



EXTENSION NEWSLETTER

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NEW EXTENSION ARRANGEMENTS AT SSATS

A Strategic Review of the Extension Department in February 2003 gave strong support for the following statement made in the Questionnaire on the Future Role of Extension Services:

'This role involves the transfer of research findings to the farmer to facilitate the quick adoption of improved agricultural practices. This is achieved by:

- *Providing an advisory service on all aspects of sugarcane husbandry.*
- *Conducting regular farm visits.*
- *Arranging group activities such as seminars, field visits etc.*
- *Publishing newsletters, reports and recommendations.*
- *Identifying sugarcane production problems.*
- *Conducting special projects to resolve production problems.*

All professional members of staff are involved in extension and this has facilitated the adoption of research findings referred to above'.

FUNCTION

The question of whether extension should be by request or design led the growers to strongly support both methods. The following matrix for regular visits over each year was decided upon. These are now being implemented.

Group	Farmer to Farmer	Extension Officer	Specialist
Miller cum Planters	Yes	4	← As Required
Experienced Planters	Yes	12	←
New Growers	Yes	24	←

Each extension officer (EO) would have his own area and growers to service. This would give accountability and help develop the mutual trust required between EO and grower. However all the EO's have to be familiar with the entire industry so that there is always backup available. The new EO's have already been on a familiarization tour of the industry.

STRUCTURE

At the Strategic Review it was felt that the sugar industry needed 5 EO's and that one of them should manage the extension department. However we currently run the department on a regional basis (North and South) with the most sen-

ior EO in each region coordinating the extension and training and reporting to the Director. This structure currently has merits for cost (travel), control, communication (particularly with the primary industry database being at Mill Group level and for access and proximity to Cane Supply Managers) and ability to spread the administration and training load.

The structure at present is as follows:

Extension Officer	Region/Area
PAT NTULI	South: Siphofaneni; Maphobeni; Madubeni; Maloma
Zonke Mabuza	Portzight; Nsoko; Lavumisa
Sibusiso Malaza	Malkerns; Sidvokodvo; Ntondozi.
Thomas Sukati	Magwanyane; Mavalela; Mndobandoba; Kamkhweli
DUMA ZWANE	North: Vuvulane; Hlane; Mpala Ranch
Sandile Ngcobo	Sihhoye; Nyakatfo; Madlangempisi; Hhohho; KDDP
Abel Nhleko	Manzana, Dvokolwako; Mliba

Note: The coordinating EO is in capitals and his area covers any grower not covered above.

TRAINING

An Annual Programme of Seminars and Training courses for 2004 is shown in the tables overleaf (**Tables 1 and 2**).

In addition to the training carried out by SSATS there are the Junior and Senior Certificate courses run by SASEX at Mt Edgecombe and also the special skills courses run on farm or at the Mtunzini Training Centre in Natal.

ISO GROWER REPORTS

Growers are also able to contact Valerie at SSATS reception or any senior member of Technical Services to register a grower report on any request, suggestion or complaint so that it can be followed up immediately. The report can be written, telephonic or verbal. Please would growers ensure that the communication is given as an ISO Grower Report.

FINAL REMINDER

Growers are free to contact Technical Services for assistance whenever it is required. Please ensure that suitable arrangements are made in cases when you are not available for one of the arranged visits. Contact Pat Ntuli (cell 6028579) and Duma Zwane (cell 6155932).

Extension Issue

Drought Fact Sheet

Specialists from SSATS and SASEX met recently to agree common recommendations for water and crop management should the drought continue, with emphasis on the next crop. A summary will be circulated to all growers in March. Also see page 4 of this issue for guidelines on how to estimate yields in droughted cane.

EXTENSION SEMINARS AND TRAINING IN 2004

As part of our new extension arrangements, SSATS will be conducting an extensive series of seminars, workshops and training courses each year. These are intended to address topical husbandry issues and are available to all growers. See [Tables 1](#) and [2](#) for a schedule of events during 2004. Make a note of the dates of seminars and courses in your area and contact your extension officer (see pages 1 and 3) for more details.

Seminars and workshops

The workshops and seminars will be facilitated by the most suitable expertise available, both from SSATS and other sectors of the industry, including suppliers of fertilizers and herbicides, cane supply managers from the mill groups, and the Swaziland Cane Growers Association. All growers are encouraged to attend.

