



Increase in chlorophyll content of spinach leaves with Tricon

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1. INTRODUCTION

Triacontanol is a natural plant growth regulator found in epicuticular waxes. Quite a number of researchers have reported the Triacontanol-mediated improvement in growth, yield, photosynthesis, protein synthesis, uptake of water and nutrients, nitrogen-fixation, enzyme activities and contents of free amino acids, reducing sugars, soluble protein, and active constituents of essential oil in various crops (Naeem *et al.*, 2012:129).

Magnesium (Mg) has a number of key functions in plants. Many essential plant functions require adequate Mg supplies, the most visible being its role in root formation, chlorophyll, and photosynthesis (Cakmak & Yazici, 2010:23).

Tricon is a plant growth enhancer with registration number B 4427, registered with Act 36 of 1947, containing 490 mg/kg Triacontanol and 9 900 mg/kg Mg.

2. Materials and Methods

Crop: Spinach

Variety: Fordhook Giant

Application timing and intervals: Single application, 1 month after transplant.

Parameters, measurements and observations: 20 chlorophyll readings were taken from the treated and untreated plots respectively using random sampling.

Table 1: Treatments

CROP	Treatments	Dosage rate/ha
Spinach	1. Untreated Control	-
	2. Tricon	500 ml

3. Efficacy assessment

Chlorophyll readings were taken before application of Tricon and 6 days after application of Tricon with a SPAD 502 Plus Chlorophyll meter.

4. Results

Table 2: Chlorophyll readings of spinach leaves

Before Application		After Application	
1. Control	2. Tricon	1. Control	2. Tricon
37,9 SPAD units	37,9 SPAD units	32,995 SPAD units	39,595 SPAD units

Chlorophyll content of spinach leaves

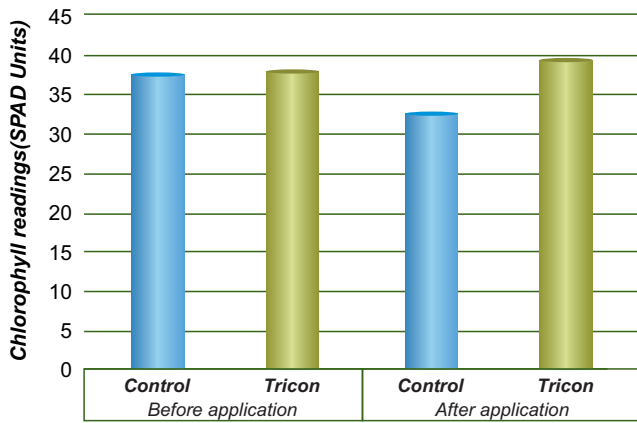


Figure 1: Illustration of Chlorophyll content for different treatments

5. Discussion

From the results presented above an increase in spinach leaf chlorophyll content can be observed after the application of Tricon. The chlorophyll readings for the plants treated with Tricon increased by 1,5 SPAD units even though leaf chlorophyll content decreased over the control group of plants with 5 SPAD units.

6. References

- CAKMAK, I. & YAZICI, A.M. 2010. Magnesium: A Forgotten Element in Crop Production, *Better Crops*, 94(2):23-25.
- NAEEM, M., MASOOR, M., KHAN., A AND MOINUDDIN, A. 2012. Triacantanol: A potent plant growth regulator in agriculture, a review, *Journal of Plant Interactions*, 7:129-142.