



Villa Adjuvant Tip of the Month

ADJUVANTS AND HERBICIDE ABSORPTION

Each herbicide requires an optimal absorption period, and it is vitally important that it is not prolonged by adverse conditions. A herbicide spray droplet that lies prone on the leaf surface because of delayed absorption, is subjected to poor environmental conditions that will decrease weed control. These environmental conditions include extreme temperature, low humidity, photo-degradation, salt antagonism and moisture-stressed weeds.

It is important that the adjuvant that is used reduces the effect of these conditions, thereby protecting the herbicide. However, in commercial situations the incorrect adjuvant is often still applied, exposing the herbicide to sub-optimal conditions which reduce both the amount and rate of absorption.

This results in unacceptable weed control and a probable re-application.

Adjuvant choice is crucial

A herbicide such as clethodim should be protected against antagonistic ions in spray water and photo-degradation on the leaf surface. Therefore, it is important that ammonium sulphate and an oil adjuvant is used to optimise the absorption process.

Glyphosate should be protected against salt antagonism and low humidity, therefore ammonium sulphate, a surfactant and a humectant should be used. The adjuvant recommendations for these two herbicides is quite different, indicating the importance of knowing what each herbicide requires for adequate absorption. When clethodim and glyphosate are applied in combination, ammonium sulphate and a suitable oil adjuvant that doesn't antagonise glyphosate, should be used. The oil in this case takes over some of the humectant function. One aspect that all herbicides and crop protection products (CPP) can be exposed to, is poor coverage. Both these herbicides will therefore benefit from the use of a deposition agent. If more of the herbicide droplets can be retained on the leaf surface, more product will be available for absorption. Please make sure that none of the adjuvants that are used have a detrimental effect on any of the tank-mixture components.

When things go wrong

When the incorrect adjuvants are used with these two herbicides, it exposes them to antagonistic factors that reduce weed control. This also applies to all other post-emergence herbicides and CPP that are applied with adjuvants. Agents and growers often want to use as few adjuvants as possible for various obvious reasons. While we understand the reasoning behind this approach, it also means that the incorrect adjuvant will often be used. Just imagine the poor control with glyphosate if it is applied with an antagonistic oil adjuvant. Clethodim that is applied with the incorrect adjuvant will slow down the absorption rate, exposing it to photo-degradation.

Villa's stance

Absorption with the help of adjuvants is a key process with herbicide efficacy. Once enough droplets have been retained on the leaf surface, only a part of the efficacy process has been completed. This is where adjuvants play a significant role in the absorption process. It is important to choose adjuvants that will help and not harm absorption. Please keep to label recommendations in this regard. These principles are equally as important to all CPP that are applied with adjuvants.

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