

REFEREED PAPER

## EIGHTY-NINTH ANNUAL REVIEW OF THE MILLING SEASON IN SOUTHERN AFRICA (2013/14)

SMITH GT, DAVIS SB, MADHO S and ACHARY M

*Sugar Milling Research Institute NPC, c/o University of KwaZulu-Natal, Durban, 4041, South Africa  
gsmith@smri.org sdavis@smri.org smadho@smri.org sachary@smri.org*

### Abstract

Performance, throughput and other relevant aspects of the sugar industries in southern Africa for the 2013/14 milling season are presented and discussed. Data from sugar mills in South Africa, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe are included.

The 2013/14 season in South Africa was better than the poor 2012/13 season in terms of tons of cane harvested, which increased to over 20 million tons. Cane quality also improved from the previous season. The Overall Time Efficiency improved as a result of a marked decrease in no-cane stops and a slight drop in Lost Time % Available. The Overall and Boiling House Recoveries also improved from 2012/13, but these were mainly as a result of improved cane quality. Although improvements to extraction and losses to molasses were made from the previous season, the Undetermined Loss increased. Despite the general improvements in the 2013/14 season, the sucrose recoveries achieved still differ substantially from ten year high values.

Regarding the Sugar Milling Research Institute NPC Affiliate Member mills in neighbouring countries, recoveries were generally better than in 2012/13.

*Keywords:* sugarcane, sugar factories, cane quality, crop size, performance, recovery

### Introduction

This paper reviews the 2013/14 milling season in southern Africa and includes data from mills in South Africa, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe, that are Full (South African) or Affiliate (non-South African) Members of the Sugar Milling Research Institute NPC (SMRI)<sup>1</sup>. Detailed information on factory performance in 2013/14 and recent seasons, details of cane varieties crushed and a summary of cane transport used in South Africa are presented in Tables A to H in the Appendix.

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<sup>1</sup>South African sugar factories: AK = Amatikulu, DL = Darnall, ES = Eston, FX = Felixton, GH = Gledhow, KM = Komati, ML = Malalane, MS = Maidstone, NB = Noodsberg, PG = Pongola, SZ = Sezela, UC = UCL, UF = Umfolozi, UK = Umzimkulu  
Malawi sugar factories: DW = Dwangwa, NH = Nchalo  
Mozambique sugar factories: MA = Maragra, MB = Mafambisse, XN = Xinavane  
Swaziland sugar factories: MH = Mhlume, SM = Simunye, UB = Ubombo  
Tanzania sugar factories: MW = Msolwa (Kilombero), RU = Ruembe (Kilombero)  
Zambia sugar factory: NK = Nakambala  
Zimbabwe sugar factories: HV = Hippo Valley, TR = Triangle.

## Cane crop

### *Cane varieties*

The varietal distribution at southern African mills for the 2013/14 season is shown in Appendix Table F. There were only small varietal changes in South Africa since the 2012/13 season. The main change was a further decrease in percentage of N12 on the South Coast. The percentages of N39 and N41 increased at a number of mills, particularly in the North Coast and Zululand regions. The Affiliated mills in the 2013/14 season saw similar varietal distribution to 2012/13 with the exception of MB where large decreases in N14, N27 and N32 were balanced by increases in N19 and N21. The 2012/13 data can be found in the 2013 Annual Review (Smith *et al.*, 2013).

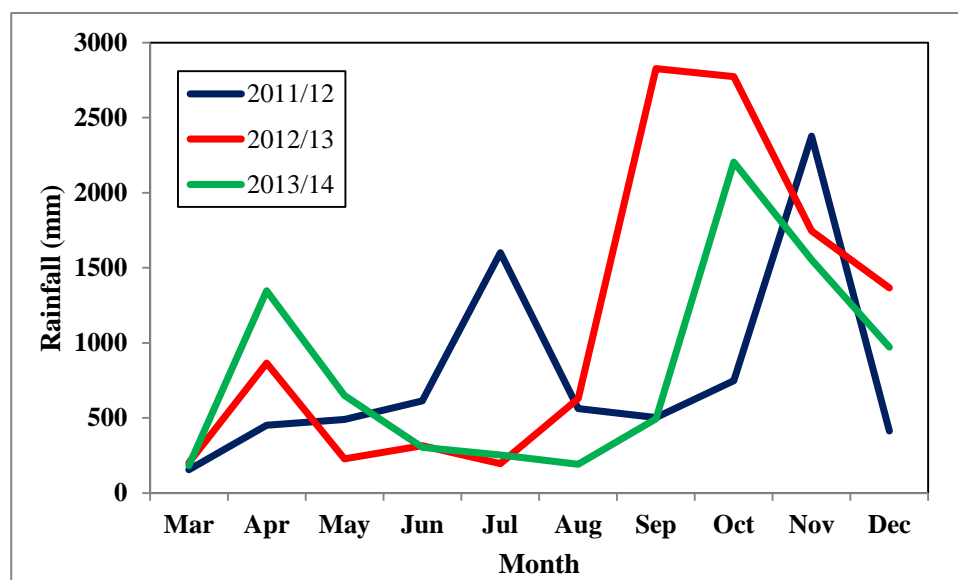
Although the percentages of unknown and mixed varieties delivered have decreased, they are still fairly high, so any trends should be viewed with some caution.

### *Burning*

The overall percentage of cane burnt in South Africa remained relatively unchanged at 91% (Appendix Table F), against 91.7% in 2012/13 and 91.2% in 2011/12.

### *Rainfall*

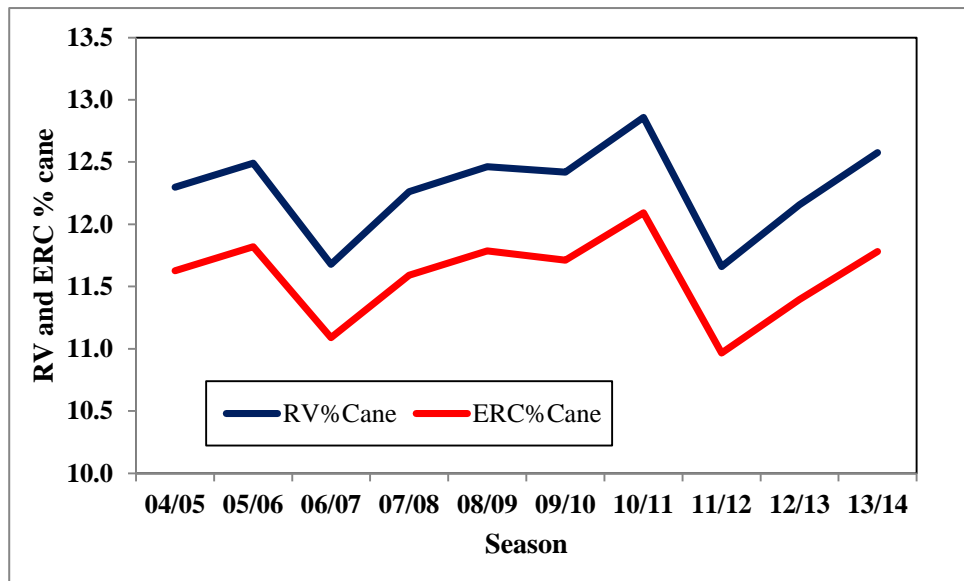
The industry rainfall followed a normal pattern with a relatively dry winter and wet summer (Figure 1). Total rainfall for the season was 8 065 mm, compared to 11 143 mm in 2012/13 when heavy falls occurred in September and October. The total rainfall recorded at individual South African mills during the crushing season ranged from 368 mm at KM to 891 mm at AK (Appendix Table F). Only three mills (AK, SZ and UK) recorded higher than 700 mm rainfall in 2013/14, compared to six in 2012/13.



**Figure 1. Monthly total rainfall at crushing South African mills for the 2011/12 to 2013/14 seasons (values are the monthly rainfalls summed over all mills crushing during the month).**

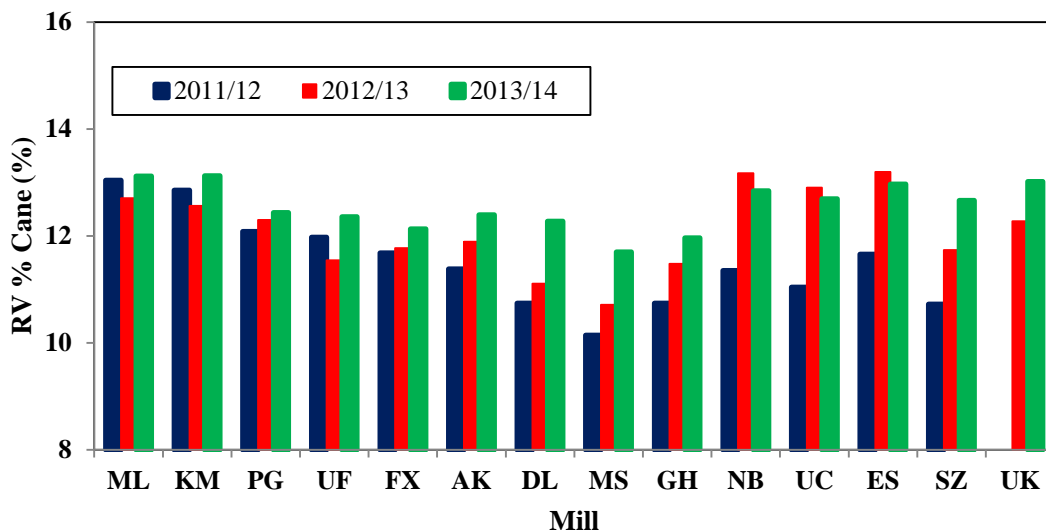
*Cane quality*

The trends in the cane quality indicators of Recoverable Value (RV) % cane and Estimated Recoverable Crystal (ERC) % cane over the past ten seasons in South Africa are shown in Figure 2. Both parameters increased for a second season from the record low values of 2011/12.



**Figure 2. Recoverable Value (RV) % cane and Estimated Recoverable Crystal (ERC) % cane in South Africa for the past ten seasons.**

Figure 3 shows the RV % cane at the mills for the past three seasons. The 2013/14 season saw an increase in RV in all areas except the Midlands (NB, UC and ES). The largest increases were seen at the North (DL, MS and GH) and South Coast (SZ and UK) mills. Although RV % cane decreased at the Midlands mills, the values recorded were still well above those recorded in the 2011/12 season.



**Figure 3. Recoverable Value (RV) % Cane at South African mills from 2011/12 to 2013/14.**

The monthly RV % cane for the past three seasons in South Africa (Figure 4) indicates that,

although the cane quality during the 2013/14 season started off slightly below the 2012/13 values, the quality remained higher for longer than in previous seasons and was well above the previous two seasons for the last four months of the season.

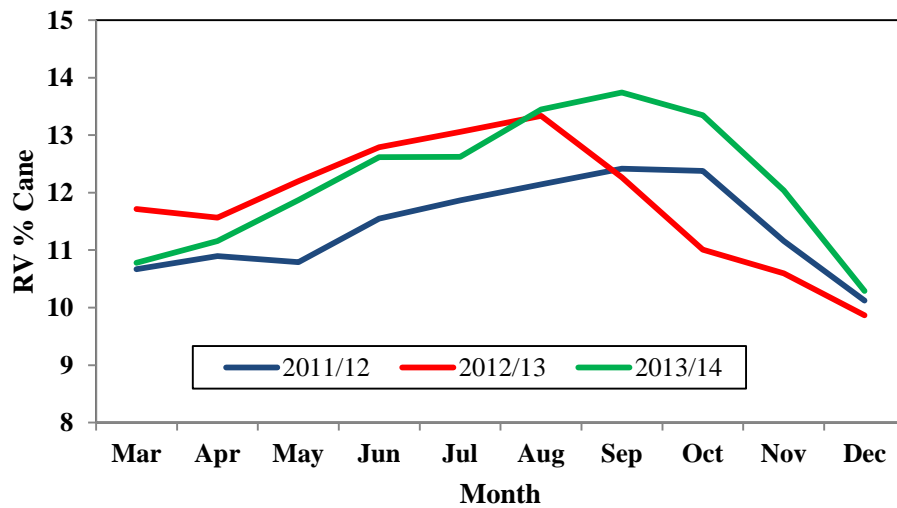


Figure 4. Monthly Recoverable Value (RV) % cane in South Africa for the 2011/12 to 2013/14 seasons

Considering the whole region, changes in cane quality in terms of ERC % cane (Figure 5) from 2012/13 to 2013/14 showed mixed trends in the countries under review. South Africa, Zimbabwe, Zambia and Tanzania recorded improvements and there was little change in the other countries (Swaziland, Malawi and Mozambique).

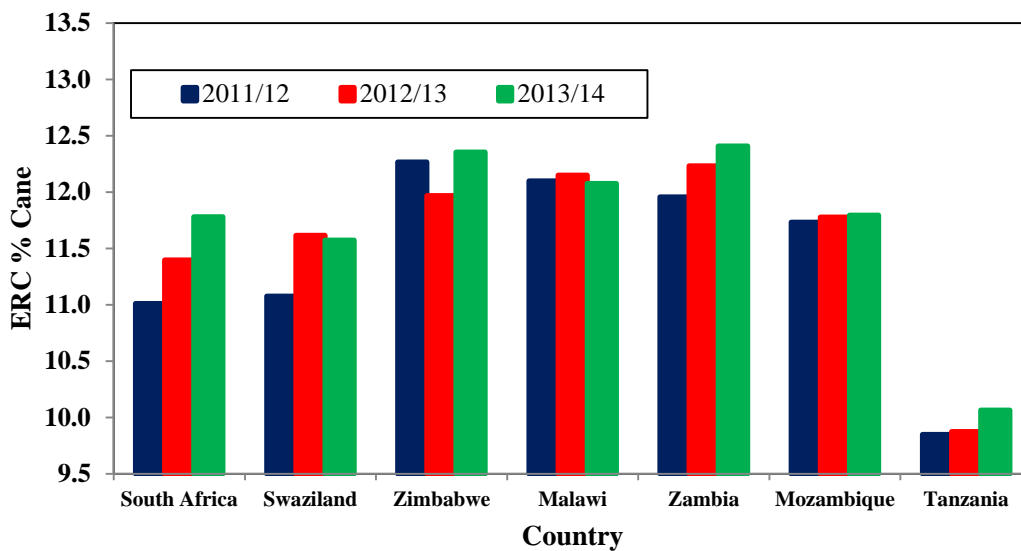


Figure 5. Estimated Recoverable Crystal (ERC) % cane in southern Africa from 2011/12 to 2013/14.

Looking at other parameters included in cane quality, Ash % Cane decreased from the record high for the SA industry recorded in 2012/13 (Figure 6), and was below the ten-year average of 1.87%. This reversed the concerning trend of the previous two seasons, as ash can have substantial cost implications for the milling industry. Figure 6 indicates that the ash entering the factories tracks the annual rainfall. This is most likely a result of sand entering the factory from wet fields.

