Adjuvant

Tip of the Month

June 2019

SPRAY DROPLET DEPOSITS ARE CRUCIAL FOR HERBICIDE ABSORPTION

It is sometimes assumed that once the spray droplet has been delivered to the target, that the efficacy of the herbicide is guaranteed. This is definitely not the case and the protracted herbicide absorption process must continue once the excess water from the spray droplet has evaporated.

Herbicide absorption must then occur under harsh South African weather conditions, with extremes in temperature and humidity. The moisture content of the spray droplet deposit is critical for increased absorption.

One method to keep the deposit moist for an extended period, is to use humectants. The benefits of using humectants have been discussed before, but it is important to understand that humectants are an extremely diverse group of adjuvants and product choice will determine herbicide performance. Humectants are not usually available as unmixed products but are sometimes incorporated into adjuvant formulations.

How do humectants work?

Humectants are substances that either slow down the herbicide deposit evaporation, or that have the ability to absorb moisture from the environment. By doing this, the spray droplet deposit is kept moist for a longer period of time, thereby increasing the absorption period of the herbicide. This could result in higher absorption and efficacy of the herbicide. Not only is the drying time increased, but some humectants also have the ability to create a more conducive environment for effective absorption.

Are humectants always effective?

Please take note that herbicides are normally very specific about the type of humectant that is used, and there may be a huge variation in efficacy with different humectants. It was proved with glyphosate that only certain humectant-containing products actually increased herbicide efficacy. In the same study, some humectants were neutral, and others were even antagonistic to glyphosate efficacy! Keeping the spray deposit moist is not the only important factor for herbicide uptake. The chemical and physical properties of the humectant are also crucial to ensure optimal herbicide absorption. The incorrect humectant choice could have the opposite effect and may decrease weed control. Only use humectant-containing adjuvants that have a proven track record or when the specific herbicide is enhanced by a moister deposit.

Villa's stance

Villa believes in the use of humectants, only if the herbicide is benefitted by high moisture content deposits. However, it is important to use the correct humectants that will benefit herbicide absorption and increase weed control. Remember, the incorrect humectant can be antagonistic and may even decrease control. Choose wisely!

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