Dealing with foam build up in the spray tank

There have been mixed reports that some silicone defoamers have limited effect on glyphosate or other foaming prone chemicals. The following guidelines may be helpful if you encounter problems with foam buildup in the spray tank.

Foam buildup occurs when air is introduced in a spray solution through mechanical, jet and/or bypass agitation. Under these circumstances, a surface reaction occurs with the chemical, the adjuvants and/or other emulsifiers. If you eliminate or reduce the bubbling agitation, the foam buildup will be drastically reduced or eliminated completely. However this may not always be possible under every situation and the use of an antifoam agent may be necessary.

Most antifoaming agents, including Flat-Out™, Halt™ and Fighter™ F are based on silicone emulsions to control foam. They contain varying percentages of the active ingredient polymethylsiloxane (also referred to as dimethylpolysiloxane). Flat-Out contains 18% active ingredient while Halt contains 17% and Fighter F 10%. They can be used to eliminate foam that has already developed and prevent foam from reoccurring. Antifoam agents will spread over the top of the spray solution to form a barrier.

Silicone emulsions reduce surface tension of the bubbles causing them to burst and break down the foam build up. Controlling foam can vary significantly depending on water conditions, temperature, composition, viscosity, agitation, type of product that causes the foaming situation and other conditions. Therefore rates for an antifoam agent may require adjustment for the most effective dosage.

In side-by-side comparison, Flat-Out outperformed other antifoam agents. It contains special emulsifiers that allow the active ingredient to surround the foam bubbles thus bursting this water/air interface more effectively. This unique formulation will control foam where other products won't.

Guidelines for effective control of difficult foaming situations

1. If foam is already built up in the tank, stop all agitation. (Under difficult foaming situations or where high levels of foam already exist in a spray tank, Flat-Out works at eating foam as long as you give it a few minutes with all agitation turned off).
2. Add the recommended amount of antifoam. (Usually around 50 mL per 1000 L - 250 US gals)
3. Let the antifoam work for 10-15 min with agitation turned off until the foam breaks down. It will then keep the rest of the load in check.
4. With the next tank, always fill the sprayer two-thirds to three quarters full of water before agitating and adding any chemical.
5. If using a chemical induction system, cut back on the bypass pressure and volume while loading. Be sure the valve is closed after injecting the chemical to reduce any air bubbles while agitating and spraying.
6. Add antifoam to the tank. Keep in mind that antifoam agents float on the surface and cling to the tank. You may be able to cut back the amount of antifoam considerably if there is still spray left over in the bottom of the last tank load.
7. Always triple rinse the pesticide jugs and add rinsate to the tank, as there is often antifoam in the formulation that sticks to the jug until rinsing.
8. Consider using greater water volumes and lower pressure if foaming still persists.
9. Be aware that soft water may foam much more than hard water.
10. Only use registered surfactants such as Agral 90 as others may cause excessive foaming.
11. Consider changing the orifice in your jet agitator if excessive agitation results.
12. Consider altering the sprayer to have the bypass agitation routed to the bottom of the tank

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