

CATEGORY 4

Commercial Seed Treatment Supplement



Extension
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College of Agriculture,
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Acknowledgments

This guide is a supplement to the Seed Treatment National Pesticide Applicator Study Manual. It outlines general information about seed treatment applications to provide you with a quick reference for commonly accessed information.

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Alfalfa

Fungicides

New alfalfa seedlings may be subject to seed rots, seedling rots and damping off. Phytophthora is commonly found in Missouri.

Fludioxonil, Mefenoxam, Metalaxyl, Penflufen, Prothioconazole, Pyraclostrobin, Thiabendazole, Trifloxystrobin

Corn

Seed companies pre-treat their seed with insecticides and fungicides.

Fungicides

Azoxystrobin, Fludioxonil, Iaconazole, Mancozeb, Mefenoxam, Metalaxyl, Pyraclostrobin, Tebuconazole, Thiabendazole, Thiram, Trifloxystrobin, Triticonazole

Insecticides

Insecticidal seed treatments may be used to control light populations of soil insects such as seed-corn maggots, white grubs, and wireworms.

Chlorantraniliprole, Clothianidin, Imidacloprid, Thiamethoxam

Cotton

Fungicides

Azoxystrobin, Carboxin, Flutolanil, Fludioxinil, Iaconazole, Mancozeb, Mefenoxam, Metalaxyl, Pyraclostrobin, Thiram, Triadimenol, Trifloxystrobin

Nematicides

Aldicarb, Fluopyram, Abamectin. Biologicals are currently being evaluated for use in cotton production.

Insecticides

Primary early season threat is thrips (Tobacco Thrips and Flower Thrips).

Faceplate, Neonicotinoids (Imidacloprid, Thiamethoxam),

Grain Sorghum

Fungicides

Mefenoxam and Fludioxonil can reduce the impact of seedborne diseases Phomopsis and Sclerotinia and major seedling diseases including Fusarium, Phytophthora, Pythium, Rhizoctonia, Sclerotinia.

Fludioxonil, Mefenoxam

Herbicides Note: Concep herbicide safener protects sorghum plants from damage from chloroacetamide herbicides such as metolachlor that control grass and pigweed species.

Peanuts

Fungicide

Azoxystrobin, Fludioxonil, Mefenoxam, Pydiflumetofen, Sedaxane

Insecticide

Thiamethoxam

Inoculants for legumes

Alfalfa, clovers, soybeans, peanuts

Rice

Fungicides

Arazone, Benlate, Carbendazim, Mancozeb, Pyroquilon, Thiabendazole (TBZ), Tricyclozole

Insecticides

Thiamethoxam



Soybeans

Treating soybeans should be considered in early planting into cold, wet soils, reduced and no-till fields and where seed may have low seed vigor. (Growers can obtain seed which is treated on non-treated).

Fungicides

Damping-off diseases can impact soybeans. The fungi can cause seed rot, seedling rot and seedling disease. The common fungi are Pythium, Rhizoctonia, Fusarium and Phytophthora.

Mefenoxam and metalaxyl are used to control water molds from Pythium and Phytophthora. Fluopyram and pydiflumetofen are specific treatments for Sudden Death Syndrome.

Azoxystrobin, Carboxin, Ethaboxam, Fludioxonil, Fluopyram, Fluxapyroxad, Ipconazole, Mefenoxam, Metalaxyl, Oxathiapiprolin, PCNB, Penflufen, Prothioconazole, Pyraclostrobin, Pydiflumetofen, Sedaxane, Thiabendazole, Trifloxystrobin, Tolclofomethyl

Insecticides

Imidacloprid, Thiamethoxam

Winter Wheat

Seed treatments should be considered with delayed planting into cool, wet soils.

Fungicides

Seed treatments are used to control common bunt and loose smut. They also can improve stands and reduce root diseases.

Low germination seed may be caused by seed-born Fusarium or other fungi.

Difenoconazole, Fludioxonil, Fluxapyroxad, Ipconazole, Mefenoxam, Metalaxyl, Penflufen, Prothioconazole, Pyraclostrobin, Sedaxane, Tebuconazole, Thiabendazole, Triticonazole

Insecticides

Seed treatment insecticides may reduce fall aphid populations.

