

COMMUNICATING GOOD AGRICULTURAL PRACTICES TO SMALL GROWERS IN KWAZULU: 1982-92

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Abstract

An extension programme for groups of small growers was designed to increase yields through improved ratoon management. In 1982 in the Illovo area a pilot programme was started with one group of small growers, and after a year 83% of the growers in the group had adopted the recommended management practices. In the 10-year period since the extension programme was introduced at Illovo, the mean yield obtained by growers has increased by 74%. A similar extension programme has since been implemented for six other groups of small growers. To date the overall adoption of improved management practices in these groups has increased by a mean of 77%. Although it has not yet been possible to measure yield increases accurately, production of cane from these areas has improved significantly.

Introduction

Sokhela and Bembridge (1991) state that cane production by small growers in KwaZulu is considerably below that achieved by the established commercial growers. Table 1 shows the production trends in KwaZulu for the past six years. It has also been determined that inferior ratoon management practices are usually the cause of this. In the project areas which are the subject of this paper, weed control was often too late and inadequate. Similarly, fertilizer was also applied late and at low rates.

Table 1

Average sugarcane production per hectare of registered sugarcane quota land in KwaZulu

Season	Tons delivered	Registered quota land	Tons cane per hectare
1985/86	1 499 564	48 772,5	30,75
1986/87	1 251 694	49 032,5	25,53
1987/88	1 438 644	49 178,0	29,25
1988/89	1 447 680	48 727,5	29,71
1989/90	1 126 103	59 984,5	18,77
1990/91	1 132 183	64 386,6	17,58
Total	7 895 868	320 081,6	151,59
Mean	1 315 978 ÷ 53 346,9 = 24,67		

The extension programme identified groups of growers which would be shown and taught improved ratoon management practices and motivated to adopt them. A necessary adjunct to the programme was recording the progress of its adoption.

Method

To start the programme the results of the pilot extension programme at Illovo were presented to all the organisations (Joint Extension Committees) associated with small grower development in KwaZulu, thus creating a wider interest for its application.

Then target groups of growers, identified as being suitable for and receptive to the programme, were identified by their Joint Extension Committees. Work began with a motivational session which showed the benefits of improving weed control and fertilizer application in ratoon cane. Thereafter the programme was based on a farm operations plan which identified and gave the timing of the essential management inputs required, and why they were important. The need for optimal timing of the operation was given particular emphasis.

The programme was put into practice in six new areas, namely at Maidstone (2 groups), at Gledhow, Groutville, Ndwedwe and Amatikulu, during 1982 to 1992. The extension programme was adapted for each of the target groups according to their differing local conditions.

Extension methods used during the programme included field days held on successful farms, visits to other areas and the Experiment Station, lectures and discussions, and workshops, always concluding with an evaluation exercise and follow-up action. It was an essential part of the programme to set standards for each management practice, which enabled the growers to measure their own progress. For example, weeds were rated as 1 if not visible, 2 if matchbox height, 3 if knee height; thus weeds should be controlled before they reach the height of a matchbox.

The Joint Extension Committee comprised representatives from the KwaZulu Cane Growers Association, the Financial Aid Fund, the KwaZulu Department of Agriculture, the appropriate milling company and the SASA Extension Officer for small growers who acted as the co-ordinator. A project team was formed from each Joint Extension Committee. The tasks of the project teams were to implement and evaluate the projects and instill a high level of interest and commitment in the growers. It was important to select a leader of each project and in most cases he was an elected member of the KwaZulu Cane Growers Association.

An essential feature of the programme was the preparation of a calendar of events to ensure that the husbandry practices recommended were implemented at the right time. During the programme, regular scheduled contacts with each grower group in the project were made by the project team to monitor progress according to the standards set, and to sustain interest and enthusiasm throughout the season.

The extension programme was first directed at the project team to prepare them for implementing the programme. Good rapport was established with the leaders of the target groups at an early stage to build their confidence as they were instructed on improved husbandry, organisational and leadership skills, and to help them become initiators of their own group projects. Their commitment and their understanding of small grower problems and needs were necessary to ensure the objectives were achieved.

The theme of the extension programme was sound ratoon management, but after discussions the growers requested other topics, such as cane payment and crop establishment, which were also included.

