Adjuvant

Tip of the Month

December 2019

pH IS A POOR INDICATION OF SALT CONTENT

pH is an indication of how acidic or alkaline water is. As discussed in previous editions, alkaline water can limit the efficacy of certain insecticides by a process called alkaline hydrolysis.

However, a disturbing trend is to use pH as an indication of ionic content of water. We so often hear that water is suitable for glyphosate merely because of the low pH! Unfortunately, pH is not correlated with the ionic content of water and it is a very poor indication of how hard or brackish water is.

To demonstrate this, the following table shows the cationic content and EC of two water samples, both with a pH of precisely 8.0.

pH	Cation & EC	Ionic concentration in mg/L & EC in mS/m	
		Sample 1	Sample 2
8.0	Calcium	44	107
	Magnesium	41	233
	Sodium	36	1648
	EC	63	1110

What is clear from this is that the two water sources may have the same pH, but the ionic content is totally different. Rather use EC as an indication of ionic content.

EC cannot identify the specific cations, but it will give a very good indication of total ionic content.

What are the important ions and factors?

When it is suspected that water quality is a problem and tests need to be done, do at least a pH and an EC measurement.

If a full water analysis must be done, include at least pH, EC, calcium, magnesium, sodium, potassium and bicarbonate. If a high iron level is suspected, it can also be included in the analysis.

Villa's stance

In most cases a full water analysis will probably not be necessary.

However, it is always a good practice to at least test for EC and pH of water. If one suspects that water quality is a major issue, have a full water analysis done and use adjuvants as recommended.

We are prepared to help interpret the report.

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

villa