

SOUTH AFRICAN SUGAR ASSOCIATION
AGRONOMISTS' ASSOCIATION

Cat. No. 1380

Title: Roundup and water quality (Observation)

Purpose: To test the effect of low water quality on Roundup efficacy

Methods: Roundup at 3 l/ha was mixed in Umdlotti River water, La Mercy borehole water and tap water from Mt. Edgecombe (Umdlotti river via Marshall dam). In one treatment diuron was added to tap water. These were applied by means of a knapsack sprayer to a stand on weeds consisting of:

Panicum maximum

Panicum laevifolium

Siegesbeckia orientalis

Result:

Water quality was:

Sample	EC (mmhos)	pH	Cations (me%-me/l)			Anions (me/l)	SAR
			Na	Ca	Mg	HCO ₃	
Umdlotti river	0,37	7,6	1,3	0,8	0,5	0,73	1,7
Borehole - La Mercy	2,18	6,9	8,7	6,2	5,3	2,83	3,6
Tap water	0,34	7,5	1,6	0,9	0,7	0,84	1,8

Mean weed control ratings were:- (EWRC 1-9)

Treatment	Ratings
1. Roundup 3 l/ha + Umdlotti water	4
2. Roundup 3 l/ha + Borehole water	4
3. Roundup 3 l/ha + diuron + tap water	5
4. Roundup 3 l/ha + tap water	7

Comments:

1. Due to weed pressure good coverage of lower weeds may have been prevented in some plots and this could have biased the assessment.
2. Differences are apparent in ratings but the quality of water in treatments 1 and 4 was very similar.
3. It is possible that discolouration from soil was greater in Umdlotti and borehole water than in tap water.

Conclusions

1. The evidence suggests that soil and diuron both affected Roundup in a relatively good water quality (low EC, cation, anion and SAR values).
2. The poor effects from borehole water could be from soil discolouration or high EC, cation, etc values.
3. More precise tests need to be conducted to confirm this supposition.

PETT/PMO
20.7.83