Adjuvant

Tip of the Month

February 2021

THE FUNCTION OF OIL ADJUVANTS WITH CLETHODIM

The importance of adjuvants is often disputed. However, having experienced the benefits of adjuvant use over many years, we know the value that they bring to many applications.

In the ensuing paragraphs, we will discuss clethodim and why it is important to apply it with the correct oil adjuvant. These principles will also apply to many other herbicides and crop protection products (CPP). However, the choice of either a surfactant or an oil adjuvant may differ, depending on the CPP.

Retention

This is probably the adjuvant property that receives the least attention, but it is a major contributing factor to clethodim efficacy.

It is important to deliver as many droplets as possible to the weed leaf surface by application technology and by using a deposition agent. However, this will be useless if the droplets bounce off the leaf on impact. This droplet bounce occurs because of a high surface tension.

It is important that the majority of droplets are retained once they reach the leaf surface. To achieve this, one has to reduce the surface tension of the droplets by using an adjuvant that contains a surfactant and/or an oil.

In the case of Villa's clethodim products, an oil is preferred. The oil adjuvant will ensure that the droplets will adhere to the leaf surface more readily. Once more droplets are retained, more active ingredient will be available for absorption.

Spreading

After the clethodim droplet has been retained on the leaf surface, it spreads over a certain area. This spreading area is very specific to individual products. The oil adjuvant that Villa recommends with clethodim spreads adequately to ensure optimal efficacy.

Absorption

After enough retention and spreading is achieved, the absorption process begins. Clethodim absorption is enhanced by using oil-containing adjuvants.

Firstly, oils have a longer drying time to facilitate a conducive environment for the full absorption process.

Secondly, the oil hydrates the leaf surface waxes to ensure optimal absorption.

The oil adjuvant ensures rapid absorption of clethodim to protect the active ingredient from photo-degradation on the leaf surface. Ammonium sulphate is also needed to neutralise antagonistic cations and to help with absorption.

Villa's stance

Adjuvant choice with clethodim is crucial. The adjuvant or adjuvant combination must ensure optimal retention, spreading and absorption. Any deviation from this recommendation will reduce the efficacy of the Villa clethodim-containing herbicides. Consult the label for detailed recommendations.

Contact Brian de Villiers
for more information on
adjuvants and water quality
082 880 0974 or
bdevilliers@villacrop.co.za

villa