



## Tip of the Month

December 2017

### CAN ADJUVANTS BE ANTAGONISTIC TO HERBICIDES?

Villa has always encouraged the use of the correct adjuvants to increase pesticide activity. We therefore believe that the correct adjuvant choice will enhance and stabilize control under various weather conditions and with various water qualities. The question arises whether the incorrect adjuvant selection can be detrimental to herbicide activity? Unfortunately, the answer to this question is YES! On numerous occasions, we have observed a decrease in weed control when the incorrect adjuvant is used. We have also seen crop damage when antagonistic adjuvants are used. This has occurred because of poor absorption of the herbicide resulting in leaf scorch. In the ensuing discussion, a few examples of antagonism because of incorrect adjuvant choice, will be given.

#### Sulfonylurea herbicides (SU's)

SU herbicides are absorbed more effectively when they are more soluble in water. A general rule with SU's is that they are at their most soluble and effective at relatively high pH levels. Certain SU labels, like halosulfuron, recommend the use of ammonium sulphate adjuvants when using poor water sources. Normally, high quality ammonium sulphate does not reduce the water pH too much, and it can be used very effectively with halosulfuron. The problem arises when ammonium sulphate adjuvants are used that also contain an acid or a buffer in the formulation and the pH is reduced too much. In this case the ammonium sulphate will do its job, but because of the excessively low pH, the halosulfuron will be insoluble and less effective. Villa therefore only recommends pure ammonium sulphate adjuvants with no added acids or buffers with halosulfuron. The same principle applies to chlorimuron when applied in combination with glyphosate. Please do not decrease the pH of these spray solutions any further as the SU activity could be decreased. The same also applies to low pH surfactants and other adjuvants.

#### Glyphosate

Glyphosate is a herbicide that is very commonly influenced by tank-mix partners. Humectancy, commonly referred to as re-wetting, is important

to certain herbicides. Therefore, many adjuvant products that are recommended with glyphosate, contain humectants. However, one must bear in mind that the humectant chemistry, is just as important. Therefore, glyphosate activity with two adjuvants containing precisely the same humectant properties, may differ vastly. Some humectants are synergistic and others are antagonistic to glyphosate weed control! Don't simply select an adjuvant for glyphosate because of its humectant properties. Rather choose an adjuvant where there is concrete proof that the humectant in the formulation is not antagonistic to glyphosate. The same principle applies to other adjuvants used with glyphosate.

#### Fop and Dim herbicides

Fops and dims are selective graminicides, therefore grass weed herbicides. Some of these herbicides, like clethodim, react positively to ammonium sulphate because of their water quality sensitivity. Other herbicides in these groups, including quizalofop, may react positively to other properties of ammonium sulphate. Both these herbicides have selective surfactant or oil products that they are effective with. The reasons for this are very complex, but the main factor is rapid and effective absorption. The incorrect adjuvant choice with the fops and dims could result in extremely poor weed control.

#### Villa's stance

Adjuvant choice is crucial for effective weed control. Each herbicide has got specific requirements and only the correct adjuvant choice will satisfy those requirements and result in excellent weed control. Adjuvant choice makes a HUGE difference. Choose adjuvants very wisely to optimize and stabilize weed control under various conditions!

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