Table 1: Programme of extension seminars and workshops for 2004

Seminar/Workshop	Venues and dates			Facilitators
	Mhlume	Ubombo	Malkerns	
Chemical ripening, harvesting, cane estimates and transportation	11/2/2004	12/2/2004	9/2/2004	Pilots, SSA Crop Agronomy and Cane Supply Managers
Irrigation scheduling, systems evaluation and irrigation and drainage	5/4/2004	6/4/2004	7/4/2004	SSA Irrigation Agronomy
Sugarcane as a business and industry structure	11/5/2004	12/5/2004	13/5/2004	SCGA
Land preparation, weed control, soil sampling and fertilizers	25/5/2004	26/5/2004	27/5/2004	SSA Crop Agronomy (soil sampling), Farm Chemicals (fertilizers) and SAS (weed control)
Pest and disease regulations and varieties	8/6/2004	9/6/2004	10/6/2004	SSA Pest and Diseases Department
Farm visits/Field day	Dates and venues to be announced			

Training courses

Training courses are intended for farmers on a practical level, and will be run on a similar basis to arrangements in previous years. Contact your extension officer for further details.

Table 2: Programme of training courses for 2004

Course	Venues and dates			
	VIF	Mhlume	Ubombo	Malkerns
Harvesting and cane quality	8/3/2004	9/3/2004	10/3/2004	11/3/2004
Fertilizer Application	13/4/2004	14/4/2004	15/4/2004	16/4/2004
Planting and ratoon management	3/5/2004	4/5/2004	5/5/2004	6/5/2004
Applied business management	21/6/2004	22/6/2004	23/6/2004	24/6/2004
Weed control	5/7/2004	6/7/2004	7/7/2004	8/7/2004
Introduction to soil	2/8/2004	3/8/2004	4/8/2004	5/8/2004
Irrigation	30/8/2004	31/8/2004	1/9/2004	2/9/2004
Pump maintenance	Dates to be confirmed with SASEX			
Tractor maintenance		18/2/2005	19/2/2005	20/2/2005
Record keeping and budgeting	Dates to be announced in due course after consultation with facilitators as quotations from Lulote, Lowveld Business Services and Lwati Training Institute are still going to be sought. The course will be held on 1 - 5/3/2005 at L.F.T.C in Big Bend.			

MEET YOUR EXTENSION OFFICER

The extension team at SSATS has expanded to include five extension officers employed by SSA and two government extension officers who will be working in close co-operation with the SSA team. Here they all are:

Southern Area

Pat Ntuli is well known to most growers, having been SSA's only extension officer between 1996 and the present day. He joined SSA in 1984 as a pest and disease supervisor, became pest and disease officer in 1989 and eventually moved into extension. His experience is backed up by a diploma in general agriculture and a senior certificate in sugarcane husbandry from SASEX. Pat is the coordinating extension officer for the southern region with specific responsibility for the Siphofaneni, Maphobeni, Madubeni and Maloma areas. He is based at Big Bend.

Zonke Mabuza joined the new SSA extension team in January 2004. He was previously at Crookes Plantations, where he started as a trainee in 1999 and rose to the level of section manager. He has a BSc in Agricultural Economics and Management from UNISWA and a senior certificate in sugarcane husbandry from SASEX. Zonke will be providing extension to the Portzicht, Nsoko and Lavumisa areas.



Figure 1: Government extension officers Thomas Sukati (top) and Abel Nhleko (bottom)

Sibusiso Malaza joined SSA from Ubombo Sugar in January 2004. He started his career as a teacher (maths and science) but entered the sugar industry as a supervisor in the fields department at Ubombo in 1992. He was promoted to section manager in 1995. In 1997 he was awarded an SSA scholarship to pursue his BSc Agriculture at UNISWA. Sibusiso will be providing extension to growers in the Malkerns, Sidvokodvo and Ntondozi areas.

Thomas Sukati is the government extension officer assigned to the southern region. He has worked as an extension officer for 26 years, the last ten of which have been specifically in sugarcane. He holds a diploma in agriculture and a senior certificate in sugarcane husbandry from SASEX. Thomas will be providing extension to the Magwanyane, Mavalela, Mndobandoba and Kamkhweli areas.

Northern Area

Duma Zwane is also well known to most growers, having been with SSA since 1991. He worked as assistant research agronomist at the Simunye office until he moved to extension in July 2003. Duma holds a BSc in Agriculture and an MSc in crop science, both from UNISWA, and a senior certificate in sugarcane husbandry from SASEX. Duma is the coordinating extension officer for the northern region with specific responsibility for the Vuvulane, Hlane and Mpala Ranch areas. He is based at Simunye.

Sandile Ngcobo joined the SSA extension team in January 2004. He joined the sugar industry in 1998 as a section supervisor at Ubombo Sugar and has a BSc in Agricultural Education from UNISWA and a senior certificate in sugarcane husbandry from SASEX. Sandile will be providing extension to the Sihhoye, Nyakato, Madlangempisi, Hhohho and KDDP areas.

