Laeveld Agrochem
Saam boer ons vooruit
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Don’t lose sight of the adjuvant rate!

By Brian de Villiers

It is important to address efficacy-limiting factors of crop protection products (CPPs) by using the correct adjuvant type. Adjuvants come in six active ingredient groups, namely buffers, salt adjuvants, deposition agents, surfactants, oils, and stickers. Each of these groups addresses a specific product limitation and can either be used with a wide range of CPPs or is more specialised for application with specific products. However, we often forget that adjuvant rate is just as important as active ingredient. It is pointless to use the correct adjuvant type if the rate is too low. We will illustrate this point by using the examples of salt adjuvants and surfactants.

Salt adjuvants

Spray water typically contains calcium, magnesium, sodium and potassium. All four these cations are antagonistic to glyphosate and various other post-emergence herbicides. Ammonium sulphate is the most frequently used salt adjuvant to address these cations, but products with other active ingredients are also available. It is crucial to apply the salt adjuvant at a rate where all these cations are neutralised. Various regions in South Africa have extremely hard or brackish water and the adjuvant rate should be sufficient to address these cation levels. This is why ammonium sulphate, at the correct rate, is such a successful salt adjuvant. The complexing of these cations is also a complete, irreversible reaction, making it an extremely effective adjuvant. Therefore, with water conditioning, adjuvant rate is just as important as using the correct active ingredient.

Surfactants

Surfactants are active in three processes on the leaf, namely retention, droplet spreading and absorption. By reducing surface tension, surfactants limit droplet bounce and increase spreading. These two processes are vital to ensure coverage. Therefore, if a reduced rate of surfactant is applied, coverage will be negatively affected and efficacy will be reduced. Furthermore, the absorption rate and amount of CPP will also be reduced. Make sure that the surfactant is applied at the registered rate. This is particularly important for multi-component adjuvants that also contain a surfactant, including some buffers and salt adjuvants. Ensure that enough surfactant is being applied at the registered rate range of the multi-component adjuvant.

Villa’s stance

Adjuvant rate is just as important as the active ingredient. It is vital to use the correct product at the correct rate, to ensure CPP efficacy. Always ensure that multi-component adjuvants have enough of each active ingredient to be effective. If the adjuvant rate does not meet the needs of an application, use an alternative registered product. Contact your Villa agronomist for more information about adjuvants and water quality.

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Together cultivating success

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