

## The Effect of Seaweed Concentrate on Wheat culms

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### Summary

Seaweed concentrate was applied to wheat plants either as a root drench or as a foliar spray. All seaweed treatments resulted in a marked increase in culm diameter. This increase was due mainly to an increase in cell size, especially of the vascular bundles. Seaweed concentrate also affected grain yield favourably. Similar observations resulting from other growth regulator usage and the significance of the findings are discussed.

*Key words: Ecklonia maxima, Triticum aestivum, lodging, seaweed concentrate.*

### Introduction

The application of seaweed to improve the growth of terrestrial plants is fast becoming an accepted practice. It is however, only relatively recently that the effects of seaweed treatments have been documented. In general, the reported beneficial effects of seaweed are i) improved overall plant vigour, ii) improved yield quality and quantity, and iii) improved ability to withstand adverse environmental conditions (Booth, 1969; Abetz, 1980). At present the principal active component still eludes identification.

Seaweed concentrate (Kelpak 66), produced in South Africa from *Ecklonia maxima* (Osbeck) Papenf. has been reported to favourably affect growth of tomatoes, beet (Featonby-Smith and Van Staden, 1983 a, b) and rye (Kotze and Joubert, 1980). Also, it would appear not to be antagonistic to concomitant herbicide application (Erasmus et al., 1982). In this study its effect on the growth of wheat was investigated.

### Materials and Methods

Wheat (*Triticum aestivum* L. em Thell. cv Inia) plants were grown in a growth chamber providing 16 hours light and diurnal temperatures of 20/15 °C. Seedlings were thinned to three per pot seven days from sowing when the first treatment was applied. The seaweed concentrate is manufactured from the large brown algae *Ecklonia maxima* by a cell-burst process which does not involve the use of heat, chemicals or dehydration. Hand-washed stipes of the