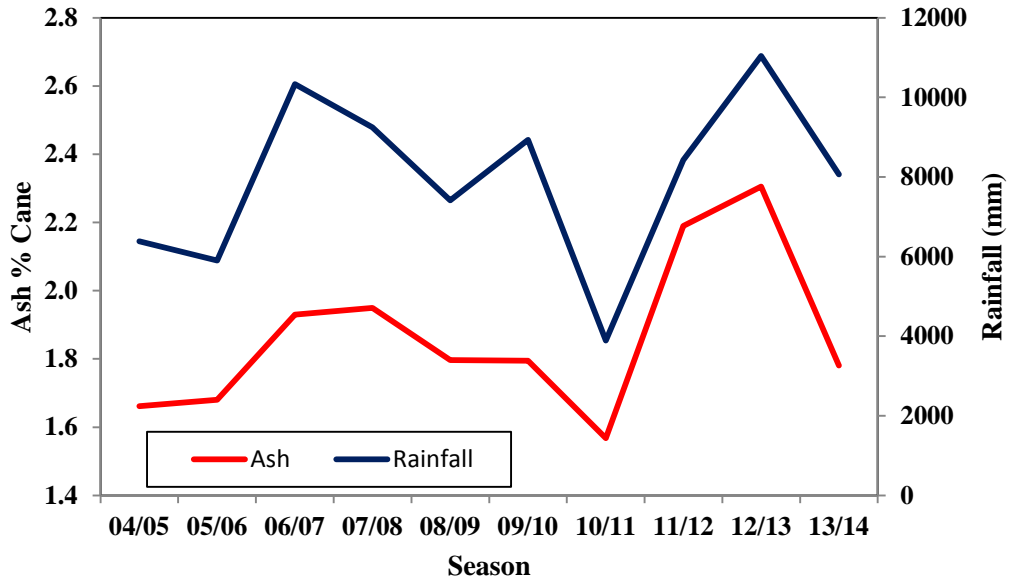


Figure 6. Ash % cane and season rainfall in South Africa for the past ten seasons.

As might be expected from the improved cane quality, the mixed juice sucrose purity showed an increase from 2012/13 to 2013/14 to an average value of 86.91% for South Africa (Figure 7), the highest since the 2002/03 season.

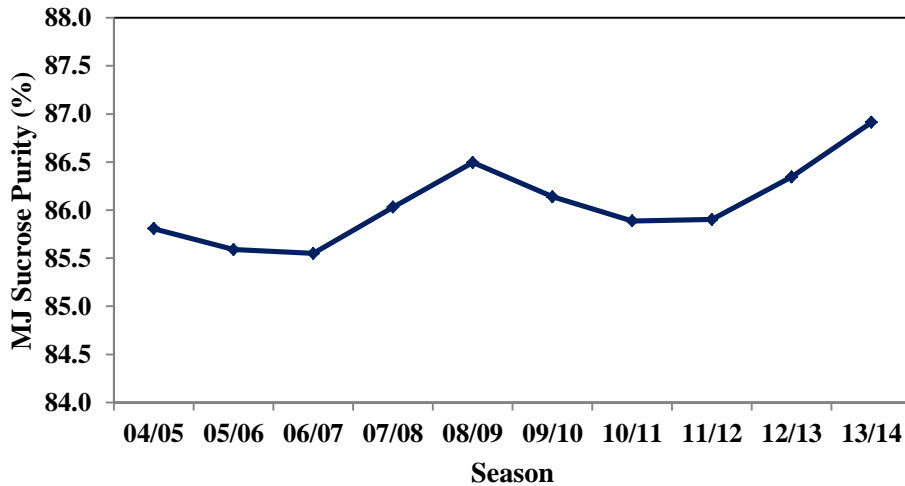
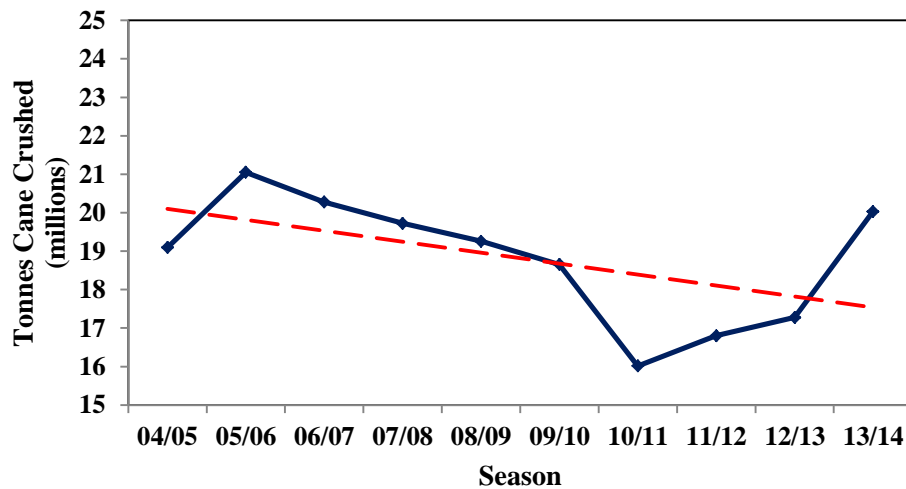


Figure 7. Mixed juice sucrose purity in South Africa for the past ten seasons.

### Cane tonnage

The final tonnage of cane crushed during 2012/13 was 20.03 million tons, which was 2.75 million tons, or 15.9%, more than the previous season (Figure 8). The tonnage is still 3.84 million tons (16.1%) less than the high of 2000/01 when 23.87 million tons was crushed. The reasons for the changing sugarcane supply are dealt with in more detail in the agricultural Annual Review by Singels *et al.* (2014).



**Figure 8. Tons of cane crushed in South Africa for the past ten seasons (with linear trendline).**

## Factory Performance

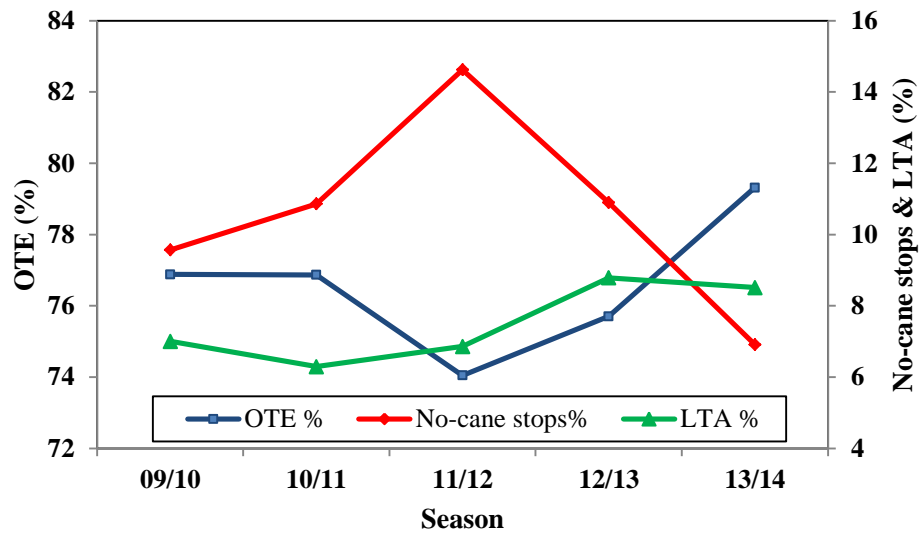
### Length of milling season

The 2013/14 season in South Africa ran from 6 March 2013 (PG) until 22 December 2013 (ML). The average length of the season was 254 days, the same as the previous season, despite the increase in cane crushed. The main reasons for this are an improved time efficiency at 13 mills and an improved crush rate at 12 mills.

PG had the longest season of 289 days, with DL having the shortest of 219 days. Five South African mills had longer seasons than in 2012/13. The lengths of the milling seasons in other southern African countries ranged from 158 days at MA in Mozambique to 285 days at RU in Tanzania.

### Time efficiencies

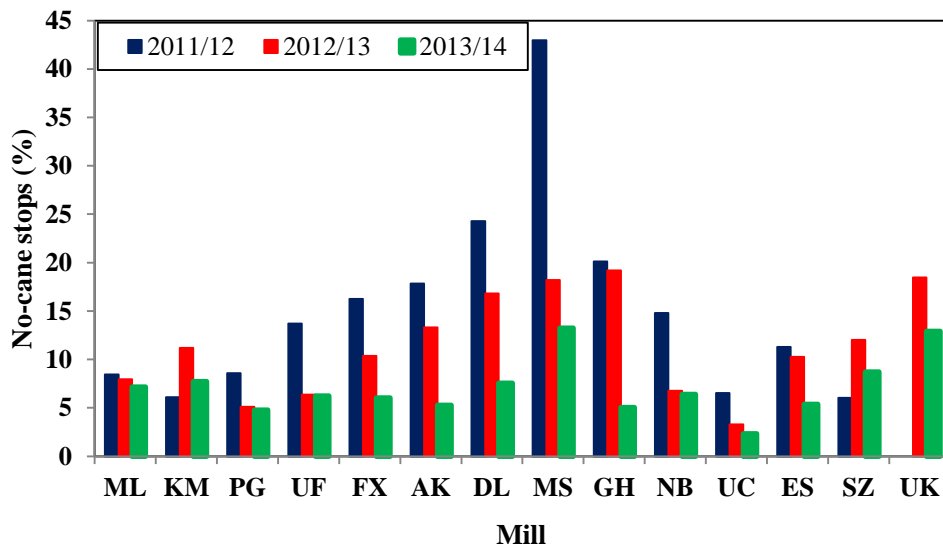
The time efficiencies for South Africa for the past five seasons are shown in Figure 9. Overall Time Efficiency (OTE) increased markedly to 79.31%, the highest since 2005/06. The increase was mainly due to a marked drop of 3.99 percentage points in No-cane Stops and a slight decrease of 0.27 percentage points in Lost Time % Available (LTA). Hours for Force Majeure decreased from 3 023 hours in 2012/13, mainly as a result of industrial action outside the millers' control, to 217 hours in 2013/14.



**Figure 9. Overall Time Efficiency (OTE), Lost Time Available (LTA) and No-cane stops in South Africa from 2009/10 to 2013/14.**

Thirteen of the 14 mills showed an improvement in OTE, mainly as a result of improved No-cane Stops. Nine of these mills also recorded lower LTAs than in 2012/13.

All 14 mills showed an improvement in No-cane stops over the previous season (Figure 10). The greatest improvement was at GH, where the No-cane Stops were less than half of the previous season’s value. Although MS recorded another decrease in No-cane stops, the mill still recorded the highest value in the industry for 2013/14. The industry only moved above the 10% mark in No-cane stops for the rainy periods in April and from October to December.



**Figure 10. No-cane stops at South African mills from 2011/12 to 2013/14**

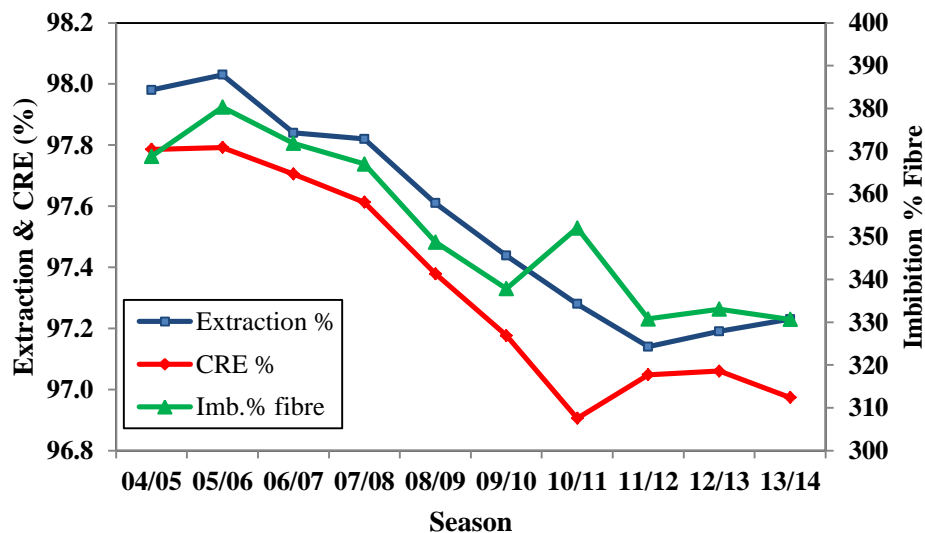
Of all the mills in the other southern African countries, only DW, TR, MA and NK recorded OTEs lower than the South African industry average. Three mills, namely TR, RU and MB, recorded LTA values above 10%, while MH, HV, MW and MB recorded No-cane stops above 10%.

### Extraction

Figure 11 shows that, for the 2013/14 season, extraction increased slightly despite a lower imbibition % fibre in bagasse. The Corrected Reduced Extraction (CRE) value in 2013/14 was, however, lower than in the preceding season. The decrease in CRE value, which takes variations in cane quality into account, suggests that for the past season the slight increase in extraction achieved was due to improved cane quality and should have been even better.

The extraction for the past three seasons (97.14, 97.19 and 97.23% for 2011/12, 2012/13 and 2013/14, respectively) remained the lowest achieved in the South African sugar industry since the 1983/84 season when a value of 97.02% was recorded.

The imbibition % fibre in bagasse is still around its ten year low at 331%, substantially less than the 380% used in 2005/06. This is to be expected with the focus firmly on energy management.



**Figure 11. Extraction, Corrected Reduced Extraction (CRE) and Imbibition % Fibre in South Africa for the past ten seasons.**

The extraction values for individual South African factories for the 2012/13 and 2013/14 seasons are shown in Figure 12. It can be seen that, despite the industry's average extraction not changing much between these two seasons, there were several changes in extraction performance at the individual mills. ML, FX, MS, UC and UK all recorded improvements of above 0.2%. However, these increases were offset by PG, DL, GH and SZ, where extraction dropped by more than 0.2% from the last season. Felixton was once again the only South African sugar mill with an extraction of over 98%, and this came with a reduced imbibition % fibre in bagasse usage of 334%, compared to 369% in 2012/13.

In the 2013/14 season, six factories (ML, KM, FX, AK, MS and UK) routed clarifier mud back to the diffusers throughout the entire season, while PG operated with partial recycling.



