



CROP SOLUTIONS THAT WORK

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The story behind fungicides

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According to the Fungicide Resistance Action Committee (FRAC) at last count there were 78 different groups of fungicides. We use three main groups in a majority of our field crops. The groups are Succinate Dehydrogenase inhibitors (SDHI), Quinone Outside Inhibitors (QoI) or Strobilurins and DeMethylation Inhibitors (DMI) or Triazoles.

The SDHI fungicide is a group 7 fungicide. They inhibit the function in the electron transport chain of the fungi, stopping the infection from spreading. Some of the diseases that it would target are blights, rust, mildew, scab and leaf spots. The chemical moves translaminarily throughout the plant (upward and downward). The SDHI's act as a residual and a preventative product.

It's suggested that you apply this before the infection sets in. Examples of chemistries with SDHI are Trivapro which contains sedaxane and also contains a group 3 and 11 and Priaxor which contains another group 7 fluxapyroxad and a group 11.

QoI or Strobilurin's are a group 11 fungicide. With this group of fungicides, the fungal respiration is inhibited and the electron transfer chain is blocked. The result is energy production in the fungus is stopped. A unique characteristic of this fungicide is the affect it has on plant health. This is the reason you sometimes see the plant stay greener longer into the fall. This is a preventative fungicide.



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It should be sprayed on time at the appropriate growth stage. Fungi it works on are mildews, blights and rust. This is the best option for spore germination. Ensure you have good coverage when applying products with this group in it. Examples of chemistries that contain a “Strobi” are Trivapro, Quilt, Headline AMP, Stratego Pro, Acapela etc.

DMI or Triazoles are a group 3 fungicide. While there are no true curative fungicides the group 3 comes as close as we have to a curative in that they can stop infection once it has started. They inhibit the fungus from spreading that has already entered the plant. This happens by inhibiting processes in the cell membrane and cell wall production creating abnormal fungal growth.

Diseases that this chemical works on are mildews, rust, leaf spots and fusarium. This product needs to be applied before the fungus produces spores. Using an IPM approach such as DONcast for wheat helps to identify risk of infection using weather models. This helps us to decide on the need for an application to reduce risks of infection, prevent loss of yield and crop marketability. Examples of this chemical are Caramba, Headline AMP, Prosaro, Stratego Pro & Trivapro.

Care needs to be given to the fungicide groups and pathogen we are trying to prevent from infecting. In the case of Fusarium Head Blight on wheat only use the group 3 products. Using a group 11 should be avoided as the risk for increasing DON production is likely. Just like we see resistance in herbicides and insecticides, we can also encounter this with fungicides.

Be sure to spray at the right growth stage, don't cut rates, avoid repeating the same fungicide over and over and spray for a targeted disease with the right product. The chemistry with the highest risk of resistance is the Strobi (group 11) Fungicides. One single point of resistance in the fungus is needed in order to create resistance, it can happen very suddenly.

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Growth stage of the crop is also very important. Some fungicides are applied at heading in cereals others for corn at VT and R1 and on soybeans R1 to R2 and if suppressing white mold two sequential sprays beginning at R 1 and again at R2.5 may be necessary.

As always, your AGRIS and Wanstead Farmer's Co-operative and Haggerty Creek crop sales specialists are available to help with choosing the right product and applying at the right growth stage.

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