

HatchTrakSM



April 19, 2017

Wheat Disease & Insect Management With FMC Wheat **PREEMPTORTM SC** Insecticide & Fungicide Product Line



- ❑ *PreemptorTM SC fungicide 4-6 fl oz./A with or without Mustang[®] Maxx insecticide 4 fl oz./A*
- ❑ *Preemptor SC fungicide, Mustang[®] Maxx insecticide proven performance*

The 2016 season started off cool and dry, favoring excellent wheat growth and conditions ideal for disease and insects. Cereal leaf beetles were seen more frequently at numbers requiring treatment. In 2016, it paid to treat wheat for insects, such as cereal leaf beetles in wheat with Mustang Maxx insecticide. Dry conditions during pollination and grain fill favored common leaf rust in wheat throughout Ohio. Further to the west prevailing winds delivered stripe rust, not commonly seen in Indiana, Michigan or Ohio. Protecting the flag leaf from common leaf rust and stripe rust was fundamental to maximizing wheat yields in 2016. This same principle will hold true in 2017 using Preemptor SC fungicide to protect the wheat flag leaf, a high probability of common and stripe rust infection exists in 2017.

Below, a 2016 Ohio State study showed a 4 bu/A yield increase over the untreated check when Preemptor SC fungicide was applied at flag leaf stage. However, the tankmix of Preemptor SC fungicide + Mustang Maxx insecticide applied at flag leaf increased wheat yields by 12 bu/A. The economics of this integrated approach is highlighted by a Michigan State study, a \$59-60/A increase shows a return on investment ratio of 3:1, not bad from a single flag leaf application of Preemptor SC fungicide + Mustang Maxx insecticide.

Inside This Issue

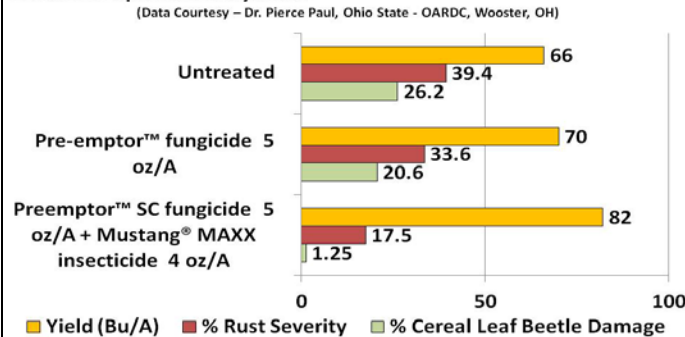
❑ Wheat Disease & Insect Management with FMC Wheat Product Line

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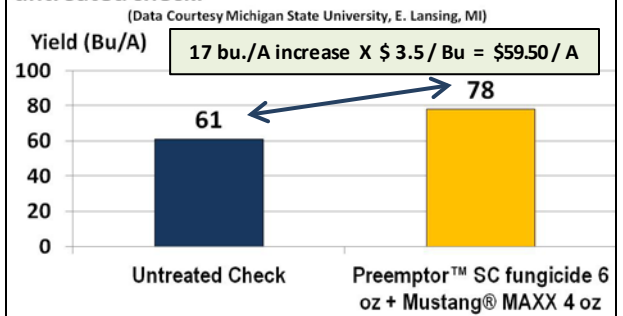
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2016 Comparing PreemptorTM SC fungicide with and without Mustang[®] MAXX insecticide applied at flag leaf (Feeekes 9) upon Wheat Leaf Rust severity and Cereal Leaf Beetle damage and influence upon wheat yields.
(Data Courtesy - Dr. Pierce Paul, Ohio State - OARDC, Wooster, OH)

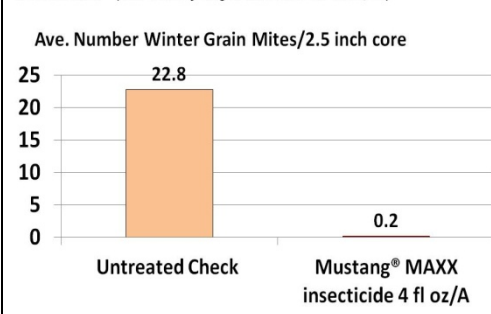


2016 Wheat yield comparison showing benefit of integrated PreemptorTM SC fungicide + Mustang[®] MAXX insecticide flag leaf application versus untreated check.
(Data Courtesy Michigan State University, E. Lansing, MI)



The aphid, mite and virus disease connection – Wheat Plant Health
In the Western U.S. several mite species are known to reduce wheat vigor, it is unclear whether a similar mite species exists in Ohio, Michigan or Indiana. It is well known that various aphid species are known to vector wheat virus diseases. This does not explain the yield increases of 5 or more bushels per acre seen after an insecticide application, Mustang Maxx insecticide is applied at flag leaf with no visible, detectable insect pest population. Anecdotal observations suggest mites may infest wheat at pre-boot through heading. Several grass species are reservoirs for these diseases as well as hosts for vectoring insect pests such as aphids and perhaps mites. A study out of Oregon State Univ. shows Mustang Maxx insecticide at 4 fl. oz./A being effective at controlling winter grain mite in Timothy-grass, a known mite/virus host.

