### FMC 2017 FUNGICIDE REFERENCE GUIDE

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>FRAC Code</th>
<th>Fungicide Class</th>
<th>Mode of Action</th>
<th>Fungal Activity</th>
<th>Bacterial Activity</th>
<th>Resistance Potential</th>
<th>Crops Labeled and Pre-Harvest Intervals</th>
<th>Diseases Controlled and Suppressed where noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLAD</td>
<td>BM 01</td>
<td>Multi-Site</td>
<td>Cell wall &amp; membrane fissure inducer</td>
<td>Protectant (preventative) with limited curative activity</td>
<td>Yes – 2ee Grape Sour Rot</td>
<td>Very Low</td>
<td>Strawberries, Tomatoes, Almonds, Grapes (1)</td>
<td>Botrytis, Powdery Mildew, See Section 2ee suppression Sour Rot Grapes</td>
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<tr>
<td>mancozeb</td>
<td>M3</td>
<td>Multi-Site</td>
<td>Attacks multiple pathways</td>
<td>Protectant, long residual</td>
<td>Yes</td>
<td>Very Low</td>
<td>Several crops, very good on diseases in potatoes, tomatoes, apples, and sugar beets (PHI variable – see label)</td>
<td>Anthracnose, Black Rot, Bunch Rot, Downy Mildew, Fruit Rots, Phytophthora, Ruts Scabs, Stem Fungi, Northern Corn Leaf Blight, Grey Leaf Spot, Rusts, Brown Rot, Frog Eye Leaf Spot, Alternaria Leaf Spot, Stripe Rust, Powdery Mildew, Tan Spot</td>
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<tr>
<td>flutriafol + fluoxastrobin</td>
<td>3 &amp; 11</td>
<td>Multi-Site</td>
<td>Sterol biosynthesis inhibitor in membranes &amp; Cytochrome bc1 at Qo site</td>
<td>Protectant, curative, transaminar with local systemic activity</td>
<td>No</td>
<td>Moderate</td>
<td>Corn, Soybeans, Wheat (30)</td>
<td>Anthracnose, Northern Corn Leaf Blight, Grey Leaf Spot, Rust, Brown Rot, Frog Eye Leaf Spot, Alternaria Leaf Spot, Stripe Rust, Powdery Mildew, Tan Spot</td>
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<tr>
<td>iprodione</td>
<td>2</td>
<td>Multi-Site</td>
<td>Histidine-Kinase in osmotic signal transduction disruption</td>
<td>Protectant, limited curative, localized penetrant</td>
<td>No</td>
<td>Moderate to High</td>
<td>Stone Fruits, Ginseng (85), Berries (6), Grapes (7), Strawberries, Beans, Broccoli (0), Carrots (0), Dry Bulb Onions (7), Garlic, Lettuce (14), Potatoes (14)</td>
<td>Botrytis Fruit Rot, Grey Mold, White Mold, Alternaria Leaf Spot, Early Blight, Bottom Rot, Lettuce Drop, Brown Rot, Blossom Blight, Bunch Rot, Purple Blotch, Phomopsis, Stemphylium Blight</td>
</tr>
<tr>
<td>flutriafol</td>
<td>3</td>
<td>Multi-Site</td>
<td>Sterol biosynthesis inhibitor in membranes</td>
<td>Protectant highly systemic, curative</td>
<td>No</td>
<td>Moderate</td>
<td>Brassicas, Leafy Vegetables (7), Celery (7), Lettuce (14), Leafy Vegetables (7), Pome (14), Stone (14), Cucurbits (0), Strawberries (0)</td>
<td>Numerous; Apples, Pears, Grapes, Figs, Cucurbits (PHI variable see label)</td>
</tr>
<tr>
<td>kresoxynil - methyl</td>
<td>11</td>
<td>Multi-Site</td>
<td>Cytochrome bc1 at Qo site</td>
<td>Protectant, tranaminar with local systemic &amp; vapor activity</td>
<td>No</td>
<td>High</td>
<td></td>
<td></td>
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</tbody>
</table>

**Formulation, Package Size, Rate Range and Application:**

- **Formulation:** 2.1 lbs ai/gal, 4 X 1 gal./case, 20.5 – 36.6 fl. oz. See label
- **Package Size:** NIS or COC
- **Rate Range:** 75% DF, 30 lbs. bag, 8X 5 lbs./case, 0.75 – 6.4 lbs.
- **Application:** Water volume for optimum coverage

**Crops Labeled and Pre-Harvest Intervals – PHI (days to harvest):**

- **Strawberries, Tomatoes, Almonds, Grapes (1):** Several crops, very good on diseases in potatoes, tomatoes, apples, and sugar beets (PHI variable – see label)
- **Corn, Soybeans, Wheat (30):** Corn, Soybeans, Wheat (30)

