



## agriculture & environmental affairs

Department:  
Agriculture  
& Environmental Affairs  
**PROVINCE OF KWAZULU-NATAL**

### **ATTRIBUTES OF AN IDEAL GREEN MAIZE HYBRID AND PRODUCTION CONSTRAINTS IN KWAZULU-NATAL, SOUTH AFRICA**

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#### **Introduction**

Green maize provides food security, with potential to generate cash income for rural households in South Africa. However, research on green maize production has been scarcely reported, which negatively impacts on both variety development and management. The study aimed to determine the “ideal” quality and agronomic traits, production constraints, production trend and enterprise viability for green maize hybrids.

#### **Materials and Methods**

A case study was conducted at Mjindi and Ndumo irrigation schemes in KwaZulu-Natal. A formal questionnaire was deployed on 64 out of 100 green maize producers interviewed in a structured, one-on-one format. The data were analyzed using the SPSS computer programme.

## **Results and Discussion**

There are limited hybrid options for green maize production due to lack of general adaptation and value for use. The current hybrids were bred for grain production and lack some key green maize traits. There are no suitable green maize hybrids which are adapted to extremely hot conditions in summer, while only two hybrids SR52 and SC701 are grown in winter. The desired traits were a combination of sweet taste, long shelf life and large ears. Complementary traits were high grain yield potential, high selling ability, flint and white grain, medium ear placement, short maturity period, medium plant height, and good roasting ability. Enterprise budget analysis revealed a total production cost of R11 000 ha<sup>-1</sup>. The study showed an average return of R21 000 ha<sup>-1</sup> and gross margin of R10 000 ha<sup>-1</sup>. Green maize was produced in two seasons per year; because the niche environment allows both winter and summer production (May-October, and November-April). Consequently, income was doubled to about R35 000 ha<sup>-1</sup>. Nonetheless, the study also reveals that there is room for improvement which can be achieved by growing appropriate hybrids under better management to obtain first grade green ears which can earn market premium price. The major constraints included poor cultural practices which compromised both quality and yield. Thus a declining production trend was observed.

## **Conclusions**

There is thus a great potential for green maize production in the study area. However, lack of suitable green maize hybrids appeared to be the major hindrance. Future studies should aim to improve both the genetics and production economics. More income can be generated if desired traits for the consumers can be incorporated in hybrids to enable farmers to obtain a premium on green maize sales.