



Fungicide Efficacy for Control of Soybean Seedling Diseases

Members of the **Identification and Biology of Seedling Pathogens of Soybean** project (funded by the North Central Soybean Research Program and the United Soybean Board) and the **North Central Regional Committee on Soybean Diseases (NCERA-137)** developed this information about how well fungicide seed treatments control soybean seedling diseases in the United States.

Members determined the efficacy rating for each fungicide by field-testing the materials over multiple years and locations. They 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 www.apsnet.org. Efficacy ratings are based on the level of disease control achieved by the active ingredient. Ratings do not necessarily reflect yield increases from applying the active ingredient.

The table includes the most widely marketed products available and is not intended list all labeled active ingredients and products. Additional active ingredients may be available but have not been evaluated in a manner allowing a rating. The products listed here are the most common available as of the release date of the table. Not all available products may be listed.

Some products may contain additional active ingredients for insect and nematode control; however, only the active

ingredients for pathogen control are listed and rated here. Many products have specific use restrictions.

Efficacy ratings may depend on the rate of the fungicide product on seed. A number of different *Pythium* and *Fusarium* species affect seed and seedling health in soybean. Therefore, wide ranges in efficacy may be observed in active ingredients in the table. This is why combining several fungicide active ingredients in seed treatments protects against a broader spectrum of pathogens. Contact your local extension plant pathologist for recommended fungicide product rate information for your area.

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 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 Seedling Diseases¹

Fungicide Active Ingredient	<i>Pythium</i> sp. ²	Phytophthora Root Rot	<i>Rhizoctonia</i> sp.	<i>Fusarium</i> sp. ^{2,3}	Sudden Death Syndrome (SDS) (<i>Fusarium virguliforme</i>)	<i>Phomopsis</i> sp.
azoxystrobin	P-G	NS	VG	F-G	NR	P
carboxin	U	U	G	U	NR	U
ethaboxam	E	E	NR	NR	NR	NR
fludioxonil	NR	NR	G	F-VG	NR	G
fluopyram	NR	NR	NR	NR	VG	NR
fluxapyroxad	U	U	E	G	NR	G
ipconazole	P	NR	F-G	F-E	NR	G
mefenoxam	E ⁴	E	NR	NR	NR	NR
metalaxyl	E ⁴	E	NR	NR	NR	NR
oxathiapiprolin	P-G	E	NR	NR	NR	NR
PCNB	NR	NR	G	U	NR	G
penflufen	NR	NR	G	G	NR	G
prothioconazole	NR	NR	G	G	NR	G
pyraclostrobin	P-G	NR	F-G	F	NR	G
sedaxane	NR	NR	E	NS	NR	G
thiabendazole	NR	NR	NS	NS	P	G
trifloxystrobin	P	P	F-E	F-G	NR	P-F

¹ Efficacy ratings: P=poor. F=fair. G=good. VG=very good. E=excellent. NR=not recommended. U=unknown efficacy or insufficient data to rank product. NS=not specified on product labels. NR ratings may mean that the specific fungicide active ingredient does not target the fungal group.

² Products may vary in efficacy against different *Fusarium* and *Pythium* species.

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

⁴ Areas with mefenoxam- or metalaxyl-insensitive populations may see less efficacy with these products.

Common Fungicide Trade Names and Active Ingredients

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 Vibrance® or Vibrance Trio®	fludioxonil mefenoxam sedaxane
Dynasty®	azoxystrobin
EverGol Energy SB®	metalaxyl penflufen prothioconazole
ILeVO®	fluopyram
Inovate Pro®	ipconazole metalaxyl
Intego®	ethaboxam
Lumisena®	oxathiopiprolin metalaxyl
Maxim 4FS®	fludioxonil
Mertect 340F®	thiabendazole
Prevail®	carboxin metalaxyl PCNB
Trilex 2000®	metalaxyl trifloxystrobin
Vibrance®	sedaxane
Warden CX®	fludioxonil mefenoxam sedaxane
Warden RTA®	fludioxonil mefenoxam

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.