In the Maidstone group, the preparation and refinement of a grower activity chart (Table 2), using coloured pins and coloured squares to plan and record the activities greatly facilitated planning and monitoring the activities of the project groups. The adoption of the recommended practices and the significant increase in numbers of small growers carrying out more of the operations themselves, were stimulated by this procedure.

Table 2
Grower activity chart

Quota number	:
Grower's name	:
Area	:
Block No.	:
Fields to be harvested	:
Trashed/burnt	:
Fertilizer delivered	:
Fertilizer applied	:
Weeding herbicide planned	:
Weeding herbicide applied	:
Hand weeding planned	:
Hand weeding done	:

Note: 1. A coloured pin is placed in the planned situation
2. A square is coloured in when operation completed

Following a re-appraisal in 1991 of the Experiment Station's extension priorities to small cane growers, the KwaZulu Cane Growers Association requested that the Experiment Station support their initiative to strengthen the role of their middle tier Mill Cane Committees. As they represent the small growers in each mill area and are an important link in the organisation, it was appropriate to direct this extension project at these committees.

Consequently the most recent application of the extension programme was conducted with the Amatikulu Mill Cane Committee. The programme started in May 1991 and the events included 14 field days, plus lectures and visits which were enthusiastically supported. Correct application of fertilizer using the string and tin method, and effective weed control at the right stage were two of the more important practices covered, and the extent of adoption was measured.

Results

The results of the extension project were gathered during interviews with the growers and supported by data from field

observations. By using a standard questionnaire at the beginning and end of the project period, a field evaluation was conducted in which the main practices in ratoon management were assessed (Table 3).

In the most recent project with the Amatikulu group, levels of adoption of the recommended practices within the first year reached 71% for weed control and 43% for fertilizer use, representing 41% and 23% increases respectively over the control. Generally the small growers have been quick to appreciate the immediate benefits of the recommended practices with more uniform and rapid sugarcane growth being observed, and an earlier leaf canopy of the cane.

The field evaluation summary (Table 3) shows how the practices recommended for improved ratoon management have been adopted by an increased proportion of the members of all seven groups in which the extension programme was applied. The numbers increased by a mean of 40% for weed control and 47% for efficient fertilizer use. The best results were obtained in the Illovo group.

Conclusions

The next phase of this project will be to cascade a similar programme down to the next tier of the organisation: the local grower associations, and the phase after that to extend the programme down to all sub-committees, who will be expected to pass the word further down to the growers they represent. This will involve those in the upper echelons who have been trained being used as trainers for those in the lower echelons, as described in the method.

The extension programme has proved to be very effective in raising the standards of ratoon management, but the eventual success of the project can only be assessed over a longer period when the benefits can be effectively measured in increased productivity and profitability. With more growers in these groups now practising the recommended routines, crop estimates are indicating higher production levels as crop yields come closer to the industrial level of 55 tons cane per hectare per annum. For example, it has been possible to measure production in the Illovo group following the adoption of the recommended practices, where a 74% increase in production has been achieved by the project group over the control group during a ten year period, as shown in Figure 1.

Table 3

Field Evaluation Summary: adoption levels of recommended ratoon management practices - Pilot Communication Strategy in seven areas of KwaZulu

Replications pilot project	Season	Mill area	% Following recommended practices before start of project		% Adopted recommended practices		% Gain		Production performance increase %
			Weed control	Fertilizer Top-dressing	Weed control	Fertilizer Top-dressing	Weed Control	Fertilizer Top-dressing	
Mk 1	1982/83	Illovo	25	25	83	82	58	57	123
Mk 2	1984	Amatikulu	30	20	70	70	40	50	
Mk 3	1985	Gledhow	40	40	78	78	38	38	
Mk 4	1986	Groutville	60	50	90	90	30	40	
Mk 5	1987	Maidstone region	30	20	60	80	30	60	
Mk 6	1988-90	Maidstone district	55	16	90	80	40	64	63
Mk 7	1991	Amatikulu Mill Cane Committee	30	20	71	43	41	23	
Mean			39	27	77	63	40	47	