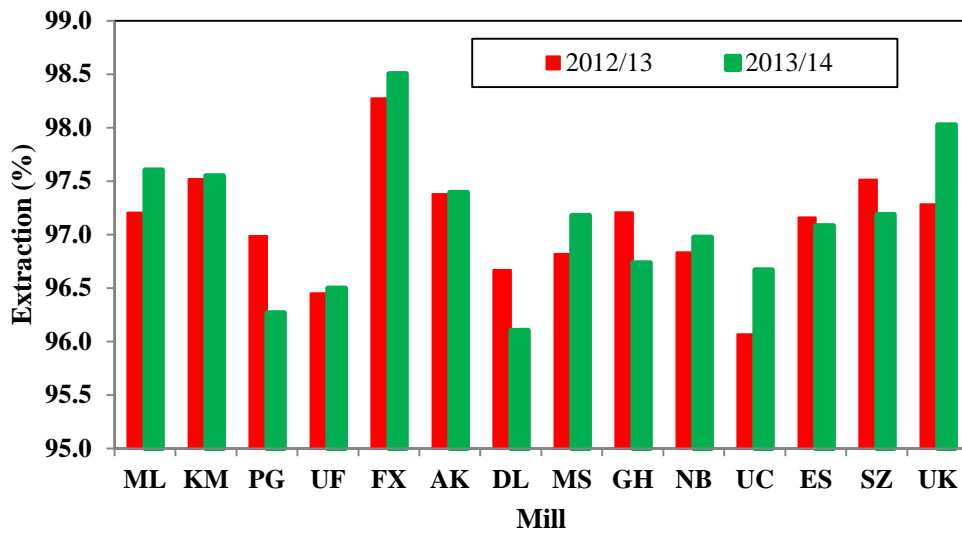


Figure 12. Extraction at South African mills for the 2012/13 and 2013/14 seasons.

Among the Affiliated mills in 2013/14, pol-based extraction increased from the 2012/13 season by more than 0.2% at HV, MW, MA, XN and NK, whilst decreases of more than 0.2% were seen at SM and RU (Figure 13). The increase at MW was the most noticeable with an extraction of 93.71% in 2013/14, up from 92.76% in the preceding season.

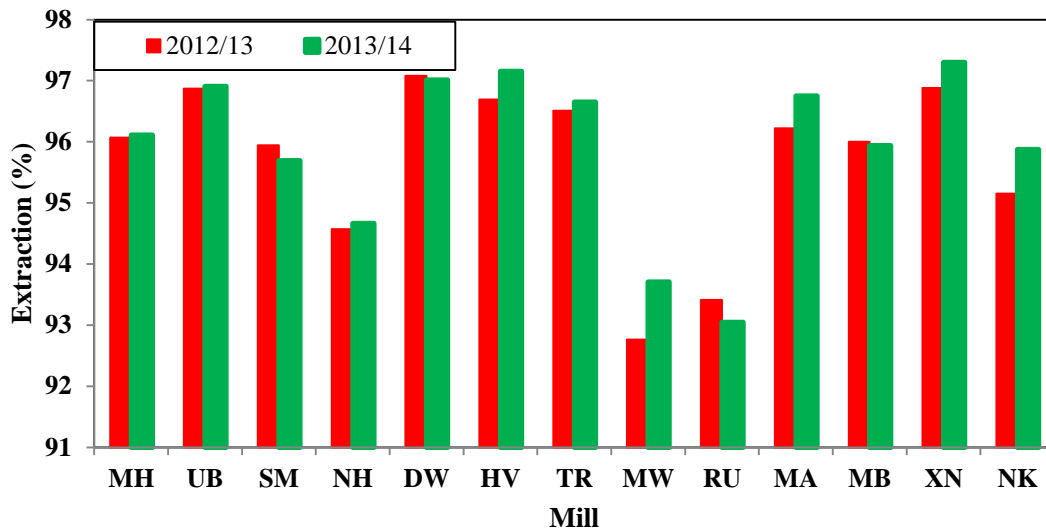
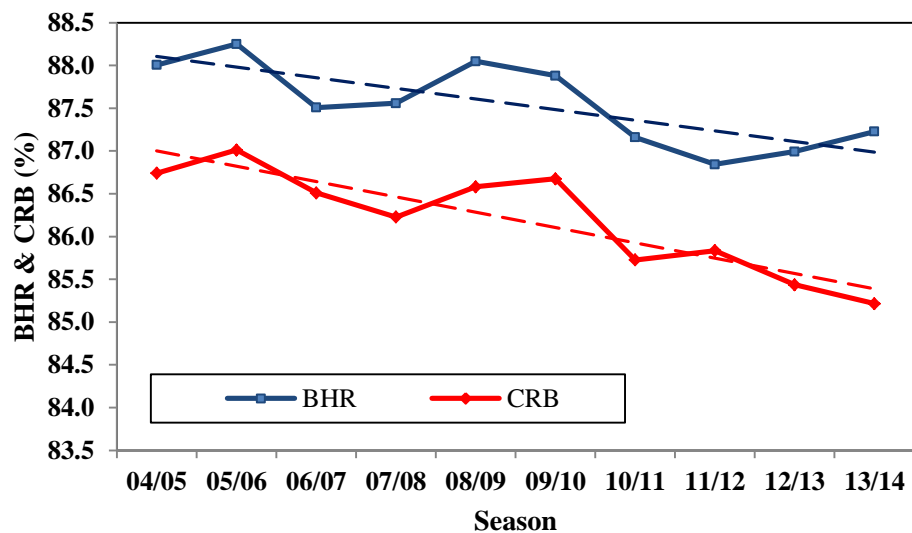


Figure 13. Pol-based Extraction at southern African mills for the 2012/13 and 2013/14 seasons.

*Boiling house performance*

Figure 14 shows the Boiling House Recovery (BHR) and Corrected Reduced BHR (CRB) for South African mills over the past ten seasons. The CRB continued its downward trend to its lowest value of 85.22%, indicating higher factory losses than in previous years. There was an improvement in the BHR in 2013/14, to 87.23% from the ten year low of 86.64% in 2011/12. However, the declining CRB suggests that the BHR improvement may have been as a result of the increased mixed juice sucrose purity (see Figure 7) rather than that of improved factory performance.



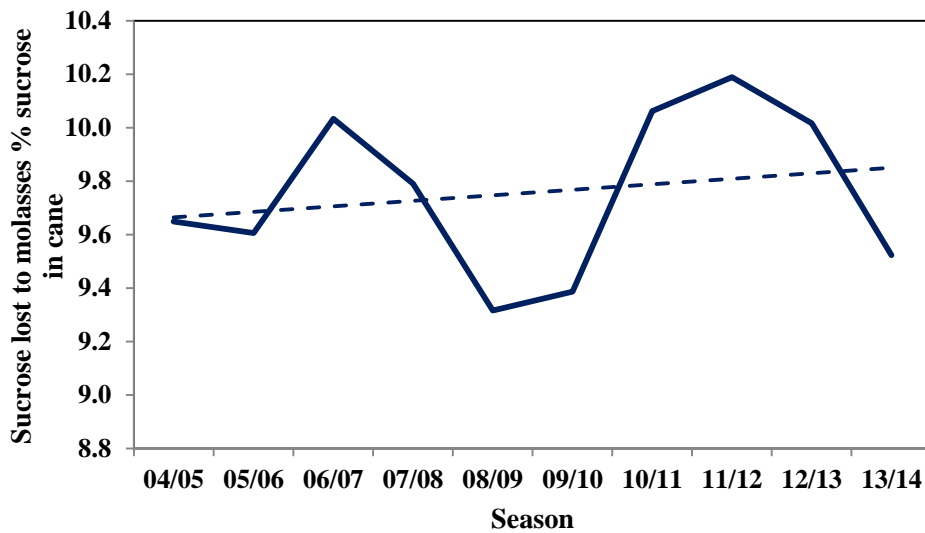
**Figure 14. Boiling House Recovery (BHR) and Corrected Reduced BHR (CRB) in South Africa for the past ten seasons (with linear trendlines).**

Table 1 gives the BHR, CRB and mixed juice sucrose purities for the 2005/06 and 2013/14 seasons. The former was chosen for comparison against the past season as this is when the highest BHR in the past ten seasons was achieved. It can be seen from Table 1 that the BHR for the past season is just over 1% lower than the ten year high value despite the mixed juice sucrose purity being 1.32% higher, resulting in the CRB for 2013/14 being 1.79% lower. This is mentioned to exemplify that, although the BHR has been increasing for the past two seasons, there is still much improvement needed to match the ten year high.

**Table 1. Boiling House Recovery (BHR), Corrected Reduced BHR (CRB) and sucrose purities for the 2005/06 and 2013/14 seasons.**

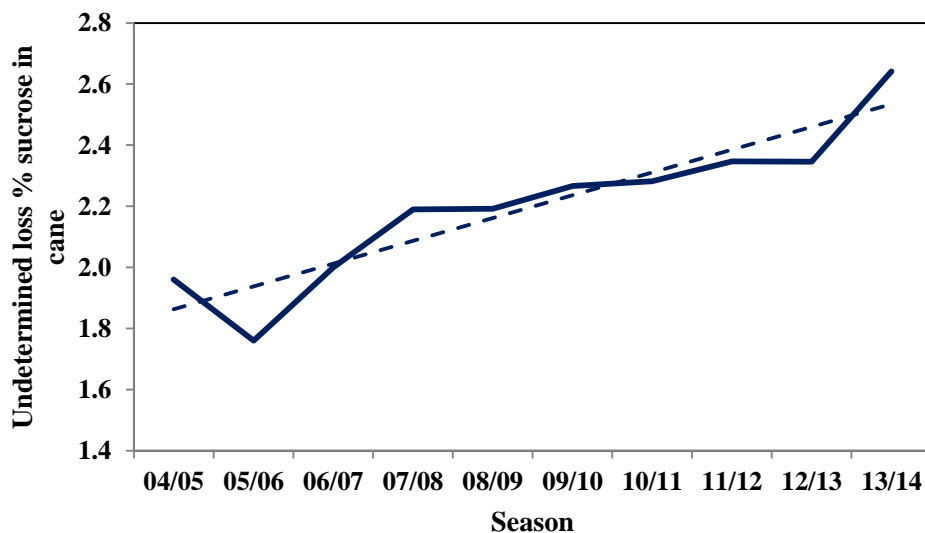
Season	2005/06	2013/14
BHR (%)	88.25	87.23
CRB (%)	87.01	85.22
Mixed juice sucrose purity (%)	85.59	86.91

Another contributor to the improvement in BHR would be the decrease in the overall loss of sucrose to molasses as a percentage of sucrose in cane (Figure 15). This reduced from a ten year high in 2011/12 of 10.19% to 10.02% in 2012/13, and now to 9.52% in 2013/14. The ten year low loss to molasses was recorded in 2008/09 with sucrose lost to molasses % sucrose in cane at 9.32% and suggests that considerable efforts were made in the past season to reduce molasses losses and approach the ten year low value. The average Target Purity Difference (TPD) for the South African mills also reflects a decrease in the loss to molasses with a decrease from 6.1% in 2012/13 to 5.6% in 2013/14 (based on molasses).



**Figure 15. Sucrose loss to molasses in South Africa for the past ten seasons (with linear trendline).**

Given the lower molasses losses, it follows that the reduced CRB obtained in 2013/14 can be accounted for by the rise in the Undetermined Loss % sucrose in cane (UDL) (Figure 16), which rose from 2.35% in 2012/13 to 2.64% in the past season – thereby substantially increasing to an undesirable ten year high. Mills understandably want to keep this figure as low as possible but as a rule of thumb any UDL over 2.00% is considered high. The South African industry has not been able to achieve this benchmark since the 2006/07 season.



**Figure 16. Undetermined Loss (UDL) % sucrose in cane in South Africa for the past ten seasons (with linear trendline).**

Figure 17, which compares individual South African mill UDLs for the past two seasons, shows that the increase in industry average UDL can mainly be attributed to increases to 3.55% and 4.85% from 1.26% and 2.93%, respectively, at the ML and NB mills. Both of these factories are back-end refinery mills and discussions with the mills revealed that this may be contributing to the UDLs recorded. Both factories use a process house approach to account for back-end refineries, in which a fixed refining loss is assumed. Therefore, if the actual refining losses were higher than the assumed value, this would reflect in an increase in

raw house undetermined losses. MS and PG also recorded UDLs of over 3% whilst KM, FX, UC, SZ and UK are to be commended for keeping their UDLs below the 2% benchmark.

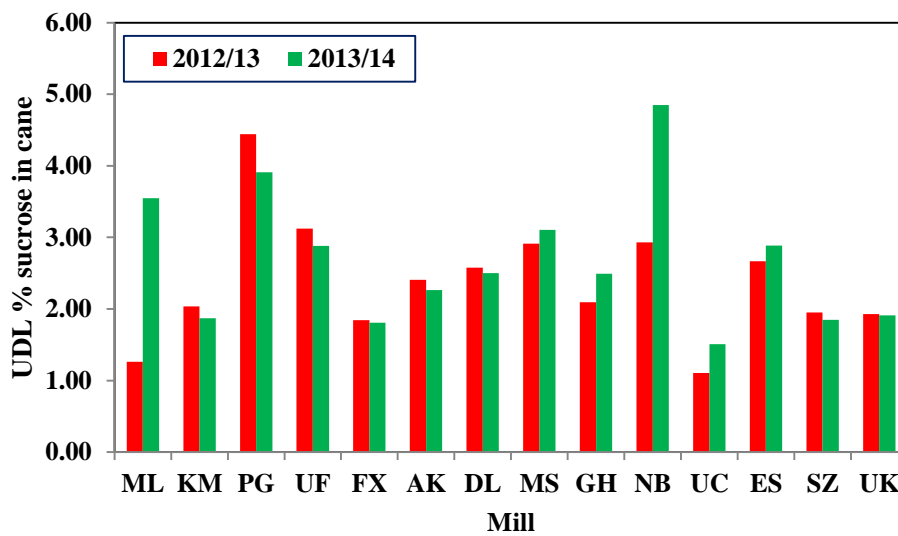


Figure 17. Undetermined Loss (UDL) % sucrose in cane at South African mills for 2012/13 and 2013/14 seasons.

An area in the back-end of the factory also requiring some improvement is the A-station, where the South African mills averaged 62.45% in exhaustion for the 2013/14 season. A low A-exhaustion results in increased physical and chemical losses across all crystallisation stations and also creates higher loadings for the low purity operations. Only the UK and DL mills posted A-exhaustions of above 66% with figures of 67.34% and 66.24%, respectively.

Among the Affiliate mills, only NH and RU showed a pol-based BHR substantially below 86%, with both mills decreasing their BHRs from the previous season (Figure 18). MH, SM, DW, HV, MA, MB, XN and NK all posted BHRs of 88% and above. Substantial improvements to BHR were made at the UB, HV, MA and XN mills.

