Spray Tank Mix Order

Posted by Mike Biltonen
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In a previous thread, there was a discussion of pH and other issues that affect spray tank efficacy. However, I haven't seen posted (correct me if I've missed it) is spray tank mix order based on product formulation. Knowing "what" you are spraying must go beyond what the ingredient list is. You need to know the formulation and more often than not the labeled "inert ingredients" aren't labeled at all due to issues of IP. If you are using homemade products, then knowing what you've got and how they will interact with the manufactured products is critical to the mixing process. So, I've amended this from open source doc on the internet as a guideline. Yes, some of it will only apply to conventional materials, but most of it does not and gives you a comprehensive field of view when thinking about what to spray, when and how to mix.

Mixing Order Recommendation:
1. Fill the spray tank with one-third of the carrier (water) to be used. Have the agitator on.
2. Add ammonium sulfate (or other water softener) for products that need a water softener.
3. Use a defoamer if excessive foam is produced by the pesticide mixture. Refer to the label.
4. If needed, add dry wettable powders (WP), dry flowables (DF) materials or water dispensable granules (WDG). Water soluble packets need time to soak with a small amount of water before being added to the tank. It is always recommended for pre-slurry wettable powders and dry flowables to be at a 2:1 ratio with water before being added to the partially filled spray tank. Some pesticides need presoaking.
o Agitation is used to uniformly disperse the added herbicides. Agitation means a rolling surface action. Be cautious of over agitating due to the possibility to reducing compatibility or excessive foaming.
o In most situations it is best to continue the agitation until the spray solution is applied. If agitation is stopped, make sure the suspension is satisfactory before application.
5. After dispersal, increase the carrier (water) to 80 percent of the spray solution to be used.
6. If needed add liquids and flowables next.
7. Then add emulsifiable concentrates (EC). Microencapsulated formulations should be added after the emulsifiable concentrates.
8. Add surfactants and oils last. Some surfactants can cause excessive foaming. If applicator is concerned about the possibility of drift, a drift control agent could be added at this point.
9. Add carrier to 100 percent of the spray solution to be used and make sure spray solution is mixed thoroughly before starting application.

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