

Villa Adjuvant Tip of the Month



MORE IS NOT ALWAYS BETTER

Adjuvants are used to enable crop protection products (CPP) to reach more of their potential. Retention, spreading of spray droplets and absorption are required for optimal CPP efficacy. Surfactants and oils are used to address all three of these requirements. There is a perception that the more that surfactants spread, the more effective the CPP will be. Therefore, surfactants with an exceptional spreading ability are preferred to products that don't spread a lot.

Buffers are used to reduce the pH of the spray solution, mainly to limit alkaline hydrolysis of insecticides. However, they are also used with other CPP when a lower pH is required. Buffers that reduce the pH of alkaline water more readily are therefore often preferred.

These perceptions can be very dangerous as each individual CPP has different requirements and more is not always better.

Spreading

Massive spreading ability will be a requirement when applying a CPP on extremely waxy leaf surfaces or when the pest is found in inaccessible places. It could also help when applying a CPP on large plants where extreme spreading and run-off is required to reach the target. However, too much spreading of spray droplets could actually be a disadvantage to herbicides like glyphosate. It has been proved in some research that glyphosate is absorbed more readily from droplets that are not spread out too much. Excessive spreading may also cause run-off, with all the associated problems. We must therefore not measure surfactants or oils solely on their spreading ability, but rather on their ability to enhance the activity of CPP. Retention and absorption ability are also major reasons why certain surfactants and oils are more effective with specific CPP.

pH

It is vitally important to reduce the pH of CPP spray solutions when the specific label recommends it. This could be to limit alkaline hydrolysis of insecticides or to increase the efficacy of the CPP. However, please make sure that the buffer that you use has got some mechanism or indication of the correct pH. Although pH-reduction is important to certain CPP, excessive acidification could cause serious efficacy limiting problems. Remember that a 1-point reduction on the pH scale, represents a 10-fold increase in acidity! Too much acidification has many disadvantages, but an important one is the solubility of certain CPP. CPP that require acidification are often applied in tank mixtures. Too much acidification could reduce the solubility of tank-mix partners and will decrease efficacy and increase the chance of incompatible spray mixtures. This could be a major problem in water with a low buffering capacity.

Villa's stance

Adjuvants provide properties that are important to optimize CPP efficacy. However, too much of a certain property could become an efficacy limiting factor. It is important to be aware of what the requirements of the CPP are and to use the label recommended adjuvant. Incorrect spreading ability or pH could result in unacceptable control. Extremely low pH is also one of the major contributing factors to incompatible spray mixtures.

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