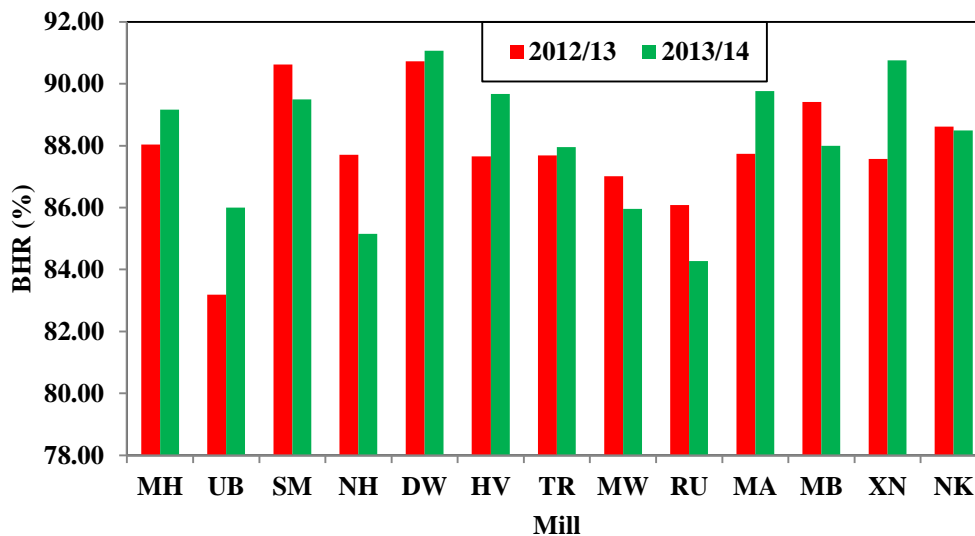
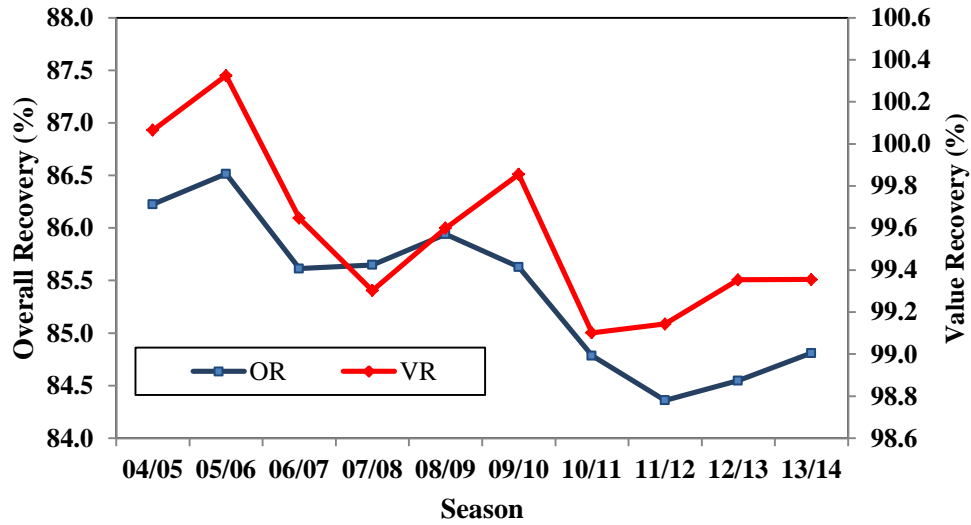


Figure 18. Pol-based Boiling House Recovery (BHR) at southern African mills for 2012/13 and 2013/14 seasons

*Overall recovery parameters*

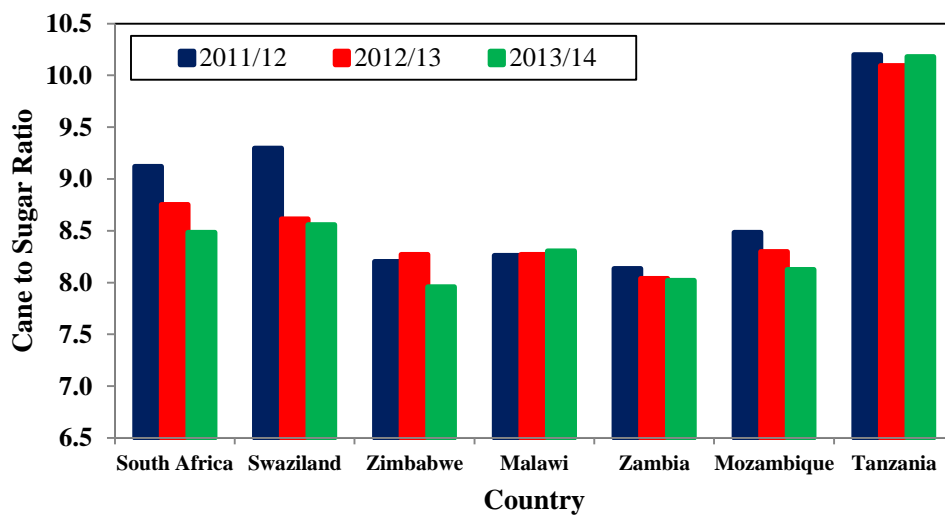
The Overall Recovery (OR) and Value Recovery (VR) values for the South African industry for the past ten seasons are shown in Figure 19. As expected, from the slight improvements to both extraction and BHR, the OR for the past season showed an improvement over the 2012/13 value with an increase from 84.55% to 84.81%. The VR, however, was unchanged over the past two seasons at 99.35% and this is likely due to the improved cane quality.



**Figure 19. Overall Recovery (OR) and Value Recovery (VR) in South Africa for the past ten seasons.**

*Cane to sugar ratio*

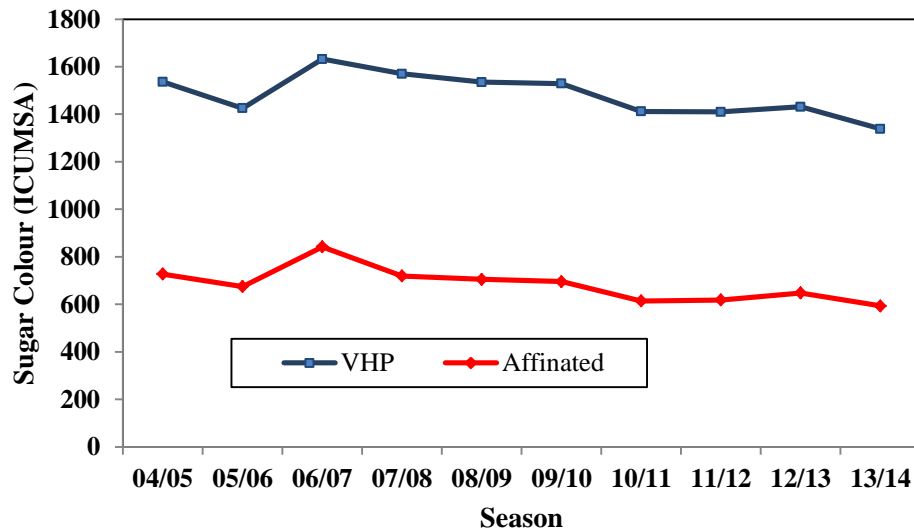
The changes in cane to sugar ratios (Figure 20) from 2012/13 to 2013/14 in southern Africa largely reflect the changes in cane quality as measured by ERC % cane (see Figure 5). Noticeable improvements to the cane to sugar ratio were shown by South Africa, Zimbabwe and Mozambique. Zimbabwe edged Zambia for the lowest and best cane to sugar ratio of 7.96 whilst Tanzania, where the lowest pol content cane is received, obtained the highest ratio of 10.18.



**Figure 20. Cane to sugar ratio in southern Africa from 2011/12 to 2013/14.**

### Sugar quality

The trends in the Very High Pol (VHP) sugar quality with respect to colour are shown in Figure 21. This relates to sugar received by the South African Sugar Terminal (SAST). The average VHP sugar colour remained below the 1500 ICUMSA<sup>1</sup> target level and decreased from 1431 to 1338 ICUMSA units over the past season. The sugar colour in 2013/14 was the lowest recorded in ten years and probably came about as a result of a low in affinated sugar colour of 593 ICUMSA units.



**Figure 21. Very High Pol (VHP) and affinated sugar colour in South Africa for the past ten seasons**

The percentage of sugar fines (mass percentage passing through a 600 µm screen) improved from a value of 37% in 2012/13 to a value of 32% in 2013/14. Fines were a problem at relatively few mills in the 2013/14 season and generally only in the first few months of the season.

### Concluding Remarks

The 2013/14 milling season in South Africa was an improved season, with an increased tonnage and better quality cane entering the factories. The tonnage of cane processed saw a third season of increase, to over the 20 million ton mark, although it was still lower than the amount harvested in 2009/10. OTE improved as a result of lower No-cane Stops and LTA. Extraction performance continued the improvement of the previous season, although CRE decreased. Decreased losses to molasses and an increase in UDL resulted in a slightly higher BHR and OR, but the CRB decreased and VR remained constant.

Regarding the Affiliate mills in neighbouring countries, most reported improved cane quality in terms of ERC % Cane. The Affiliated factories recorded generally improved extraction (increases at nine factories) and BHR (increases at seven factories).

<sup>1</sup> ICUMSA = International Commission for Uniform Methods of Sugar Analysis

## Acknowledgements

This Annual Review is made possible by the valuable contributions of the following people and organisations, and their assistance is gratefully acknowledged: South African Sugar Millers' Association NPC, South African Sugar Association Cane Testing Service, South African Sugarcane Research Institute, South African Sugar Terminals, SMRI Member and Affiliate Member mill laboratories, SMRI laboratories and staff, and the staff of the various mills and milling groups.

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- Smith GT, Davis SB, Madho S and Achary M (2013). Eighty-eighth annual review of the milling season in southern Africa (2012-2013). *Proc S Afr Sug Technol Ass* 86: 24-54.

## APPENDIX DATA TABLES

- Table A1:** Cane crushed and sugar made, cane composition and time accounts, performances and losses – South African factories (Season 2013/14)
- Table A2:** Cane crushed and sugar made, cane composition and time accounts, performances and losses – Swaziland, Malawi, Zimbabwe, Tanzania and Mozambique factories (Season 2013/14)
- Table B1:** Analysis of bagasse, juices, filter cake, syrup and final molasses – South African factories (Season 2013/14)
- Table B2:** Analysis of bagasse, juices, filter cake, syrup and final molasses – Swaziland, Malawi, Zimbabwe, Tanzania and Mozambique factories (Season 2013/14)
- Table C1:** Masecutes, exhaustions, clarifying agents and additional fuels – South African factories (Season 2013/14)
- Table C2:** Masecutes, exhaustions, clarifying agents and additional fuels – Swaziland, Malawi, Zimbabwe, Tanzania and Mozambique factories (Season 2013/14)
- Table D:** Comparative manufacturing data of recent years (South African factories)
- Table E:** Average manufacturing results by monthly periods for South African factories (Season 2013/14)
- Table F:** Cane varieties and rainfall (Season 2013/14)
- Table G:** Transport summary – South African factories (Season 2013/14)
- Table H:** Comparative data of reporting South African factories from 1925 onward.

TABLE A1  
CANE CRUSHED AND SUGAR MADE,CANE COMPOSITION,THROUGHPUTS AND TIME ACCOUNTS,PERFORMANCES AND LOSSES  
SOUTH AFRICAN FACTORIES (SEASON 2013 - 2014)