2007 – 08 Selected Treatments from Study observing Winter Grain Mite Control in Timothy Grass by Mustang[®] MAXX insecticide. (Data Courtesy Oregon State Univ. Ext. Culver, OR)



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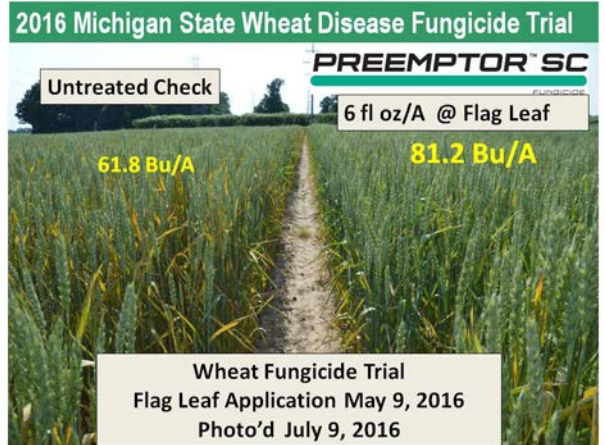
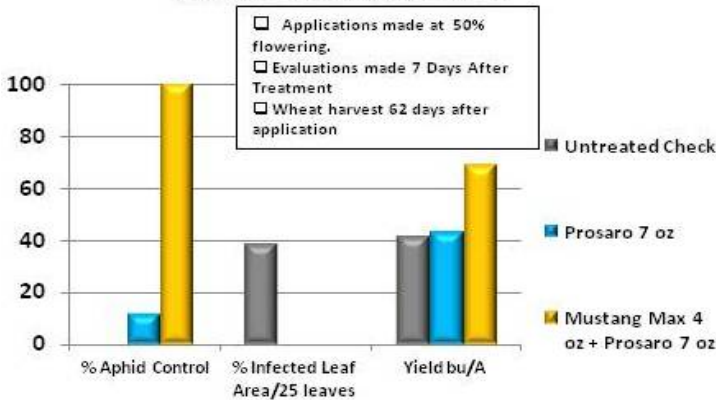
Wheat Disease & Insect Management With FMC Wheat **PREEMPTORTM SC**

Insecticide & Fungicide Product Line



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2012 Wheat Insecticide, Fungicide, Plant Health Study –
Minerva, Ohio Commercial Replicated Trials

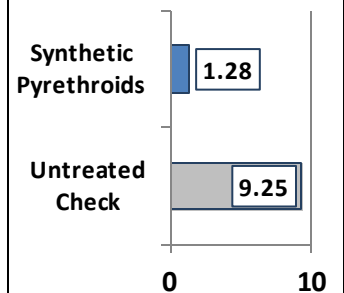


Wheat Plant Health Starts at Pre-Boot up to Flowering

Wheat fungicides have been developed to address flag leaf protection or wheat head scab suppression. Priority should be on what disease shows up first and whether that application can be made in a timely fashion. Known performance by Preemptor SC fungicide to protect the flag leaf was demonstrated in a 2016 Michigan State trial. Intensive wheat management requires a flag leaf application and a wheat scab application, but application timing is critical. A 2012 trial showed when a scab application is not effective, tankmixing an insecticide such as Mustang Maxx insecticide contributes to a yield increase often higher than 5 bu/A. The plant health effect by inclusion of Mustang Maxx insecticide might be due to controlling an unnoticed insect or mite pest. A 1998 Kansas State study showed pyrethroid insecticides provided significant winter grain mite control in wheat. The insecticides listed are not registered for use in wheat but Mustang Maxx insecticide is registered for use in wheat and is effective for controlling insect pests in wheat. Perhaps the addition of Mustang Maxx insecticide is affecting an unnoticed insect or mite species in wheat and contributing to increased wheat yields.

1998 Winter Grain Mite Control by Insecticides (Kansas State University)

Ave. # Mites/Ft Row



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, Temitry 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, Temitry 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, Zoro 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, Fracture, Fyfanon, Gladiator, Hero, Koverall, LFR, Marvel, Mustang, Nimble, Obey, Pounce, Report, Rhyme, Rovral, Shark, Solida, Solstice, Spartan, Stallion, Temitry, 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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