

Spray Tank Mixing Order Important to Minimize Nozzle Plugging

When spray tank mixing fungicide products always continue agitation and fully dissolve wettable powder type materials first.

Steven Poindexter, Senior Sugarbeet Extension Educator, MSU Extension
Poindex2@msu.edu; Cell 989-798-5848

It is very common for growers to want to tank mix multiple products when spraying in order to save time, application cost and/or for resistance management. In many cases products can be combined in the spray tank if a proper mixing order is followed. It is important when mixing any type of pesticides or fertilizers that you wear the appropriate safety equipment and “Read and Follow Label Directions Carefully”. If there are known interactions or compatibility issues they will be stated. Be aware it would be impossible for the label to advise on all possible tank mix combinations and interactions, so be cautious. Michigan State University Extension recommends before mixing multiple chemicals and/or fertilizers, growers should confirm compatibility by performing a jar test.

Be sure to fill spray tank $\frac{1}{2}$ to $\frac{3}{4}$ full of water and have good agitation before adding any product. If mixing procedure is stated on the label, then follow as instructed. Generally in order to minimize nozzle plugging, the harder to mix products should be fully dissolved before the next product is added. The hard to mix products are water soluble packets and wettable powders which include dry flowables and water dispersing granules. Products that fit into this category are the Tins and EBDC's such as the Manzate/Penncozeb type materials. A de-foaming agent may need to be added first if the tank has foam on top. The foam can cause the powder to cake up and not disperse.

Copper compounds are a common tank mix partner with fungicides in the sugarbeet growing region and should be added following the wettable powder type materials. It should be noted that we do not recommend fungicides for Cercospora leaf spot be mixed or sprayed at the same time with glyphosate and AMS. This is particularly true with some copper compounds as severe crop injury can occur. Another reason is that recommended water volume and spray pressure are different between the fungicides and herbicide. This may also effect efficacy or drift potential.

Make sure all pesticide products are added one at a time. If two products are added at the same time, you could have some congealing of the concentrates. Generally, wettable powder (WP) and dry flowables or water dispersing granule (DF, WDG) products should be added first, followed by flowable (F, FL) and microencapsulated (ME) products. Add emulsifiable concentrates (EC) next followed by any solution (S) or soluble powder (SP) products. Any crop oils or surfactants should be added last.

Michigan Sugar Company Grower Guide advises some spray materials are difficult to keep in suspension. Good agitation and a compatibility agent may be needed to insure uniformity. Prepare only enough products that can be used in one day. It is not advisable to leave spray in the tanks overnight; it may separate out or have adverse effect on efficacy.