SYMBOLS OF FACTORIES	ML *	KM-A *	KM-B *	KM-AVE	PG *	UF *	FX-A *	FX-B *	FX-AVE	AK *	DL	MS-A *	MS-B *	MS-AVE
<b>TONS SUGAR MADE AND ESTIMATED</b>	202679	-	-	297736	148323	128460	-	-	247126	150653	123493	-	-	114425
Refined % total sugar	47.00	-	-	-	70.39	-	-	-	-	-	-	-	-	-
Moisture all sugar	0.07	-	-	0.09	0.02	0.07	-	-	0.08	0.17	0.09	-	-	0.05
Pol all sugar	99.97	-	-	99.37	99.78	99.37	-	-	99.37	99.34	99.24	-	-	99.59
Tons cane crushed total	1685846	-	-	2360039	1320453	1121817	-	-	2088930	1268101	1064473	-	-	1059727
Tons cane crushed per tandem		1230399	1129639				1042186	1046744				359304	700424	
Season started on	20-Mar-2013	-	-	19-Mar-2013	6-Mar-2013	3-Apr-2013	-	-	16-Apr-2013	10-Apr-2013	10-Apr-2013	-	-	18-Apr-2013
Season completed on	22-Dec-2013	-	-	12-Dec-2013	20-Dec-2013	15-Dec-2013	-	-	25-Nov-2013	4-Dec-2013	15-Nov-2013	-	-	30-Nov-2013
Length of season (days)	277	-	-	268	289	256	-	-	223	238	219	-	-	226
<b>TIME ACCOUNT</b>														
Overall time efficiency %	87.30	82.54	78.51	80.54	78.74	79.98	76.37	78.48	77.42	72.93	69.60	51.21	68.94	60.20
Scheduled stops% gross available time	0.29	2.63	2.59	2.61	5.45	3.45	8.35	8.15	8.25	8.46	8.18	12.72	11.75	12.23
Lack of cane % gross available time	7.16	6.65	8.81	7.72	4.78	6.24	7.30	4.80	6.05	5.28	7.55	17.42	9.19	13.25
Other stops % gross available time	5.16	7.63	9.42	8.52	10.13	9.72	7.28	7.85	7.57	10.53	13.83	18.18	9.73	13.90
Foreign matter % gross available time	0.08	0.54	0.67	0.61	0.90	0.60	0.70	0.72	0.71	2.80	0.84	0.47	0.39	0.43
Lost time % available crush.time	5.58	8.46	10.71	9.56	11.40	10.84	8.70	9.10	8.90	12.61	16.58	26.19	12.37	18.75
Force majeure stops (hours)	6	34	27	30	0	91	0	1	0	11	6	0	0	0
<b>THROUGHPUTS PER CRUSHING HOUR #</b>														
Tons cane	282.95	232.40	228.43	445.78	242.71	232.20	254.97	249.26	429.85	304.62	283.87	133.07	187.63	265.30
Tons fibre in bagasse	39.36	32.19	31.55	61.66	35.22	31.75	40.14	39.58	67.97	49.26	43.13	21.59	32.36	44.83
Tons brix in mixed juice(adj.)	45.92	37.22	36.55	71.37	36.98	35.41	39.81	38.72	66.94	47.05	42.56	19.61	27.59	39.04
Tons sucrose in mixed juice(adj.)	39.74	32.52	31.95	62.36	32.03	30.51	34.08	33.14	57.30	40.60	37.02	16.94	23.67	33.57
Tons non-suc. in mixed juice(adj.)	6.18	4.71	4.60	9.01	4.95	4.90	5.72	5.58	9.64	6.44	5.54	2.67	3.92	5.46
Tons of sugar produced	34.02	-	-	56.24	27.26	26.59	-	-	50.85	36.19	32.93	-	-	28.65
<b>COMPOSITION OF CANE CRUSHED</b>														
Sucrose % cane	14.39	14.34	14.34	14.34	13.71	13.62	13.57	13.50	13.53	13.69	13.57	13.10	12.98	13.02
Pol % cane	14.24	14.21	14.20	14.21	13.59	13.44	13.45	13.39	13.42	13.61	13.46	13.00	12.86	12.91
Fibre % cane	13.91	13.84	13.82	13.83	14.59	14.13	15.75	15.87	15.81	16.17	16.38	16.86	16.92	16.90
Brix % cane	16.81	16.63	16.60	16.62	16.08	15.98	16.20	16.14	16.17	16.01	15.89	15.40	15.35	15.37
Ash % cane	1.50	1.36	1.36	1.36	1.64	-	2.07	2.20	2.14	1.89	2.10	1.75	1.95	1.88
ERC % cane	12.28	12.31	12.32	12.32	11.63	11.55	11.31	11.24	11.28	11.59	11.48	11.03	10.86	10.92
ERC % sucrose in cane	85.35	85.85	85.93	85.89	84.82	84.85	83.38	83.27	83.33	84.71	84.62	84.16	83.67	83.84
RV % cane	13.11	13.12	13.12	13.12	12.43	12.35	12.16	12.09	12.13	12.39	12.27	11.80	11.65	11.70
Merc % cane	12.30	12.26	12.27	12.27	11.62	11.59	11.18	11.10	11.14	11.51	11.43	10.96	10.77	10.84
<b>EXTRACTION</b>														
Extraction (sucrose based)	97.60	97.55	97.56	97.55	96.27	96.50	98.53	98.48	98.50	97.40	96.10	97.16	97.19	97.18
Corrected reduced extraction	97.11	97.03	97.03	97.03	95.84	95.85	98.52	98.49	98.50	97.45	95.96	97.32	97.52	97.45
Imbibition % fibre	376	325	309	317	327	324	321	346	334	375	283	323	325	324
Diffusion Rate Index	9	-	-	-	10	4	-	-	-	-	-	-	-	-
Preparation index	-	93	93	93	-	-	91	91	91	92	89	91	91	91
Pol factor	99.29	99.60	98.91	99.27	101.36	96.92	98.36	98.60	98.48	99.66	99.67	99.58	99.88	99.78
Brix factor	100.50	101.04	100.37	100.72	102.37	100.05	100.64	100.67	100.66	100.74	101.11	101.22	101.96	101.71
<b>RECOVERIES</b>														
Boiling house recovery (sucrose)	85.57	-	-	89.62	84.94	86.61	-	-	88.18	88.54	88.27	-	-	84.97
C R B	83.82	-	-	87.28	83.04	84.08	-	-	87.47	87.15	86.33	-	-	84.90
Overall recovery (sucrose)	83.52	-	-	87.43	81.77	83.57	-	-	86.86	86.23	84.83	-	-	82.58
Ton cane per ton sugar	8.32	-	-	7.93	8.90	8.73	-	-	8.45	8.42	8.62	-	-	9.26
Ton cane per ton 96° pol sugar	7.99	-	-	7.66	8.56	8.44	-	-	8.17	8.13	8.34	-	-	8.93
Value Recovery %	97.98	-	-	100.99	96.87	97.95	-	-	103.13	101.01	99.11	-	-	98.76
Crystal Recovery Efficiency ( XRE )	100.69	-	-	105.04	99.94	100.89	-	-	108.59	105.44	103.52	-	-	102.21
<b>BALANCES</b>														
Sucrose lost % sucrose in cane														
- lost in bagasse	2.40	-	-	2.45	3.73	3.50	-	-	1.50	2.60	3.90	-	-	2.82
- lost in filter cake	-	-	-	-	0.12	0.28	-	-	-	-	1.21	-	-	-
- lost in final molasses	10.54	-	-	8.25	10.47	9.76	-	-	9.83	8.90	7.56	-	-	11.50
- undetermined losses	3.55	-	-	1.87	3.91	2.88	-	-	1.81	2.26	2.50	-	-	3.11
Non sucrose ratio	1.06	-	-	1.02	1.05	1.00	-	-	1.06	0.99	0.99	-	-	1.13
Fructose ratio FM/MJ	0.95	-	-	0.72	0.78	0.64	-	-	0.70	0.66	0.67	-	-	0.80
Glucose ratio FM/MJ	0.92	-	-	0.56	0.75	0.57	-	-	0.60	0.63	0.56	-	-	0.78

\* Cane diffuser

# 2013/14 season's throughputs, for factories with double tandems, were calculated using concurrent crushing hours. 38



TABLE A1 (continued)  
 CANE CRUSHED AND SUGAR MADE,CANE COMPOSITION,THROUGHPUTS AND TIME ACCOUNTS,PERFORMANCES AND LOSSES  
 SOUTH AFRICAN FACTORIES (SEASON 2013 - 2014)

SYMBOLS OF FACTORIES	GH-A *	GH-B	GH-AVE	NB	UC *	ES *	SZ-A *	SZ-B *	SZ-AVE	UK *	INDUSTRY
<b>TONS SUGAR MADE AND ESTIMATED</b>	-	-	167836	165775	83201	163404	-	-	246751	121251	2361113
Refined % total sugar	-	-	100.00	100.00	-	-	-	-	-	-	22.59
Moisture all sugar	-	-	0.02	0.02	0.06	0.07	-	-	0.10	0.05	0.07
Pol all sugar	-	-	99.93	99.93	99.49	99.60	-	-	99.50	99.45	99.57
Tons cane crushed total			1507969	1467088	696049	1359680			2062966	969830	20032970
Tons cane crushed per tandem	508156	999813					996471	1066496			
Season started on	-	-	5-Apr-2013	12-Mar-2013	14-Mar-2013	12-Mar-2013	-	-	4-Apr-2013	9-Apr-2013	6-Mar-2013
Season completed on	-	-	19-Dec-2013	9-Dec-2013	8-Dec-2013	6-Dec-2013	-	-	12-Dec-2013	15-Nov-2013	22-Dec-2013
Length of season (days)	-	-	258	272	269	269	-	-	252	220	254
<b>TIME ACCOUNT</b>											
Overall time efficiency %	83.44	84.76	84.10	81.23	84.62	84.96	80.61	87.20	83.91	78.97	79.31
Scheduled stops% gross available time	3.64	4.22	3.93	6.03	6.26	4.98	4.47	4.37	4.42	6.97	5.64
Lack of cane % gross available time	6.55	3.51	5.03	6.41	2.35	5.38	12.35	5.09	8.71	12.91	6.91
Other stops % gross available time	6.12	6.89	6.50	6.13	6.33	4.08	1.84	1.96	1.90	0.00	7.38
Foreign matter % gross available time	0.26	0.61	0.44	0.20	0.44	0.60	0.73	1.38	1.06	1.15	0.75
Lost time % available crush.time	6.83	7.51	7.18	7.02	6.96	4.58	2.23	2.20	2.21	0.00	8.51
Force majeure stops (hours)	14	2	8	0	64	0	0	0	0	0	217
<b>THROUGHPUTS PER CRUSHING HOUR #</b>											
Tons cane	97.69	188.70	245.88	277.47	128.68	248.36	205.46	202.50	386.87	232.15	285.76
Tons fibre in bagasse	15.60	29.24	38.50	37.00	17.06	35.65	31.79	31.41	59.94	35.01	42.33
Tons brix in mixed juice(adj.)	14.56	27.54	36.14	42.81	19.74	38.64	31.74	31.30	59.78	37.22	44.23
Tons sucrose in mixed juice(adj.)	12.64	24.00	31.45	37.72	17.26	34.02	27.72	27.36	52.24	32.49	38.44
Tons non-suc. in mixed juice(adj.)	1.93	3.54	4.69	5.10	2.48	4.62	4.02	3.94	7.54	4.73	5.79
Tons of sugar produced	-	-	27.37	31.35	15.38	29.85	-	-	46.27	29.02	33.68
<b>COMPOSITION OF CANE CRUSHED</b>											
Sucrose % cane	13.28	13.20	13.22	14.02	13.88	14.11	13.89	13.90	13.89	14.28	13.84
Pol % cane	13.17	13.07	13.11	13.87	13.78	13.99	13.81	13.82	13.81	14.24	13.72
Fibre % cane	16.17	16.14	16.15	14.16	13.43	14.56	15.68	15.74	15.71	15.08	15.04
Brix % cane	15.51	15.44	15.47	16.16	16.08	16.13	16.08	16.08	16.08	16.57	16.14
Ash % cane	3.54	2.86	3.09	1.81	1.25	2.07	1.12	1.13	1.13	1.42	1.78
ERC % cane	11.25	11.16	11.19	12.07	11.92	12.22	11.88	11.90	11.89	12.21	11.78
ERC % sucrose in cane	84.72	84.58	84.63	86.12	85.88	86.59	85.54	85.59	85.56	85.53	85.13
RV % cane	12.02	11.93	11.96	12.84	12.69	12.97	12.66	12.67	12.66	13.02	12.58
Merc % cane	11.23	11.14	11.17	12.11	11.92	12.27	11.89	11.91	11.90	12.11	11.75
<b>EXTRACTION</b>											
Extraction (sucrose based)	97.41	96.39	96.74	96.98	96.67	97.08	97.17	97.21	97.19	98.03	97.23
Corrected reduced extraction	97.48	96.39	96.76	96.26	95.85	96.66	97.05	97.11	97.08	97.84	96.97
Imbibition % fibre	280	301	294	271	293	376	289	294	292	479	331
Diffusion Rate Index	12	13	13	10	-	7	10	10	10	8	9
Preparation index	-	-	-	-	92	-	-	-	-	-	91
Pol factor	99.59	98.93	99.15	98.88	97.26	99.59	99.10	100.31	99.72	99.80	99.25
Brix factor	100.47	100.12	100.24	100.12	98.59	100.44	100.20	101.24	100.74	101.22	100.69
<b>RECOVERIES</b>											
Boiling house recovery (sucrose)	-	-	86.95	83.07	88.66	87.40	-	-	88.13	88.85	87.23
C R B	-	-	85.23	79.99	85.35	83.58	-	-	85.42	86.80	85.22
Overall recovery (sucrose)	-	-	84.11	80.56	85.71	84.85	-	-	85.65	87.10	84.81
Ton cane per ton sugar	-	-	8.98	8.85	8.37	8.32	-	-	8.36	8.00	8.48
Ton cane per ton 96° pol sugar	-	-	8.63	8.50	8.07	8.02	-	-	8.07	7.72	8.18
Value Recovery %	-	-	99.83	94.62	99.26	98.02	-	-	99.80	101.13	99.35
Crystal Recovery Efficiency ( XRE )	-	-	103.44	96.83	102.57	100.34	-	-	102.89	105.58	102.91
<b>BALANCES</b>											
Sucrose lost % sucrose in cane											
- lost in bagasse	-	-	3.26	3.02	3.33	2.92	-	-	2.81	1.97	2.77
- lost in filter cake	-	-	0.37	1.43	0.28	0.14	-	-	0.16	-	0.26
- lost in final molasses	-	-	9.76	10.14	9.16	9.21	-	-	9.53	9.02	9.52
- undetermined losses	-	-	2.49	4.85	1.51	2.88	-	-	1.85	1.91	2.64
Non sucrose ratio	-	-	1.02	1.09	1.00	1.08	-	-	1.04	1.00	1.04
Fructose ratio FM/MJ	-	-	0.65	0.81	0.64	0.73	-	-	0.71	0.65	0.73
Glucose ratio FM/MJ	-	-	0.51	0.68	0.31	0.53	-	-	0.63	0.55	0.63

\* Cane diffuser

# 2013/14 season's throughputs, for factories with double tandems, were calculated using concurrent crushing hours.

TABLE A2

CANE CRUSHED AND SUGAR MADE, CANE COMPOSITION, THROUGHPUTS AND TIME ACCOUNTS, PERFORMANCES AND LOSSES  
 SWAZILAND, MALAWI, ZIMBABWE, ZAMBIA, TANZANIA AND MOZAMBIQUE FACTORIES (SEASON 2013 - 2014)