Imidacloprid, Thiamethoxam

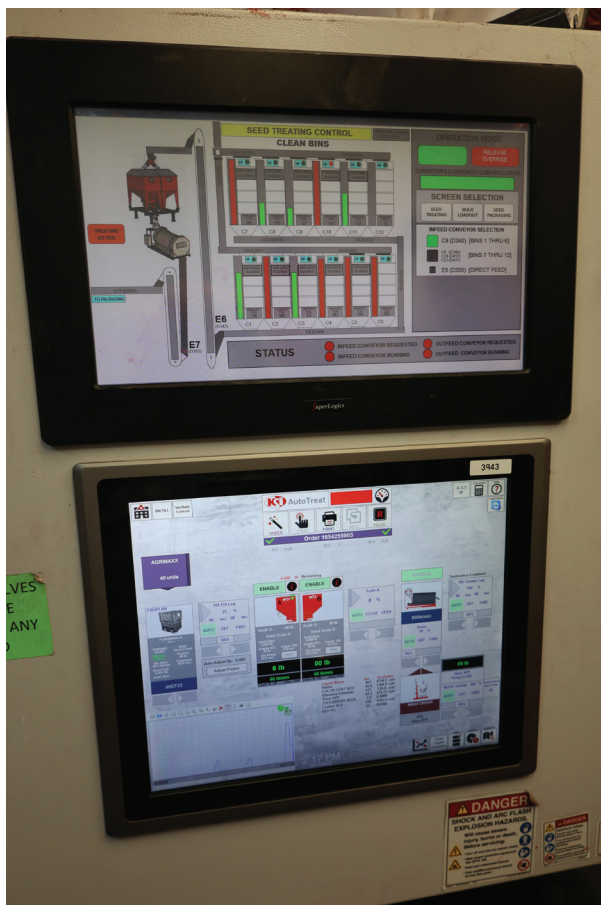
If you need assistance with seedling disease identification, you can submit samples to the University of Missouri's Plant Diagnostic Clinic.



Weigh scales on a direct-injection seed treating system. Each scale weighs a different treatment component. The system injects individual chemical components using a loss-in-weight method.



Calibration container. Each station has a calibration container the pump runs into for calibration purposes.



Programmable logic controller (PLC) for treatment system. Grain flow and chemical flow are controlled here.



Weigh-Scale display. This scale shows a negative weight which accounts for the weight of the chemical tote.



Chemical Hopper. This is another scale station with a permanent chemical hopper. This station is used for smaller components with a lower use-rate.



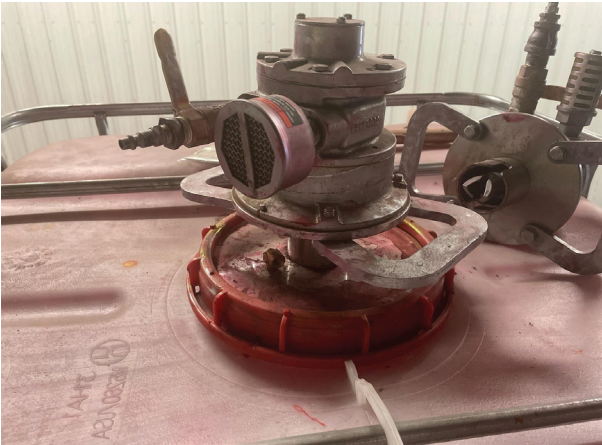
Treater Drum: From the atomizer, the wet seed is tumbled through the drum. Tumbling serves to distribute an even coat of chemical to the surface of the seed.



A system of three flow meters, allowing the accommodation of 210-gallon chemical totes.



Atomizer. Chemical is pumped into the atomizer and onto a spinning wheel. The spinning wheel creates a mist of chemical. A steady flow of seed falls on all sides of the spinning atomizer disk which enables each seed to get initial contact with the chemical treatment. (All of this occurs within the atomizer).



Pneumatic spinners keep the treatment solution mixed on the large chemical totes.



Flow meter.



Bulk seed fill station for treated seed.



Scales, which can be used in place of the flow meters for lower volume applications.



Closeup of the seed diffuser, with the atomizer disk below (small disk hanging underneath).



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