

Agronomic Crops Network

Ohio State University Extension



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COLLEGE OF FOOD, AGRICULTURAL,
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SEED TREATMENTS FOR WATERMOLDS AND FUNGI THAT AFFECT SOYBEAN IN OHIO

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There are some new fungicide seed treatments and an updated efficacy chart from the North Central Extension Research Committee, my soybean colleagues across the region. We look at all of our results across our trials and make modifications to this list. [The table is posted here.](#) (Printable PDF- Management of Soybean Seedling Diseases Fungicide Efficacy for Control of Soybean Seedling Diseases – January 2017)



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
Chloroneb	U	P	E	P	NR	P	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

Seeds planted into cool or warm wet soil are vulnerable to infection from a number of different pathogens. Ohio's poorly drained soils are particularly favorable for the group of pathogens known as water molds, *Pythium* spp. and *Phytophthora*. We have documented two species of *Phytophthora* that infect soybean, *Ph. sojae* (the most famous) and *Ph. sansomeana*. There are many *Pythium* spp., more than 30 that we have recovered and confirmed as pathogens of soybean in Ohio. Historically, metalaxyl and mefenoxam were the two seed treatments that targeted the water molds, but in Ohio; there are a number of *Pythium* populations that are resistant or have reduced sensitivity to these compounds. The strobilurin fungicides

(azoxystrobin and pyraclostrobin) have activity towards some *Pythium* spp. but not all. There are now two new fungicide seed treatments on the market, ethaboxam and oxathiopiprolin. Ethaboxam was developed by Valent and it has very good activity towards *Phytophthora* sp. and a good proportion of the *Pythium* spp.. Oxathiopiprolin was developed by DuPont and it has very good activity towards *Phytophthora*.

For the true fungi, again the theme is that no one fungicide will cover all the bases. Two examples of this are sedexane, which is for *Rhizoctonia* only and the newly registered material, fluopyram which targets *Fusarium virguliforme*, the sudden death syndrome (SDS) pathogen. *Fusarium graminearum* has been associated with poor stand in Ohio, especially in fields with high levels of corn residue. Pay particular attention to this if the field has had a history of head scab on wheat or *Gibberella* ear or stalk of corn. This pathogen can infect and cause disease on ALL THREE crops.

For seed borne diseases, the one we deal with the most is Phomopsis. This can occasionally occur in Ohio, but usually associated with a highly susceptible variety. For seed lots where germination is greater than 70%, there are a number of products that are very effective in limiting infections to young seedlings. Phomopsis mycelia can be on the seed coat, but not harming the seed until it is planted and then it will grow just as fast as the young seedling and kill it. So the seed treatment will take care of these situations, if the seed is already dead, or dried from infection, the seed treatment, will not bring it back to life!

Occasionally, we will see some secondary effects of seed treatments. Some not so good, if seed treatments are applied to damaged seed it can reduce the germ. But some can be serendipitous. Which is why I have added a SCN column to the table this year. Fluopyram, the same fungicide for SDS, does appear to impact SCN. This is not a total control, nor have we observed a decline in populations, but obviously protects young seedlings from those early infections and delays SCN establishment. Which can help. Interestingly this effect is observed at a lower application rate than what is required to manage SDS. So if you are trying to mitigate the effects of SDS on a susceptible variety, then the higher rate on the label is required. If you know you have high SCN populations and are planting a resistant variety (please don't plant a susceptible variety under high SCN pressure...), then this seed treatment does provide some additional protection from early feeding.

Topics: **Soybean Disease**

ABOUT THE C.O.R.N. NEWSLETTER

C.O.R.N. is a summary of crop observations, related information, and appropriate recommendations for Ohio Crop Producers and Industry. C.O.R.N. is produced by the Ohio State University Extension Agronomy Team, State Specialists at The Ohio State University and Ohio Agricultural Research and Development Center. C.O.R.N. Questions are directed to State Specialists, Extension Associates, and Agents associated with Ohio State University Extension and the Ohio Agricultural Research and Development Center at The Ohio State University.