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SYMBOLS OF FACTORIES	MH-A *	MH-B	MH-AVE	UB-A *	UB-B	UB-AVE	SM	NH *	DW *	HV-A *	HV-B *	HV-AVE
<b>TONS SUGAR MADE AND ESTIMATED</b>	-	-	182348	-	-	251273	219843	163169	125844	-	-	239228
Refined % total sugar	-	-	70.38	-	-	32.15	-	7.86	9.62	-	-	-
Moisture % all sugar	-	-	0.04	-	-	0.10	0.09	0.02	0.06	-	-	0.08
Pol % all sugar	-	-	99.76	-	-	99.52	99.37	99.28	99.24	-	-	99.34
Tons cane crushed total			1510845			2226833	1854209	1466153	933774			1874524
Tons cane crushed per tandem	666209	844636		925610	1301223					968443	906081	
Season started on	-	-	3-Apr-2013	-	-	9-Apr-2013	3-Apr-2013	9-Apr-2013	10-Apr-2013	-	-	16-Apr-2013
Season completed on	-	-	11-Dec-2013	-	-	13-Dec-2013	12-Dec-2013	14-Dec-2013	16-Dec-2013	-	-	19-Dec-2013
Length of season (days)	-	-	252	-	-	248	253	249	250	-	-	247
<b>TIME ACCOUNT</b>												
Overall time efficiency %	80.44	82.78	81.61	85.91	89.20	87.56	78.00	80.76	86.16	80.22	74.97	77.65
Scheduled stops% gross available time	6.24	6.35	6.30	2.39	3.12	2.76	4.42	3.72	3.77	5.24	4.08	4.67
Lack of cane % gross available time	12.89	10.26	11.57	9.15	6.37	7.76	9.32	8.53	4.49	8.01	13.25	10.58
Other stops % gross available time	0.03	0.07	0.05	1.42	1.14	1.28	8.01	5.89	5.40	6.18	7.66	6.90
Foreign matter % gross available time	0.40	0.53	0.47	1.13	0.16	0.65	0.24	1.10	0.18	0.35	0.05	0.21
Lost time % available crush.time	0.03	0.09	0.06	1.63	1.26	1.44	9.32	6.79	5.89	7.15	9.27	8.16
Force majeure stops (hours)	15	5	10	0	0	0	0	12	0	0	0	0
<b>THROUGHPUTS PER CRUSHING HOUR #</b>												
Tons cane	144.30	176.02	314.86	190.81	257.10	439.98	413.83	304.45	181.42	205.23	213.84	397.25
Tons fibre in bagasse	18.66	24.86	42.81	22.95	32.10	54.10	52.81	42.68	25.70	29.10	30.02	56.06
Tons brix in mixed juice	22.44	27.89	49.48	21.89	46.74	67.72	63.16	45.96	30.63	32.96	34.91	64.31
Tons pol in mixed juice	19.25	24.00	42.52	18.68	39.55	57.46	54.48	39.51	26.65	28.74	30.54	56.16
Tons non-pol. in mixed juice	3.19	3.90	6.96	3.20	7.20	10.27	8.68	6.45	3.99	4.22	4.37	8.14
Tons of sugar produced	-	-	38.00	-	-	49.65	49.07	33.88	24.45	-	-	50.70
<b>COMPOSITION OF CANE CRUSHED</b>												
Pol % cane	13.81	14.24	14.05	10.25	15.77	13.48	13.76	13.71	15.14	14.42	14.69	14.55
Fibre % cane	13.71	14.39	14.09	12.60	13.37	13.05	13.96	14.44	14.25	14.37	14.22	14.29
Brix % cane	16.27	16.75	16.54	12.25	18.91	16.14	16.17	16.16	17.83	16.76	17.02	16.89
Ash % cane	-	-	-	2.22	2.24	2.23	1.54	3.40	-	-	-	-
ERC % cane	11.69	12.08	11.91	8.52	13.23	11.27	11.67	11.59	12.85	12.34	12.62	12.48
ERC % pol in cane	84.67	84.78	84.73	83.14	83.88	83.65	84.80	84.53	84.86	85.58	85.89	85.74
<b>EXTRACTION</b>												
Extraction (pol based)	96.64	95.71	96.11	95.51	97.55	96.91	95.69	94.66	97.01	97.11	97.20	97.15
Corrected reduced extraction	95.74	94.96	95.28	94.82	96.50	95.90	94.49	93.83	96.37	96.60	96.62	96.61
Imbibition % fibre	355	369	363	111	529	359	300	254	360	371	375	373
Diffusion Rate Index	-	-	-	11	11	11	-	8	8	-	-	-
Preparation index	-	-	-	-	-	-	91	-	-	93	93	93
Pol factor	97.18	101.41	99.53	74.07	117.99	99.36	99.41	97.19	99.79	98.62	100.57	99.56
Brix factor	99.74	103.73	101.96	75.37	118.84	100.54	100.00	99.21	102.13	99.66	101.34	100.47
<b>RECOVERIES</b>												
Boiling house recovery (pol based)	-	-	89.16	-	-	85.99	89.50	85.15	91.06	-	-	89.67
Overall recovery (pol based)	-	-	85.69	-	-	83.33	85.64	80.61	88.34	-	-	87.12
Ton cane per ton sugar	-	-	8.29	-	-	8.86	8.43	8.99	7.42	-	-	7.84
Ton cane per ton 96° pol sugar	-	-	7.97	-	-	8.55	8.15	8.69	7.18	-	-	7.57
<b>BALANCES</b>												
Pol lost % pol in cane	-	-	3.89	-	-	3.09	4.31	5.34	2.99	-	-	2.85
- lost in bagasse	-	-	0.16	-	-	0.13	0.58	0.14	0.05	-	-	-
- lost in filter cake	-	-	7.61	-	-	9.86	7.63	9.95	7.48	-	-	7.59
- undetermined losses	-	-	2.65	-	-	3.58	1.84	3.96	1.14	-	-	2.45
Non pol ratio	-	-	1.04	-	-	1.14	1.03	0.99	0.95	-	-	0.99

\* Cane diffuser

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# 2013/14 season's throughputs, for factories with double tandems, were calculated using concurrent crushing hours.

TABLE A2 (continued)  
 CANE CRUSHED AND SUGAR MADE, CANE COMPOSITION, THROUGHPUTS AND TIME ACCOUNTS, PERFORMANCES AND LOSSES  
 SWAZILAND, MALAWI, ZIMBABWE, ZAMBIA, TANZANIA AND MOZAMBIQUE FACTORIES (SEASON 2013 - 2014)

SYMBOLS OF FACTORIES	TR-A *	TR-B	TR-AVE	NK-A	NK-B	NK-AVE	MW *	RU *	MA *	MB *	XN *
<b>TONS SUGAR MADE AND ESTIMATED</b>	-	-	249043	-	-	393268	52614	63881	81966	65414	184418
Refined % total sugar	-	-	-	-	-	11.18	-	-	-	-	-
Moisture % all sugar	-	-	-	-	-	0.09	0.12	0.12	0.69	0.12	0.17
Pol % all sugar	-	-	99.35	-	-	99.33	99.15	99.04	99.20	99.00	99.11
Tons cane crushed total			2011965			3153728	531421	664324	677797	557864	1460373
Tons cane crushed per tandem	1406339	605626		1636602	1517126						
Season started on	-	-	11-Apr-2013	-	-	28-Mar-2013	23-May-2013	17-Jun-2013	7-May-2013	13-May-2013	3-May-2013
Season completed on	-	-	13-Dec-2013	-	-	24-Nov-2013	6-Feb-2014	29-Mar-2014	12-Oct-2013	19-Nov-2013	28-Nov-2013
Length of season (days)	-	-	246	-	-	241	259	285	158	190	209
<b>TIME ACCOUNT</b>											
Overall time efficiency %	86.47	67.52	77.01	91.11	87.65	89.37	72.90	72.44	88.16	74.81	80.61
Scheduled stops% gross available time	3.89	5.71	4.80	2.86	3.79	3.33	3.59	2.48	4.16	3.07	4.49
Lack of cane % gross available time	0.81	12.09	6.44	0.48	1.35	0.92	15.72	9.73	5.45	11.05	8.27
Other stops % gross available time	8.26	14.59	11.42	5.51	7.18	6.35	7.44	15.30	0.00	10.68	6.02
Foreign matter % gross available time	0.57	0.08	0.33	0.04	0.03	0.03	0.34	0.05	2.24	0.39	0.61
Lost time % available crush.time	8.72	17.77	12.91	5.71	7.57	6.64	9.26	17.44	0.00	12.49	6.95
Force majeure stops (hours)	0	0	0	1	0	1	0	7	8	0	75
<b>THROUGHPUTS PER CRUSHING HOUR #</b>											
Tons cane	274.48	151.92	392.69	322.22	306.01	620.92	111.46	143.65	202.78	186.03	417.05
Tons fibre in bagasse	38.12	20.76	54.28	48.52	41.42	88.94	15.63	21.77	23.34	26.97	59.44
Tons brix in mixed juice	44.27	24.35	63.21	52.01	49.34	100.17	15.03	19.40	31.22	28.52	65.97
Tons pol in mixed juice	38.46	21.14	54.91	45.07	42.88	86.92	12.73	16.34	27.10	24.54	57.51
Tons non-pol. in mixed juice	5.81	3.21	8.31	6.94	6.46	13.25	2.30	3.05	4.12	3.98	8.46
Tons of sugar produced	-	-	48.61	-	-	77.43	11.04	13.81	24.52	21.81	52.67
<b>COMPOSITION OF CANE CRUSHED</b>											
Pol % cane	14.46	14.49	14.47	14.58	14.63	14.60	12.19	12.24	13.81	13.75	14.17
Fibre % cane	14.15	14.03	14.12	14.45	14.39	14.42	15.29	16.23	12.31	15.26	14.24
Brix % cane	17.03	17.18	17.07	17.14	17.13	17.14	14.78	14.85	16.27	17.01	16.57
Ash % cane	0.71	0.71	0.71	-	-	-	3.23	3.43	1.57	2.04	1.35
ERC % cane	12.25	12.22	12.24	12.37	12.45	12.41	10.00	10.02	11.74	11.15	12.07
ERC % pol in cane	84.75	84.36	84.63	84.85	85.12	84.98	82.08	81.87	84.97	81.05	85.18
<b>EXTRACTION</b>											
Extraction (pol based)	96.92	96.02	96.65	95.95	95.79	95.87	93.71	92.99	96.75	95.94	97.30
Corrected reduced extraction	96.28	95.10	95.93	95.48	94.76	95.15	93.29	93.15	95.29	95.50	96.86
Imbibition % fibre	350	347	349	305	300	303	160	236	282	227	366
Diffusion Rate Index	-	-	-	-	-	-	-	-	-	-	-
Preparation index	91	91	91	85	86	86	85	80	90	91	91
Pol factor	99.74	99.50	99.67	98.78	99.17	98.97	94.85	94.25	94.87	99.86	98.67
Brix factor	101.09	101.61	101.24	99.67	99.68	99.67	95.66	95.55	96.92	105.88	100.26
<b>RECOVERIES</b>											
Boiling house recovery (pol based)	-	-	87.95	-	-	88.49	85.96	83.70	89.77	88.00	90.76
Overall recovery (pol based)	-	-	85.01	-	-	84.84	80.55	77.84	86.85	84.42	88.31
Ton cane per ton sugar	-	-	8.08	-	-	8.02	10.10	10.40	8.27	8.53	7.92
Ton cane per ton 96° pol sugar	-	-	7.81	-	-	7.75	9.78	10.08	8.00	8.27	7.67
<b>BALANCES</b>											
Pol lost % pol in cane											
- lost in bagasse	-	-	3.35	-	-	4.13	6.29	7.01	3.25	4.06	2.70
- lost in filter cake	-	-	0.28	-	-	0.35	0.51	0.38	0.42	0.17	-
- lost in final molasses	-	-	7.40	-	-	8.46	9.37	10.35	7.68	8.89	7.41
- undetermined losses	-	-	3.97	-	-	2.22	3.28	4.43	1.80	2.45	1.58
Non pol ratio	-	-	1.00	-	-	1.04	1.00	1.05	0.96	0.96	1.11

\* Cane diffuser

# 2013/14 season's throughputs, for factories with double tandems, were calculated using concurrent crushing hours.

**TABLE B1**  
**ANALYSIS OF BAGASSE, JUICES, FILTER CAKE, SYRUP AND FINAL MOLASSES**  
**SOUTH AFRICAN FACTORIES (SEASON 2013 - 2014)**

SYMBOLS OF FACTORIES	ML *	KM-A *	KM-B *	KM-AVE	PG *	UF *	FX-A *	FX-B *	FX-AVE	AK *	DL	MS-A *	MS-B *	MS-AVE
<b>FINAL BAGASSE</b>														
Pol % bagasse	1.09	1.29	1.25	1.27	1.61	1.60	0.60	0.61	0.60	1.09	1.60	1.07	0.99	1.01
Moisture % bagasse	54.05	46.97	48.41	47.67	51.76	51.67	50.88	51.14	51.01	48.65	51.35	51.50	51.54	51.52
Fibre % bagasse	44.11	50.79	49.44	50.14	45.59	45.87	47.35	47.07	47.21	49.61	45.96	46.61	46.70	46.67
Ash % bagasse	3.34	-	-	3.26	2.54	-	-	-	-	4.35	-	-	-	-
LCV (kJ per kg bagasse) #	6403	-	-	7729	6999	-	-	-	-	7340	-	-	-	-
<b>MIXED JUICE</b>														
Mixed juice(adj.) % cane	120.81	117.76	114.76	116.32	115.69	114.49	117.80	121.64	119.72	128.44	109.94	117.64	120.08	119.26
Brix % mixed juice(adj.)	13.43	13.60	13.94	13.76	13.17	13.32	13.25	12.77	13.01	12.02	13.64	12.53	12.24	12.34
Sucrose purity (MJ adj.)	86.54	87.35	87.40	87.37	86.61	86.16	85.63	85.58	85.60	86.31	86.98	86.40	85.80	86.00
Apparent purity(MJ adj.)	85.52	86.51	86.58	86.49	85.66	84.96	84.86	84.85	84.70	85.67	86.04	85.67	84.99	84.01
Purity difference(MJ adj. - DAC)	-0.12	-0.17	-0.25	-0.21	0.49	-1.81	-0.08	0.16	0.04	-0.11	0.28	-0.13	-0.52	-0.39
(Glucose + fructose) % sucrose(MJ unadj)	4.77	-	-	4.30	4.71	5.51	-	-	4.60	4.18	4.53	-	-	4.91
Suspended solids % MJ(unadj.)	0.14	0.31	0.31	0.31	0.09	0.40	0.37	0.38	0.37	0.30	1.08	0.60	0.54	0.56
Pol/sucrose ratio (MJ unadj.)	0.9896	0.9904	0.9906	0.9905	0.9908	0.9867	0.9911	0.9915	0.9913	0.9942	0.9913	0.9916	0.9906	0.9909
<b>CLARIFIED JUICE</b>														
Brix % clarified juice	13.77	-	-	13.61	12.43	13.00	-	-	13.71	12.01	12.85	-	-	12.88
Apparent purity (%)	86.19	-	-	86.20	85.25	83.99	-	-	84.17	84.79	85.30	-	-	82.08
Purity difference(CJ - MJ)	0.67	-	-	-0.29	-0.41	-0.97	-	-	-0.53	-0.88	-0.74	-	-	-1.93
Average pH	7.0	-	-	7.0	7.1	7.0	-	-	7.1	7.0	7.1	-	-	7.0
<b>CLARIFIER MUD</b>														
Tons clarifier mud	76419	58612	49670	108282	7098	-	86095	98772	184867	88113	-	2213	84678	86891
Pol % clarifier mud	12.20	11.82	11.92	11.86	9.10	-	11.65	11.56	11.60	10.02	-	9.49	11.55	11.50
Brix % clarifier mud	14.44	14.07	14.19	14.12	11.74	-	14.02	13.92	13.97	12.00	-	11.67	14.09	14.02
Insoluble solids % clarifier mud	3.81	8.23	8.04	8.14	6.07	-	5.47	5.36	5.41	5.86	-	10.64	8.58	8.64
<b>FILTER CAKE</b>														
Pol % filter cake	-	-	-	-	1.54	1.38	-	-	-	-	2.30	-	-	-
Moisture % filter cake	-	-	-	-	-	70.00	-	-	-	-	-	-	-	-
Filter cake % cane	-	-	-	-	1.03	2.78	-	-	-	-	7.15	-	-	-
Filter wash index	-	-	-	-	105.9	102.5	-	-	-	-	106.1	-	-	-
Purity difference(CJ - filtrate)	-	-	-	-	-	9.23	-	-	-	-	1.17	-	-	-
<b>SYRUP</b>														
Brix % syrup	67.86	-	-	67.00	67.26	57.09	-	-	66.05	67.22	65.56	-	-	68.55
Apparent purity (%)	85.18	-	-	85.65	85.24	84.60	-	-	84.06	84.86	85.52	-	-	83.04
Purity difference(Syrup - MJ)	-0.34	-	-	-0.85	-0.42	-0.36	-	-	-0.64	-0.81	-0.52	-	-	-0.96
Average pH	5.9	-	-	5.9	6.0	6.0	-	-	6.2	6.1	6.7	-	-	6.2
<b>FINAL MOLASSES</b>														
Refractometer brix	83.55	-	-	84.53	83.32	82.23	-	-	85.32	85.06	84.99	-	-	86.40
Pol/refractometer brix purity (%)	36.71	-	-	33.91	37.75	36.58	-	-	34.21	36.16	32.93	-	-	35.97
Sucrose/refractometer brix purity (%)	39.34	-	-	37.14	40.00	39.13	-	-	36.31	37.18	35.30	-	-	37.10
Conductivity ash %	12.50	-	-	16.37	13.04	12.55	-	-	14.91	14.78	16.39	-	-	14.08
(Glucose + fructose)/ash ratio	1.13	-	-	0.65	0.85	0.87	-	-	0.68	0.67	0.66	-	-	0.81
Fructose %	7.42	-	-	6.19	6.12	6.16	-	-	5.77	5.50	6.13	-	-	6.17
Glucose %	6.71	-	-	4.51	5.03	4.82	-	-	4.34	4.44	4.63	-	-	5.22
TPD based on molasses (made)	8.0	-	-	3.8	8.7	7.9	-	-	3.5	3.9	1.2	-	-	3.2
TPD based on mixed juice	8.0	-	-	5.5	10.1	9.9	-	-	5.0	5.4	3.2	-	-	4.0
Final molasses @ 85° brix % cane	4.53	-	-	3.75	4.22	4.00	-	-	4.31	3.85	3.42	-	-	4.75
Pol/sucrose ratio	0.9330	-	-	0.9130	0.9437	0.9349	-	-	0.9422	0.9726	0.9331	-	-	0.9694

