

Management of Soybean Seedling Diseases

Fungicide Efficacy for Control of Soybean Seedling Diseases – January 2017

The members of the Identification and Biology of Seedling Pathogens of Soybean project funded by the North Central Soybean Research Program and plant pathologists across the United States have developed the following ratings for how well fungicide seed treatments control seedling diseases of soybeans in the United States. Efficacy ratings for each fungicide active ingredient listed in the table were determined by field-testing the materials over multiple years and locations by the members of this group, and include ratings summarized from national fungicide trials published in Plant Disease Management Reports (and formerly Fungicide and Nematicide Tests) by the American Phytopathological Society at <http://www.apsnet.org>. Each rating is based on the fungicide's level of disease control, and does not necessarily reflect efficacy of fungicide active ingredient combinations and/or yield increases obtained from applying the active ingredient.

The list includes the most widely marketed products available. It is not intended to be a list of all labeled active ingredients and products. Additional active ingredients may be available, but have not been evaluated in a manner allowing a rating. Products listed are the most common products available as of the release date of the table; all available products may not be listed. Additional active ingredients may be included in some products for insect and nematode control, however; only active ingredients for pathogen control are listed and rated.

Many active ingredients and their products have specific use restrictions. Read and follow all use restrictions before applying any fungicide to seed, or before handling any fungicide-treated seed. This information is provided only as a guide. It is the applicator's and users 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 members of the group, or by the North Central Soybean Research Program. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer. Efficacy categories: E = Excellent; VG = Very Good; G = Good; F = Fair; P = Poor; NR = Not Recommended; NS = Not Specified on product label; U = Unknown efficacy or insufficient data to rank product. Please note: Efficacy ratings may be dependent on the rate of the fungicide product on seed. Contact your local Extension plant pathologist for recommended fungicide product rate information for your area.

General Comments:

*A major finding in Ohio and several other states is first the number of different species of *Pythium* and *Fusarium* that are impacting seed and seedling health in soybean. This is why there is a range of Poor to Good for some of the fungicide active ingredients listed in the Tables below. This is why you see several fungicides combined together for seed treatments to provide protection to a broader spectrum of pathogens.*

Products may vary in efficacy against different *Fusarium* and *Pythium* species.

² Areas with mefenoxam or metalaxyl insensitive populations may see less efficacy with these products.

³ Listed seed treatments do not have efficacy against *Fusarium virguliforme*, causal agent of sudden death syndrome.

⁴ For SDS, the higher rate of fluopyram is required, while the low rate has some effect on SCN. Note that this is not a total control, but inhibits early development of SCN populations..

Fungicide active ingredient	<i>Pythium</i> sp. ¹	Phytophthora root rot	<i>Rhizoctonia</i> sp.	<i>Fusarium</i> sp. ^{1,3}	Sudden death syndrome (SDS) (<i>Fusarium virguliforme</i>)	<i>Phomopsis</i> sp.	SCN
Azoxystrobin	P-G	NS	VG	F-G	NR	P	NR
Carboxin	U	U	G	U	NR	U	NR
Ethaboxam	E-P	E	U	U	U	U	NR
Fludioxonil	NR	NR	G	F-VG	NR	G	NR
Fluopyram	NR	NR	NR	NR	VG ⁴	NR	G-P ⁴
Fluxapyroxad	U	U	E	G	NR	G	NR
Ipconazole	P	NR	F-G	F-E	NR	G	NR
Mefenoxam	E-P ²	E	NR	NR	NR	NR	NR
Metalaxyl	E-P ²	E	NR	NR	NR	NR	NR
Oxathiapiprolin	P	E	NR	NR	NR	NR	NR
PCNB	NR	NR	G	U	NR	G	NR
Penflufen	NR	NR	G	G	NR	G	NR
Prothioconazole	NR	NR	G	G	NR	G	NR
Pyraclostrobin	P-G	NR	F	F	NR	G	NR
Sedaxane	NR	NR	E	NS	NR	G	NR
Thiabendazole	NR	NR	NS	NS	P	U	NR
Trifloxystrobin	P	P	F-E	F-G	NR	P-F	NR

Fungicide(s)	
Product/Trade name	Active ingredient
Acceleron	DX-612 Fluxapyroxad DX-309 Metalaxyl DX-109 Pyraclostrobin
Allegiance FL	Metalaxyl
Allegiance LS	Metalaxyl
Apron XL LS	Mefenoxam
ApronMaxx RFC	Fludioxonil Mefenoxam
ApronMaxx RTA	Fludioxonil Mefenoxam
CruiserMaxx	Fludioxonil Mefenoxam
CruiserMaxx Advanced or Cruiser Maxx Plus	Fludioxonil Mefenoxam
CruiserMaxx Advanced Vibrance	Fludioxonil Mefenoxam Sedaxane
Dynasty	Azoxystrobin
EverGol Energy SB	Metalaxyl Penflufen Prothioconazole
ILeVO	Fluopyram
Inovate Pro	Ipconazole Metalaxyl
Intego	Ethaboxam
Lumisena	Oxathiopiprolin
Maxim 4FS	Fludioxonil
Mertect 340 F	Thiabendazole
Prevail	Carboxin Metalaxyl PCNB
Trilex 2000	Metalaxyl Trifloxystrobin
Vibrance	Sedaxane
Warden CX	Fludioxonil Mefenoxam Sedaxane
Warden RTA	Fludioxonil Mefenoxam