUNGICIDES – continued**

Disease	Fungicide	Active Ingredient	FRAC Code*	Rate/cwt Seed	Comments
Leaf Rust ( <i>cont.</i> ) ( <i>Stagonospora</i> (Glume) Blotch <sup>1</sup> Septoria Leaf Blotch Powdery Mildew Stripe Rust <sup>2</sup> )	Prosaro 421 SC	prothioconazole + tebuconazole	3 + 3	6.5 - 8.2 fl oz	Apply from early flowering to 3 days after flowering for optimal head blight suppression. 30 day PHI.
	Trivapro 1.75 EC	benzovindiflupyr + azoxystrobin + propiconazole	7 + 3 + 11	9.4 - 13.7 fl oz	Not after Feekes GS 10.5.4. Apply no more than 27.4 oz/acre per year.
	Miravis Ace 2.3 SE	pydiflumetofen + propiconazole	7 + 3	13.7 fl oz	
	Lucento 4.17 SC	bixafen + flutriafol	7 + 3	3 - 5.5 fl oz	
Fusarium Head Blight (Scab) (suppression only) and control of other diseases listed above	Caramba 90 EC	metconazole	3	13.5 - 17 fl oz	Apply at early flowering for optimal head blight suppression. See label.
	tebuconazole (various trade names 3.6 F)	tebuconazole	3	4 fl oz	Maximum of 4 fl oz/acre per year. Least effective option for Scab.
	Prosaro 421 SC	prothioconazole + tebuconazole	3 + 3	6.5 - 8.2 fl oz	Apply from early flowering to 3 days after flowering for optimal head blight suppression. 30 day PHI.
	Miravis Ace 2.3 SE	pydiflumetofen + propiconazole	7 + 3	13.7 fl oz	Apply between Feekes 10.3 and Feekes 10.5.4 for control of late season rusts. PHI for forage and hay is 7 days. Do not apply after Feekes 10.5.4.

\*FRAC Code – Fungicides with the same FRAC Code have the same mode of action. See <http://www.frac.info/> for an explanation of the FRAC Codes. Rotation of fungicides with different FRAC Codes could minimize the development of fungicide resistant strains.

\*\*Only effective as a preventative treatment for stripe rust.

<sup>1</sup>Stagonospora (glume) blotch is more effectively controlled by seed treatment fungicides because it is primarily seedborne under Arkansas conditions and foliar symptoms are difficult to scout for in the spring. See Wheat Seed Treatment Table for details.

<sup>2</sup>All fields with active hot spots of stripe rust should be sprayed immediately if found prior to Feekes GS 10.5.

**WHEAT DISEASE THRESHOLDS**

Terry Spurlock

The following threshold system is a general guide for whether or not there is adequate disease pressure to justify fungicide use. The relative susceptibility of the variety, favorable weather conditions during the spring and location in Arkansas should also be considered. For current row crop information, sign up for the Arkansas Row Crop Updates at [www.arkansas-crops.com/](http://www.arkansas-crops.com/) or visit your local Cooperative Extension Service office.

Feekes Growth Stage	Disease	Indicator Leaf	Treatment Threshold
GS 8	Leaf Rust	Flag-3 and above	1 pustule/leaf
	Septoria tritici leaf blotch	Flag-3 and above	25% of leaves infected
	Powdery Mildew	Flag-2 and above	5 pustules/leaf
	Stagonospora blotch	Flag-2 and above	10% of leaves infected
	Tan Spot	Flag-2 and above	25% of leaves infected
GS 9 - GS 10.5	Stripe Rust	Any leaf	1 pustule/20 leaves
	Leaf Rust	Flag-2 and above	1 pustule/leaf
	Septoria tritici leaf blotch	Flag-2 and above	25% of leaves infected
	Powdery Mildew	Flag-1 and above	5 pustules/leaf
	Stagonospora blotch	Flag-2 and above	10% of leaves infected
GS 9 - GS 10.5	Tan Spot	Flag-2 and above	25% of leaves infected
	Stripe Rust	Any leaf	1 pustule/20 leaves

## Management of Small Grain Diseases – Fungicide Efficacy for Control of Wheat Disease (*Revised May 2020*)

The North Central Regional Committee on Management of Small Grain Diseases (NCERA-184) has developed the following information on fungicide efficacy for control of certain foliar diseases of wheat for use by the grain production industry in the U.S. Efficacy ratings for each fungicide listed in the table were determined by field testing the materials over multiple years and locations by the members of the committee. Efficacy is based on proper application timing to achieve optimum effectiveness of the fungicide as determined by labeled instructions and overall level of disease in the field at the time of application. Differences in efficacy among fungicide products were determined by direct comparisons among products in field tests and are based on a single application of the labeled rate as listed in the table. The table includes the most widely marketed products and is not intended to be a list of all labeled products.