\* Cane diffuser

# Lower Calorific Value (LCV) = 18260.00 - 31.14 Bx % bagasse - 207.01 moisture % bagasse - 182.60 ash % bagasse

**TABLE B1 (continued)**  
**ANALYSIS OF BAGASSE, JUICES, FILTER CAKE, SYRUP AND FINAL MOLASSES**  
**SOUTH AFRICAN FACTORIES (SEASON 2013 - 2014)**

SYMBOLS OF FACTORIES	GH-A *	GH-B	GH-AVE	NB	UC *	ES *	SZ-A *	SZ-B *	SZ-AVE	UK *	INDUSTRY
<b>FINAL BAGASSE</b>											
Pol % bagasse	1.02	1.45	1.30	1.45	1.57	1.34	1.25	1.24	1.24	0.91	1.22
Moisture % bagasse	50.78	50.17	50.38	51.80	52.34	51.26	48.90	48.44	48.66	49.76	50.66
Fibre % bagasse	47.42	47.25	47.31	45.71	45.14	46.85	49.10	49.58	49.34	48.50	47.22
Ash % bagasse	-	-	2.09	4.11	2.57	5.79	-	-	3.69	3.32	2.53
LCV (kJ per kg bagasse) #	-	-	7377	6709	6878	6532	-	-	7450	7298	7116
<b>MIXED JUICE</b>											
Mixed juice(adj.) % cane	111.00	113.86	112.90	106.90	109.54	123.38	113.20	114.31	113.78	141.42	117.74
Brix % mixed juice(adj.)	13.43	12.82	13.02	14.43	14.00	12.61	13.65	13.52	13.58	11.34	13.15
Sucrose purity (MJ adj.)	86.78	87.14	87.02	88.10	87.44	88.04	87.35	87.42	87.38	87.29	86.91
Apparent purity(MJ adj.)	86.08	86.31	86.08	87.06	86.80	87.22	86.82	86.92	86.55	86.88	85.98
Purity difference(MJ adj. - DAC)	0.40	0.63	0.55	0.22	-0.05	-0.17	0.00	0.15	0.07	-0.07	-0.07
(Glucose + fructose) % sucrose(MJ unadj)	-	-	4.50	4.05	3.92	3.98	-	-	4.04	3.47	4.40
Suspended solids % MJ(unadj.)	0.18	0.57	0.44	0.77	0.15	0.16	0.18	0.20	0.19	0.19	0.35
Pol/sucrose ratio (MJ unadj.)	0.9920	0.9904	0.9909	0.9894	0.9927	0.9912	0.9940	0.9942	0.9941	0.9975	0.9914
<b>CLARIFIED JUICE</b>											
Brix % clarified juice	-	-	12.65	14.63	14.01	12.74	-	-	12.99	11.30	13.12
Apparent purity (%)	-	-	87.39	87.73	86.52	86.90	-	-	86.19	86.48	86.15
Purity difference(CJ - MJ)	-	-	1.31	0.67	-0.28	-0.31	-	-	-0.35	-0.40	-0.26
Average pH	-	-	7.1	7.1	6.9	7.2	-	-	7.0	7.0	7.0
<b>CLARIFIER MUD</b>											
Tons clarifier mud	-	-	-	-	-	-	-	-	-	76117	627786
Pol % clarifier mud	-	-	-	-	-	-	-	-	-	7.90	11.01
Brix % clarifier mud	-	-	-	-	-	-	-	-	-	9.27	13.19
Insoluble solids % clarifier mud	-	-	-	-	-	-	-	-	-	3.65	5.99
<b>FILTER CAKE</b>											
Pol % filter cake	-	-	1.32	2.97	4.03	1.80	-	-	1.87	-	2.19
Moisture % filter cake	-	-	70.00	75.00	71.12	73.51	-	-	65.79	-	69.61
Filter cake % cane	-	-	3.75	6.73	0.98	1.10	-	-	1.20	-	1.61
Filter wash index	-	-	102.9	98.7	100.0	99.0	-	-	104.5	-	100.2
Purity difference(CJ - filtrate)	-	-	2.08	0.59	5.09	0.92	-	-	1.87	-	2.91
<b>SYRUP</b>											
Brix % syrup	-	-	65.55	71.95	65.38	64.60	-	-	65.62	65.54	66.26
Apparent purity (%)	-	-	87.34	87.21	86.90	86.95	-	-	86.64	86.80	85.68
Purity difference(Syrup - MJ)	-	-	1.26	0.15	0.10	-0.27	-	-	0.09	-0.08	-0.30
Average pH	-	-	6.0	6.0	6.2	6.2	-	-	5.9	5.7	6.1
<b>FINAL MOLASSES</b>											
Refractometer brix	-	-	84.09	79.35	83.50	82.54	-	-	81.90	82.84	83.53
Pol/refractometer brix purity (%)	-	-	38.15	38.78	37.60	37.16	-	-	37.57	38.17	36.41
Sucrose/refractometer brix purity (%)	-	-	39.60	41.41	40.36	39.53	-	-	39.26	38.97	38.53
Conductivity ash %	-	-	13.91	11.54	13.18	12.47	-	-	12.28	13.81	13.71
(Glucose + fructose)/ash ratio	-	-	0.62	0.83	0.53	0.70	-	-	0.73	0.56	0.74
Fructose %	-	-	5.12	5.72	5.00	5.44	-	-	5.23	4.60	5.83
Glucose %	-	-	3.50	3.91	1.95	3.32	-	-	3.73	3.19	4.38
TPD based on molasses (made)	-	-	5.4	8.4	5.5	6.6	-	-	6.4	5.7	5.6
TPD based on mixed juice	-	-	8.3	9.9	9.2	9.2	-	-	8.5	7.4	7.3
Final molasses @ 85° brix % cane	-	-	3.83	4.04	3.71	3.87	-	-	3.97	3.89	4.02
Pol/sucrose ratio	-	-	0.9635	0.9366	0.9318	0.9401	-	-	0.9569	0.9796	0.9449

\* Cane diffuser

# Lower Calorific Value (LCV) = 18260.00 - 31.14 Bx % bagasse - 207.01 moisture % bagasse - 182.60 ash % bagasse

**TABLE B2**  
**ANALYSIS OF BAGASSE, JUICES, FILTER CAKE, SYRUP AND FINAL MOLLASSES**  
**SWAZILAND, MALAWI , ZIMBABWE ,ZAMBIA ,TANZANIA AND MOZAMBIQUE FACTORIES**  
**(SEASON 2013 - 2014)**

SYMBOLS OF FACTORIES	MH-A *	MH-B	MH-AVE	UB-A *	UB-B	UB-AVE	SM	NH *	DW *	HV-A *	HV-B *	HV-AVE
<b>FINAL BAGASSE</b>												
Pol % bagasse	1.62	1.90	1.78	1.71	1.37	1.50	1.99	2.34	1.57	1.37	1.39	1.38
Moisture % bagasse	52.26	53.40	52.93	52.40	53.31	52.94	54.08	51.66	47.66	50.91	50.35	50.64
Fibre % bagasse	45.21	43.79	44.37	44.68	44.14	44.36	42.86	44.94	49.07	46.77	47.29	47.02
Ash % bagasse	-	-	-	-	-	4.34	4.15	-	-	-	-	-
LCV (kJ per kg bagasse) #	-	-	-	-	-	6424	6212	-	-	-	-	-
<b>MIXED JUICE</b>												
Mixed juice % cane	117.26	119.80	118.68	86.48	137.81	116.48	108.56	104.43	122.11	122.30	122.91	122.59
Brix % mixed juice	13.26	13.23	13.24	13.26	13.19	13.21	14.06	14.45	13.83	13.13	13.28	13.20
Apparent purity (%)	85.80	86.03	85.93	85.37	84.60	84.84	86.26	85.97	86.99	87.19	87.49	87.33
Purity difference(MJ - DAC)	-1.26	-0.94	-1.08	0.24	0.59	0.36	0.69	-0.63	0.09	0.27	0.51	0.39
Suspended solids % mixed juice	0.67	0.22	0.42	0.65	0.64	0.64	1.11	0.40	0.07	0.15	0.15	0.15
<b>CLARIFIED JUICE</b>												
Brix % clarified juice	-	-	12.81	-	-	13.50	14.11	14.38	13.41	-	-	13.17
Apparent purity (%)	-	-	85.67	-	-	84.46	85.36	87.07	87.87	-	-	87.02
Purity difference(CJ - MJ)	-	-	-0.26	-	-	-0.38	-0.90	1.11	0.89	-	-	-0.31
Average pH	-	-	7.1	-	-	7.1	6.9	6.9	7.3	-	-	6.9
<b>CLARIFIER MUD</b>												
Tons clarifier mud	-	-	-	-	-	-	-	-	-	56442	48681	105123
Pol % clarifier mud	-	-	-	-	-	-	-	-	-	11.47	11.83	11.64
Brix % clarifier mud	-	-	-	-	-	-	-	-	-	13.45	13.87	13.64
Insoluble solids % clarifier mud	-	-	-	-	-	-	-	-	-	3.37	3.46	3.41
<b>FILTER CAKE</b>												
Pol % filter cake	-	-	0.87	-	-	2.06	1.33	1.18	0.76	-	-	-
Moisture % filter cake	-	-	73.07	-	-	-	78.69	-	70.60	-	-	-
Filter cake % cane	-	-	2.60	-	-	0.86	6.01	1.64	1.00	-	-	-
Filter wash index	-	-	103.4	-	-	97.9	99.6	100.5	103.1	-	-	-
Purity difference(CJ - filtrate)	-	-	1.95	-	-	1.84	2.17	6.37	2.95	-	-	-
<b>SYRUP</b>												
Brix % syrup	-	-	65.22	-	-	67.10	67.45	57.12	66.86	-	-	66.84
Apparent purity (%)	-	-	86.87	-	-	83.92	85.60	86.41	87.75	-	-	87.25
Purity difference(Syrup - MJ)	-	-	0.94	-	-	-0.92	-0.66	0.45	0.77	-	-	-0.08
Average pH	-	-	6.0	-	-	5.7	6.1	6.1	6.1	-	-	6.3
<b>FINAL MOLLASSES</b>												
Refractometer brix	-	-	83.54	-	-	86.81	80.57	80.08	85.05	-	-	85.17
Pol/refractometer brix purity	-	-	31.94	-	-	33.73	33.33	40.24	36.33	-	-	36.13
Purity difference(true-target)	-	-	-	-	-	-	-	-	-	-	-	-
Reducing sugars % \$	-	-	11.69	-	-	-	17.41	-	-	-	-	15.26
Sulphated ash %	-	-	13.14	-	-	-	13.40	-	-	-	-	15.26
Reducing sugars/ash ratio	-	-	0.89	-	-	-	1.30	-	-	-	-	1.00
Final molasses at 85° brix % cane	-	-	3.94	-	-	4.63	3.71	3.99	3.67	-	-	3.60

\* Cane diffuser

# Lower Calorific Value (LCV) = 18260.00 - 31.14 Bx % bagasse - 207.01 moisture % bagasse - 182.60 ash % bagasse

\$ Lane &amp; Eynon

**TABLE B2 (continued)**  
**ANALYSIS OF BAGASSE, JUICES, FILTER CAKE, SYRUP AND FINAL MOLASSES**  
**SWAZILAND, MALAWI, ZIMBABWE, ZAMBIA, TANZANIA AND MOZAMBIQUE FACTORIES**  
**(SEASON 2013 - 2014)**