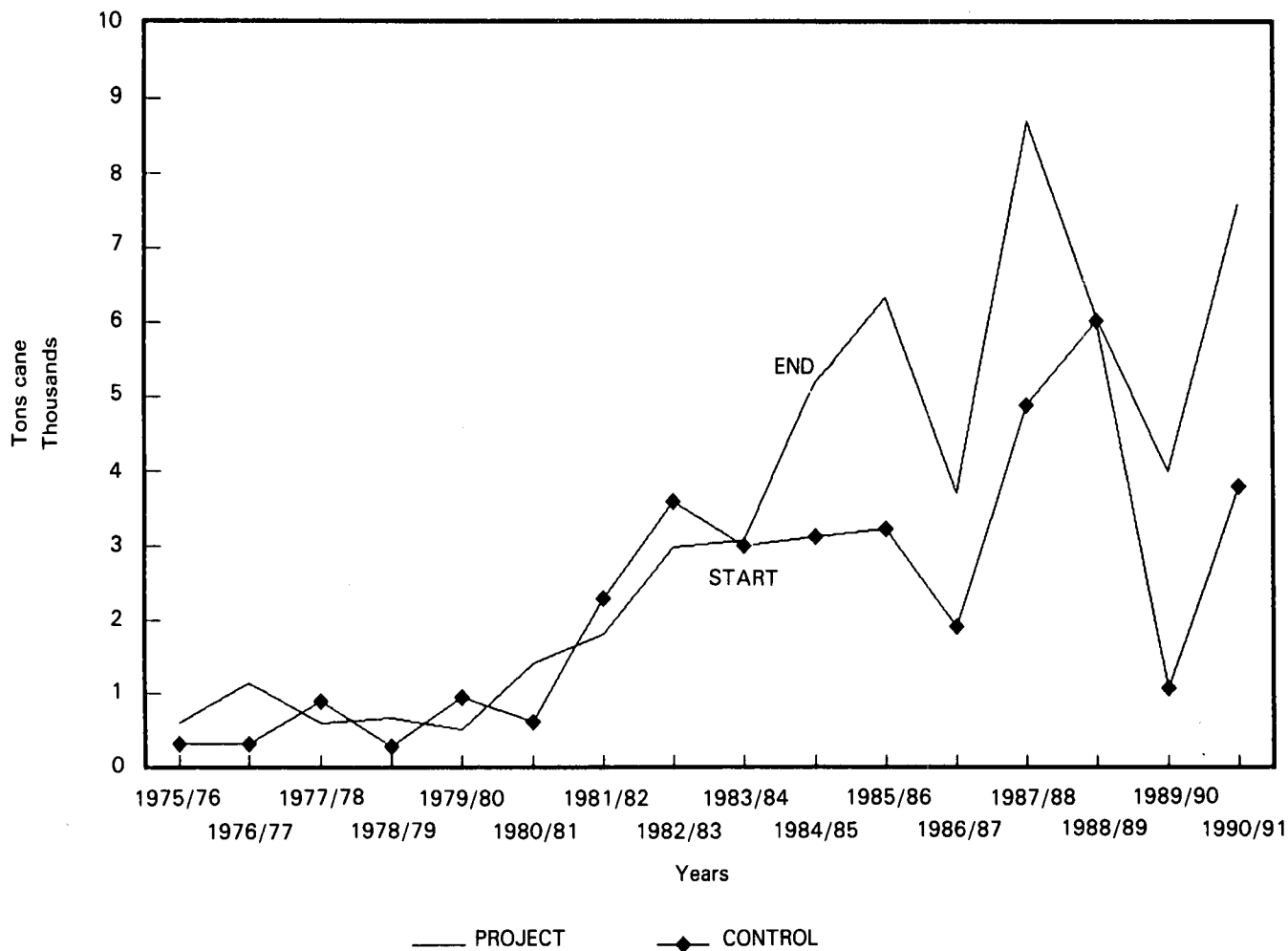


FIGURE 1 Tons of cane produced in the project and control areas from 1975-1991

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REFERENCES

Sokhela, MP and Bembridge, TJ (1991). A comparative study on the impact of small cane growing in KwaZulu. *S Afr J Agric Ext.* Vol. 20: 45-51.