### Efficacy of fungicides for wheat disease control based on appropriate application timing

Fungicide(s)				Powdery Mildew	Stagonospora Leaf/Glume Blotch	Septoria Leaf Blotch	Tan Spot	Stripe Rust	Leaf Rust	Stem Rust	Head Scab	Harvest Restriction
Class	Active Ingredient	Product	Rate/A (fl oz)									
Strobilurin	Picoxystrobin 22.5%	Aproach 2.08 SC	6 - 12	G <sup>1</sup>	VG	VG <sup>2</sup>	VG	E <sup>3</sup>	VG	VG	NL	Feekes 10.5
	Pyraclostrobin 23.6%	Headline 2.09 SC	6 - 9	G	VG <sup>2</sup>	VG <sup>2</sup>	E	E <sup>3</sup>	E	G	NL	Feekes 10.5
Triazole	Metconazole 8.6%	Caramba 0.75 SL	10 - 17	VG	VG	---	VG	E	E	E	G	30 days
	Tebuconazole 38.7%	Folicur 3.6 F <sup>4</sup>	4	NL	NL	NL	NL	E	E	E	F	30 days
	Prothioconazole 41%	Proline 480 SC	5 - 5.7	---	VG	VG	VG	VG	VG	VG	G	30 days
	Prothioconazole 19% Tebuconazole 19%	Prosaro 421 SC	6.5 - 8.2	G	VG	VG	VG	E	E	E	G	30 days
	Propiconazole 41.8%	Tilt 3.6 EC <sup>4</sup>	4	VG	VG	VG	VG	VG	VG	VG	P	Feekes 10.5.4

Management of Small Grain Diseases – Fungicide Efficacy for Control of Wheat Disease (Revised May 2020) – continued

Class	Fungicide(s)			Powdery Mildew	Stagonospora Leaf/Glume Blotch	Septoria Leaf Blotch	Tan Spot	Stripe Rust	Leaf Rust	Stem Rust	Head Scab	Harvest Restriction
	Active Ingredient	Product	Rate/A (fl oz)									
Mixed Modes of Action <sup>5</sup>	Tebuconazole 22.6% Trifloxystrobin 22.6%	Absolute Maxx 5.36 SC	5	G	VG	VG	VG	VG	E	VG	NL	35 days
	Cyproconazole 7.17% Picoxystrobin 17.94%	Aproach Prima 2.34 SC	3.4 - 6.8	VG	VG	VG	VG	E	VG	---	NR	45 days
	Pydiflumetofen 13.7% Propiconazole 11.4%	Miravis Ace 2.3 SE	13.7	VG	VG	VG	VG	VG	VG	VG	G <sup>7</sup>	Feekes 10.5.4
	Fluapyroxad 2.8% Pyraclostrobin 18.7% Propiconazole 11.7%	Nexicor 2.96 EC	7 - 13	VG	VG	E	E	E	E	VG	NL	Feekes 10.5
	Fluoxastrobin 14.8% Flutriafol 19.3%	Preemptor 3.22 SC	4 - 6	---	---	VG	VG	E	VG	---	NL	Feekes 10.5 and 40 days
	Fluxapyroxad 14.3% Pyraclostrobin 28.6%	Priaxor 4.17 SC	4 - 8	G	VG	VG	E	VG	VG	G	NL	Feekes 10.5
	Propiconazole 11.7% Azoxystrobin 13.5%	Quilt Xcel 2.2 SE <sup>4</sup>	10.5 - 14	VG	VG	VG	VG	E	E	VG	NL	Feekes 10.5.4
	Prothioconazole 10.8% Trifloxystrobin 32.3%	Stratego YLD 4.18 SC	4	G	VG	VG	VG	VG	VG	VG	NL	Feekes 10.5 35 days
	Benzovindiflupyr 2.9% Propiconazole 11.9% Azoxystrobin 10.5%	Trivapro 2.21 SE	9.4 - 13.7	VG	VG	VG	VG	E	E	VG	NL	Feekes 10.5.4 14 days
	Metconazole 7.4% Pyraclostrobin 12%	TwinLine 1.75 EC	7 - 9	G	VG	VG	E	E	E	VG	NL	Feekes 10.5
Flutriafol 18.63% Azoxystrobin 25.30%	Topguard EQ 4.29 SC	4 - 7	VG	NL	VG	VG	E	E	VG	NL	Feekes 10.5.4 30 days	

<sup>1</sup> Efficacy categories: NL = Not Labeled; NR = Not Recommended; P = Poor; F = Fair; G = Good; VG = Very Good; E = Excellent; --- = Insufficient data to make statement about efficacy of this product.

<sup>2</sup> Product efficacy may be reduced in areas with fungal populations that are resistant to strobilurin fungicides.

<sup>3</sup> Efficacy may be significantly reduced if solo strobilurin products are applied after stripe rust infection has occurred.

<sup>4</sup> Multiple generic products containing the same active ingredients also may be labeled in some states. Products including tebuconazole include: Embrace, Monsoon, Muscle 3.6 F, Onset, Orius 3.6 F, Tebucon 3.6 F, Tebustar 3.6 F, Tebuzol 3.6 F, Tegrol, and Toledo. Products containing propiconazole include: Bumper 41.8 EC, Fitness, Propiconazole E-AG, and PropiMax 3.6 EC.

Products containing propiconazole + azoxystrobin include: Aframe Plus, Avaris 2XS.

<sup>5</sup> Products with mixed modes of action generally combine triazole and strobilurin active ingredients. Nexicor, Priaxor and Trivapro include carboxamide active ingredients.

*This information is provided only as a guide. It is the responsibility of the pesticide applicator by law to read and follow all current label directions. No endorsement is intended for products listed nor is criticism meant for products not listed. Members or participants in the NCERA-184 committee assume no liability resulting from the use of these products.*