Abel Nhleko is the government extension officer assigned to the northern region. He was originally a pest and disease inspector with SSA but left to join the government extension service in 1989. He has worked specifically as a sugarcane extension officer since 1995. Abel holds a certificate in agriculture from UNISWA and a junior certificate in sugarcane husbandry from SASEX. He will be providing extension to the Manzana, Dvokolwako and Mliba areas.



Figure 2: SSA extension officers (from left): Sibusiso Malaza, Sandile Ngcobo, Duma Zwane, Zonke Mabuza and Pat Ntuli.

ESTIMATING DROUGHTED CANE YIELDS

We are all aware that the current drought will have a significant impact on the 2004/05 crop. This effect will be more severe in some areas than others. The Nsoko area appears to have been the worst affected. At Ubombo the Usutu river began flowing at the end of December and stress conditions were alleviated to an extent. In the North dam levels remain critical despite good falls of rain in the lowveld during early January.

Growers are obviously concerned about the effect of reduced water supply on yield and are on the look-out for tools to enable them to better estimate yields this season. The purpose of this article is to present a simple set of tables which the grower can customize to his/her water supply situation to determine the effect of water stress on yield.

The effect of climate

Ignoring the drought for a moment, conditions for yield accumulation during the crucial summer growing season have been above average at all three lowveld sites. Potential yields estimated with the CANEGRO growth model for the 2004/05 season are higher than those estimated for the 2003/04 season at both Ubombo and Simunye, while yields at Mhlume are similar to those simulated for last season. A comparison with yields recorded in previous seasons should give growers a starting point from which to factor in the effects of water stress.

The effects of water stress

The effects of water stress have the greatest impact on yield during summer when potential growth is at a maximum. In addition the age at which the stress occurs influences the severity of the effect. The CANEGRO crop model was used to estimate the potential growth accumulated in each calendar month by a range of crops harvested throughout the milling season. The results, expressed as a percentage of the total cane yield accumulated in each calendar month, are presented in [Table 3](#). This is an average of all crop ages and represents the percentage yield accumulated for the 2004/05 harvest season only, assuming NO water stress.

Table 3: Percentage cane yield accumulated in each calendar month for the 2004/05 harvest season (mean of all crop ages)

	2003										2004										Total	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		Dec
% growth	0.0	0.0	0.0	0.1	0.6	1.6	3.2	6.3	11.5	14.8	14.3	14.0	9.4	5.7	3.5	3.4	4.0	3.5	2.7	1.4	0.0	100

For example, if you were expecting an average cane yield of 100t/ha in 2004/05, 1.6% of the yield would be accumulated during September, 3.2% during October and so on. The bulk of the yield is accumulated during the December to March summer months.

The effect of water stress on yield can be "factored in" by estimating the severity of water supply restrictions expressed as a fraction of potential growth affected in each calendar month. In consultation with each of the major estates we have attempted to estimate this stress fraction ([Table 4](#)). Bear in mind that this is a very average situation and growers are advised to use their own estimates of stress when estimating yields for their own farms/estates.

Table 4: An estimate of stress (% of the month affected), the actual growth rate = 100 - % stress (% act. Growth) and yield accumulated by month assuming a base yield of 100 t/ha (unstressed estimate) assuming stress is alleviated from mid-January onwards.

	2003										2004										Total	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		Dec
% growth	0.0	0.0	0.0	0.1	0.6	1.6	3.2	6.3	11.5	14.8	14.3	14.0	9.4	5.7	3.5	3.4	4.0	3.5	2.7	1.4	0.0	100
% stress	13	13	13	17	20	23	27	33	50	27	0	0	0	0	0	0	0	0	0	0	0	-
% act growth	87	87	87	83	80	77	73	67	50	73	100	100	100	100	100	100	100	100	100	100	100	-
Tc/ha @ 100 t/ha	0	0	0	0	0	1	2	4	6	11	14	14	9	6	4	3	4	4	3	1	0	86

For example, in September 2003, 23% of the potential growth for the month was lost due to stress. The difference (100 - 23) = 77% represents that fraction of the month unaffected by stress. During September the 2004/05 crop only accumulated 1.6% of its yield = 1 t/ha. In December on the other hand, half of the potential growth for the month was lost. 11.5% of the 2004/05 crop is normally accumulated during this month, assuming a normal 100 t/ha crop, the month of December contributed 6 t/ha to the 2004/05 yield estimate.

In the example above we have assumed that normal conditions prevail for the remainder of 2004. This is unlikely and growers are encouraged to review their estimates as conditions change during the months ahead.

For further information or help with this tool contact your extension officer (for details see elsewhere in this newsletter) or the SSA Technical Services office at Simunye, tel 3838998.