**Diseases Controlled and Suppressed where noted:**

- **Botrytis, Powdery Mildew, See Section 2ee suppression Sour Rot Grapes:** Botrytis Fruit Rot, Grey Mold, White Mold, Alternaria Leaf Spot, Early Blight, Bottom Rot, Lettuce Drop, Brown Rot, Blossom Blight, Bunch Rot, Purple Blotch, Phomopsis, Stemphylium Blight
- **Anthracnose, Northern Corn Leaf Blight, Grey Leaf Spot, Rust, Brown Rot, Frog Eye Leaf Spot, Alternaria Leaf Spot, Stripe Rust, Powdery Mildew, Tan Spot:** Anthracnose, Northern Corn Leaf Blight, Grey Leaf Spot, Rust, Brown Rot, Frog Eye Leaf Spot, Alternaria Leaf Spot, Stripe Rust, Powdery Mildew, Tan Spot
- **Anthracnose, Alternaria Leaf and Fruit Spot, Cercospora Leaf Spot, Powdery Mildew, Black Rot, Powdery Mildew, Brown Rot, Blossom Blight, Septoria Leaf Spot, Charcoal Rot, Early Night:** Anthracnose, Alternaria Leaf and Fruit Spot, Cercospora Leaf Spot, Powdery Mildew, Black Rot, Powdery Mildew, Brown Rot, Blossom Blight, Septoria Leaf Spot, Charcoal Rot, Early Night
- **Scab, Powdery Mildew, Cedar Apple Rust, White Rot, Black Rot, Brocks Fruit Spot, Soty Blotch, Fly Speck, Black Rot, Phomopsis, Downy Mildew:** Scab, Powdery Mildew, Cedar Apple Rust, White Rot, Black Rot, Brocks Fruit Spot, Soty Blotch, Fly Speck, Black Rot, Phomopsis, Downy Mildew

**2017 FMC Fungicide Reference Guide**

**2016 University Wheat, Corn and Soybean Fungicide Disease Control Studies**

**Authored by Dr. Joseph P. Reed FMC Tech Service Mgr – Midwest Region Eastern Corn Belt (217) 649-3249**

- **Stu Throop FMC Western MI RMM (443) 271-4191**
- **Lisa Stiles FMC Southeast MI. 989-780-2032**
- **Ryan McDaniel FMC Ohio RMM 937-605-7204**

March 8, 2017
Preemptor SC fungicide is versatile, flexible and provides outstanding disease control in wheat, corn and soybeans to help maximize yields and profits.

In 2016, wheat stem and leaf rust were prevalent in Ohio and Michigan, and stripe rust was observed in Michigan and northern Ohio. Preemptor SC fungicide applied at flag leaf provided excellent rust control resulting in wheat yield increases of approximately 5.1 to 19.4 bushels per acre over the untreated check. Preemptor SC fungicide applied at V-8 in a tank mix with Roundup PowerMAX herbicide shows the practicality of tank mixing a herbicide and fungicide to make more efficient use of sprayers. Preemptor SC fungicide provided excellent control of Northern Corn Leaf Blight as reflected in the yield increase of approximately 28.3 bushels per acre and very profitable too.

At the Ohio State OARDC in Wooster, Ohio, an application of Preemptor SC fungicide at R1 soybean growth stage increased soybean yields by 4.6 bushels per acre. The return on investment ratio of an application of Preemptor SC fungicide was greater than 3:1 and under heavier frogeye leaf spot pressure might even be higher.

2016 selected treatments from frogeye leaf spot trial observing Preemptor SC fungicide 6 oz. applied at R1 soybean growth stage impacting soybean yields (Bu/A) at Ohio State - OARDC, Wooster, OH.
(Data Courtesy Dr. Anne Dorrance - Ohio State – OARDC, Wooster, OH and S. Charleston, OH)

Always read and follow label directions. NOTE REGARDING RESTRICTED USE PESTICIDES: Anthem ATZ herbicide, Athena insecticide, Brigade 2EC Insecticide/Miticide, Brigade WSB Insecticide/Miticide, Brigadier Insecticide Capture 3RIVE 3D insecticide, Capture LFR Insecticide, Declare insecticide, Hero Insecticide, Mustang Insecticide, Mustang Maxx Insecticide, Pounce 25WP Insecticide, Stallion Brand Insecticide, Temity LFR Insecticide/Fungicide, Triple Crown Insecticide, Ethos XB Insecticide/Fungicide and Gladiator Insecticide/Miticide are Restricted Use Pesticides. NOTE FOR CALIFORNIA: Accurate Extra herbicide, Aim herbicide, Aim EC herbicide, Aim EW herbicide, Anthem herbicide, Anthem ATZ herbicide, Anthem Flex herbicide, Anthem MAXX herbicide, Authority Assist herbicide, Authority Elite herbicide, Authority First DF herbicide, Authority MAXX herbicide, Authority MTZ DF herbicide, Authority XL herbicide, Cadet herbicide, Chisum Herbicide, Command 3ME microencapsulated herbicide, Crusher Herbicide, Edition Broadspec herbicide, Edition Tankmix Herbicide, Marvel herbicide, Nimble Herbicide, Nuance Herbicide, Preemptor SC fungicide, Report Extra Herbicide, Solstice herbicide, Spartan 4F herbicide, Spartan Charge herbicide, Spartan Elite herbicide, Temity LFR Insecticide/Fungicide, Topguard EQ fungicide, Zeus Prime XC herbicide, Zeus XC herbicide, Capture 3RIVE 3D insecticide, Ethos XB Insecticide/Fungicide, Hero Insecticide, Mustang Maxx Insecticide, Display cotton harvest aid, Zorin Miticide and VGR Soil Amendment are not registered for sale or use in California. VGR Soil Amendment is not a pesticide. Beleaf and Carbine are trademarks of Ishihara Sangyo Kaisha, Ltd. Cercobin is a trademark of Nippon Soda Co., LTD. Sovran is a registered trademark of BASF. FMC, 3RIVE 3D, Accurate, Aim, Anthem, Athena, Authority, Brigade, Brigadier, Cadet, Capture, Chisum, Command, Crusher, Declare, Display, Edition, Ethos, Preemptor, Fructose, Fyfanon, Gladiator, Hero, Koverall, LFR, Marvel, Mustang, Nimble, Obliv, Pounce, Report, Rhyme, Rovral, Shark, Solida, Solstice, Spartan, Stallion, Temity, Topguard, Topguard Terra, VGR and Zeus are trademarks and HatchTrak and Investing in farming’s future are service marks of FMC Corporation or an affiliate. ©2016 FMC Corporation. All rights reserved. 11/16

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