



Villa Adjuvant Tip of the Month

MAKE PROVISION FOR WATER QUALITY EXTREMES

Water conditioning adjuvants are often developed for the worst-case scenario. This includes water that contains extremely high levels of antagonistic salts or has a high pH and buffering capacity. However, one must bear in mind that water often contains low salt levels or has a low buffering capacity. This water can be just as dangerous and has its own set of challenges. Adjuvants may be effective with high salt levels and buffering capacity, but they may have unintended disadvantages when salt levels are low. It is important to understand that there is no water quality that is ideal, and each water source will have both advantages and disadvantages. In the ensuing discussion the water conditioning adjuvants will be discussed in more detail.

Salt adjuvants

It is often assumed that glyphosate spray solutions should be acidified to obtain the most effective control. This is not an approach that Villa follows. However, certain acids because of their specific chemistry, could be beneficial to glyphosate. Ammonium sulphate and certain other water conditioning adjuvants may therefore also contain additional acid in the formulation. Please remember that excess acidification of glyphosate spray solutions could cause incompatibility issues in certain tank mixtures, especially when phenoxy herbicides are involved. This is often not a problem in water with a high buffering capacity, because the pH is not reduced excessively. However, in water with a low buffering capacity the pH may be reduced too much, exposing the glyphosate tank mixture to conditions that are conducive to low solubility and incompatibility. This occurs with adjuvants that don't have an effective mechanism to stabilise the pH at an acceptable level.

Buffers

Buffers are designed to decrease the pH to a certain range, often between pH 4 and 6. Good quality buffers contain a mechanism to ensure that the pH is not reduced too much. However, if a buffer with a poor pH-stabilizing mechanism is used, it could cause severe issues, like an extremely acidic spray solution. This is normally not a problem with highly buffered water because the pH is kept in the acceptable range. However, once the water buffering capacity is low, the pH may drop under the acceptable level, leaving the whole tank mixture exposed to extremely low pH levels. Once again, this is a problem encountered much more frequently in low salt content and low buffered water.

Villa's stance

All water sources have challenges and it is important that adjuvants cater for extreme situations. We often forget that low salt content water also has disadvantages that should be managed by the correct adjuvant choice. Water conditioners should not only cater for the high salt content and high buffering capacity situations.

They should buffer the water or decrease salt antagonism with the minimum of side-effects in all water sources. Make sure that the water conditioners that you use are effective with all water sources and tank mixtures.

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