<b>SYMBOLS OF FACTORIES</b>	<b>TR-A *</b>	<b>TR-B</b>	<b>TR-AVE</b>	<b>NK-A</b>	<b>NK-B</b>	<b>NK-AVE</b>	<b>MW</b>	<b>RU</b>	<b>MA</b>	<b>MB</b>	<b>XN</b>
<b>FINAL BAGASSE</b>											
Pol % bagasse	1.45	1.84	1.57	1.82	2.08	1.94	2.54	2.64	1.89	1.77	1.23
Moisture % bagasse	51.83	52.76	52.12	50.34	50.88	50.59	49.34	49.14	47.84	48.88	51.59
Fibre % bagasse	45.22	43.58	44.72	46.57	45.71	46.18	46.38	46.72	48.48	45.81	45.97
Ash % bagasse	-	-	-	-	-	-	5.55	5.22	2.50	3.46	3.75
LCV (kJ per kg bagasse) #	-	-	-	-	-	-	6899	7006	7785	7345	6818
<b>MIXED JUICE</b>											
Mixed juice % cane	118.16	116.04	117.53	114.44	110.98	112.78	92.19	103.30	108.69	101.26	121.32
Brix % mixed juice	13.65	13.81	13.70	14.10	14.53	14.31	14.63	13.07	14.17	15.14	13.04
Apparent purity (%)	86.88	86.80	86.86	86.65	86.90	86.77	84.69	84.26	86.79	86.06	87.18
Purity difference(MJ - DAC)	0.85	0.65	0.79	0.83	1.09	0.96	1.52	0.71	0.06	0.35	0.29
Suspended solids % mixed juice	0.23	0.32	0.25	0.23	0.77	0.48	1.38	1.04	0.73	0.75	0.17
<b>CLARIFIED JUICE</b>											
Brix % clarified juice	-	-	13.81	-	-	14.46	14.90	13.37	14.13	15.08	12.70
Apparent purity (%)	-	-	87.04	-	-	86.80	85.63	84.59	86.89	86.07	86.73
Purity difference(CJ - MJ)	-	-	0.18	-	-	0.03	0.94	0.33	0.10	0.01	-0.45
Average pH	-	-	7.0	-	-	6.9	7.7	7.0	7.0	7.0	7.4
<b>CLARIFIER MUD</b>											
Tons clarifier mud	4380	-	4380	124560	-	124560	-	-	-	-	126294
Pol % clarifier mud	11.42	-	11.42	10.20	-	10.20	-	-	-	-	10.93
Brix % clarifier mud	13.13	-	13.13	11.94	-	11.94	-	-	-	-	12.82
Insoluble solids % clarifier mud	2.17	-	2.17	11.64	-	11.64	-	-	-	-	2.67
<b>FILTER CAKE</b>											
Pol % filter cake	-	-	1.59	-	-	2.09	1.50	1.24	1.42	0.60	-
Moisture % filter cake	-	-	-	-	-	-	-	-	80.11	70.35	-
Filter cake % cane	-	-	2.52	-	-	2.45	4.13	3.74	4.06	3.97	-
Filter wash index	-	-	99.2	-	-	98.9	98.2	97.8	100.3	100.4	-
Purity difference(CJ - filtrate)	-	-	2.09	-	-	1.25	2.88	1.97	0.97	0.06	-
<b>SYRUP</b>											
Brix % syrup	-	-	65.68	-	-	65.66	63.22	64.60	61.37	67.98	62.90
Apparent purity (%)	-	-	86.73	-	-	86.41	84.17	83.12	86.53	86.25	86.81
Purity difference(Syrup - MJ)	-	-	-0.13	-	-	-0.36	-0.52	-1.14	-0.26	0.19	-0.37
Average pH	-	-	6.2	-	-	6.1	6.4	6.6	6.0	6.1	6.3
<b>FINAL MOLASSES</b>											
Refractometer brix	-	-	86.34	-	-	86.99	80.22	82.93	83.17	84.18	85.00
Pol/refractometer brix purity	-	-	34.55	-	-	36.61	36.52	36.97	35.44	38.53	32.79
Purity difference(true-target)	-	-	-	-	-	-	-	-	-	-	-
Reducing sugars % \$	-	-	-	-	-	-	-	-	-	-	-
Sulphated ash %	-	-	-	-	-	-	-	-	-	-	-
Reducing sugars/ash ratio	-	-	-	-	-	-	-	-	-	-	-
Final molasses at 85° brix % cane	-	-	3.65	-	-	3.97	3.68	4.03	3.52	3.73	3.77

\* Cane diffuser

# Lower Calorific Value (LCV) = 18260.00 - 31.14 Bx % bagasse - 207.01 moisture % bagasse - 182.60 ash % bagasse

\$ Lane &amp; Eynon

**TABLE C1**  
**MASSECUITES, EXHAUSTIONS, CLARIFYING AGENTS AND ADDITIONAL FUELS.**  
**SOUTH AFRICAN FACTORIES (SEASON 2013-2014)**

<b>SYMBOLS OF FACTORIES</b>	<b>ML</b>	<b>KM</b>	<b>PG</b>	<b>UF</b>	<b>FX</b>	<b>AK</b>	<b>DL</b>	<b>MS</b>	<b>GH</b>	<b>NB</b>	<b>UC</b>	<b>ES</b>	<b>SZ</b>	<b>UK</b>	<b>INDUSTRY</b>
<b>A - MASSECUITE</b>															
m <sup>3</sup> per ton brix in mixed juice(adj.)	1.23	-	1.21	0.92	1.07	1.02	0.96	1.07	1.09	1.22	1.14	0.99	1.13	1.06	0.96
Refractometer brix of massecuite	92.83	91.80	92.21	92.49	93.12	92.70	93.02	92.88	92.58	92.37	92.10	92.77	92.58	92.61	92.66
Purity of massecuite (%)	87.56	85.58	86.40	84.61	85.61	84.51	86.23	83.88	87.43	87.29	87.20	86.96	87.00	86.94	86.41
Purity of A - molasses (%)	74.81	68.03	73.65	69.99	67.50	65.32	67.89	68.11	72.07	72.91	71.16	70.03	70.42	68.50	70.47
Purity drop (%)	12.75	17.55	12.75	14.62	18.11	19.19	18.34	15.77	15.36	14.38	16.04	16.93	16.57	18.44	15.93
Exhaustion (%)	57.81	64.14	56.00	57.58	65.09	65.48	66.24	58.95	62.90	60.80	63.78	64.96	64.41	67.34	62.45
Pty of A-massecuite - purity syrup (%)	2.38	-0.07	1.16	0.01	1.55	-0.35	0.71	0.84	0.09	0.08	0.30	0.01	0.36	0.14	0.73
Pty of remelt (%)	88.13	81.68	86.06	84.31	87.66	83.67	85.69	85.07	84.95	85.75	86.73	86.71	86.92	85.41	85.56
<b>B - MASSECUITE</b>															
m <sup>3</sup> per ton brix in mixed juice(adj.)	0.66	-	0.44	0.37	0.40	0.36	0.31	0.26	0.44	0.52	0.40	0.35	0.41	0.43	0.37
Refractometer brix of massecuite	93.65	93.80	94.08	95.35	95.01	94.66	93.88	93.58	94.65	94.61	94.38	95.44	94.68	94.46	94.49
Purity of massecuite (%)	74.09	69.62	73.18	69.48	69.48	66.37	69.11	68.75	72.17	73.03	71.16	70.59	71.66	70.06	71.26
Purity of B - molasses (%)	54.36	47.02	53.10	48.69	44.59	47.78	46.83	47.86	48.77	50.18	48.75	46.80	49.52	50.20	49.52
Purity drop (%)	19.73	22.60	20.08	20.79	24.89	18.59	22.28	20.89	23.40	22.85	22.41	23.79	22.14	19.86	21.74
Exhaustion (%)	58.35	61.27	58.51	58.32	64.65	53.64	60.63	58.28	63.30	62.81	61.45	63.35	61.21	56.92	60.44
<b>C - MASSECUITE</b>															
m <sup>3</sup> per ton brix in mixed juice(adj.)	0.10	-	0.40	0.25	0.25	0.27	0.28	0.33	0.29	0.28	0.20	0.22	0.24	0.26	0.22
Refractometer brix of massecuite	96.62	96.65	96.93	96.96	96.61	96.88	96.43	95.86	97.01	96.72	97.85	97.36	96.61	97.31	96.80
Purity of massecuite (%)	57.59	52.97	56.30	55.68	54.90	55.03	53.70	55.84	54.38	57.79	53.11	52.90	55.85	55.83	55.41
Purity of C - molasses (%)	36.71	33.91	37.75	36.58	34.21	36.16	32.93	35.97	38.15	38.78	37.60	37.16	37.57	38.17	36.41
Crystal content (%)	31.88	27.87	28.89	29.20	30.38	28.63	29.86	29.75	25.45	30.04	24.32	24.39	28.30	27.79	28.92
Exhaustion (%)	57.29	54.44	52.94	54.09	57.28	53.71	57.66	55.58	48.24	53.74	46.79	47.36	52.44	51.16	53.92
<b>TOTAL VOLUME ALL RAW MASSECUTES</b>															
m <sup>3</sup> per ton brix in mixed juice(adj.)	1.98	-	2.06	1.54	1.72	1.65	1.54	1.66	1.82	2.02	1.74	1.55	1.78	1.75	1.55
<b>WHITE SUGAR MASSECUTES</b>															
Massecuite (kg sugar per m <sup>3</sup> )	166	-	1966	-	-	-	-	-	583	367	-	-	-	-	460
Tons limestone per 1000 tons white sugar	-	-	67.65	-	-	-	-	-	29.55	-	-	-	-	-	23.04
Tons coke per 1000 tons white sugar	-	-	6.73	-	-	-	-	-	-	-	-	-	-	-	1.12
Tons phosphoric acid per 1000 tons white sugar	-	-	-	-	-	-	-	-	-	1.26	-	-	-	-	0.33
Tons sulphur per 1000 tons white sugar	0.47	-	0.30	-	-	-	-	-	0.21	0.18	-	-	-	-	0.23
Phosphoric acid ppm mixed juice(unadj.)	-	-	-	-	-	-	-	-	-	-	40.76	41.04	1.41	1.85	4.38
Flocculant ppm mixed juice(unadj.)	3.62	4.85	4.10	11.03	2.03	3.90	0.92	3.24	3.09	8.67	2.68	5.68	5.61	1.44	4.43
Tons lime per 1000 tons cane	7.43	0.63	-	-	0.65	0.65	-	1.29	-	0.53	0.44	0.53	0.50	0.51	1.04
Enzyme (ppm sugar)	-	-	-	-	-	-	49.43	3.15	1.50	-	-	0.92	23.59	7.18	5.74
<b>ADDITIONAL FUELS PER 1000 TONS CANE</b>															
Tons of coal	30.27	1.38	13.76	8.07	8.04	8.21	1.02	16.08	1.93	8.13	4.76	0.06	14.89	0.32	8.79
Tons of wood	-	-	0.08	1.76	0.52	-	0.23	0.04	-	-	0.41	0.38	-	-	0.21
Converted into bagasse *	121.07	5.54	55.13	34.39	32.78	32.82	4.37	64.35	7.72	32.54	19.55	0.71	59.57	1.28	35.42

\* 1 ton coal is equivalent to 4 tons of bagasse

1 ton firewood is equivalent to 1.2 tons of bagasse

1 ton sulphur dioxide is equivalent to 0.5 tons of sulphur



**TABLE C2**  
**MASSECUITES, EXHAUSTIONS, CLARIFYING AGENTS AND ADDITIONAL FUELS**  
**SWAZILAND, MALAWI, ZIMBABWE, ZAMBIA, TANZANIA AND MOZAMBIQUE FACTORIES (SEASON 2013 - 2014)**

<b>SYMBOLS OF FACTORIES</b>	<b>MH</b>	<b>UB</b>	<b>SM</b>	<b>NH</b>	<b>DW</b>	<b>HV</b>	<b>TR</b>	<b>NK</b>	<b>MW</b>	<b>RU</b>	<b>MA</b>	<b>MB</b>	<b>XN</b>
<b>A - MASSECUITE</b>													
m <sup>3</sup> per ton brix in mixed juice (adj)	1.12	0.93	1.02	1.16	0.92	1.07	-	1.02	1.06	0.90	1.03	0.64	-
Refractometer brix of massecuite	93.45	93.02	92.55	94.52	90.62	92.48	92.59	93.04	92.30	92.46	92.82	92.51	91.90
Purity of massecuite (%)	88.74	85.74	85.78	88.66	88.17	87.68	86.26	87.78	85.52	83.27	86.38	86.13	87.19
Purity of A - molasses (%)	69.81	67.28	71.21	73.72	74.40	72.12	70.36	71.64	70.33	68.38	70.07	68.03	67.44
Purity drop (%)	18.93	18.45	14.57	14.94	13.77	15.56	15.90	16.13	15.19	14.89	16.31	18.10	19.75
Exhaustion (%)	70.66	65.79	59.00	64.12	61.02	63.65	62.19	64.82	59.86	56.56	63.09	65.74	69.57
Purity of A-massecuite - pty syrup (%)	1.87	1.82	0.18	2.25	0.42	0.43	-0.47	1.37	1.35	0.15	-0.15	-0.12	0.38
Purity of remelt (%)	84.89	86.29	85.47	85.30	88.85	87.46	83.87	85.67	83.61	85.57	87.55	86.10	85.39
<b>B - MASSECUITE</b>													
m <sup>3</sup> per ton brix in mixed juice (adj)	0.43	0.42	0.45	0.35	0.46	0.45	-	0.46	0.53	0.41	0.36	0.23	-
Refractometer brix of massecuite	94.55	94.26	94.23	94.34	93.39	93.20	93.82	94.40	94.82	94.20	93.46	94.25	93.24
Purity of massecuite (%)	70.35	69.25	72.80	71.89	72.50	72.47	70.74	73.01	71.44	69.49	70.19	67.86	68.29
Purity of B - molasses (%)	48.20	45.93	50.28	53.80	52.10	53.29	50.75	52.83	51.64	49.18	45.64	48.10	46.97
Purity drop (%)	22.15	23.32	22.52	18.09	20.41	19.18	19.99	20.18	19.81	20.30	24.56	19.76	21.32
Exhaustion (%)	60.78	62.27	62.22	54.48	58.76	56.66	57.38	58.59	57.32	57.49	64.35	56.11	58.87
<b>C - MASSECUITE</b>													
m <sup>3</sup> per ton brix in mixed juice (adj)	0.22	0.29	0.22	0.21	0.24	-	-	0.27	0.26	0.25	0.21	0.70	-
Refractometer brix of massecuite	97.97	96.56	97.86	97.02	96.04	96.02	96.41	96.73	96.73	96.93	96.95	84.18	94.79
Purity of massecuite (%)	50.07	53.29	53.54	57.25	56.95	54.59	55.26	57.20	52.99	54.41	53.13	55.27	53.46
Purity of C - molasses (%)	31.94	33.73	33.33	40.24	36.33	36.13	34.55	36.61	36.52	36.97	35.44	38.53	32.79
Crystal content (%)	26.10	28.50	29.67	27.62	31.11	27.75	30.51	31.43	25.10	26.82	26.57	22.93	29.15
Exhaustion (%)	53.21	55.38	56.63	49.72	56.87	52.95	57.26	56.80	48.96	50.84	51.59	49.28	57.53
<b>TOTAL VOLUME ALL RAW MASSECUITES</b>													
m <sup>3</sup> per ton brix in mixed juice	1.78	1.64	1.70	1.71	1.62	-	-	1.75	1.85	1.56	1.60	1.57	-
<b>WHITE SUGAR MASSECUITES</b>													
Massecuite (kg sugar per m <sup>3</sup> )	638	525	-	470	456	-	-	85	-	-	-	-	-
Tons phosphoric acid per 1000 tons white sugar	-	-	-	0.70	-	-	-	0.84	-	-	-	-	-
Tons sulphur per 1000 tons white sugar	0.06	0.17	-	-	0.16	-	-	-	-	-	-	-	-
Phosphoric acid ppm mixed juice(unadj.)	-	-	-	-	-	-	-	0.1	-	-	-	-	-
Flocculant ppm mixed juice(unadj.)	6.9	-	3.3	-	2.0	4.1	2.9	2.5	5.0	3.2	3.9	5.1	5.9
Tons lime per 1000 tons cane	0.4	0.7	0.6	0.7	0.7	0.5	0.4	0.4	0.4	0.3	0.4	0.5	0.6
Enzyme (ppm sugar)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>ADDITIONAL FUELS PER 1000 TONS CANE</b>													
Tons of coal	6.42	3.03	4.35	-	-	2.91	4.69	-	-	-	0.78	1.70	1.32
Tons of wood	40.6	31.6	17.7	0.13	0.03	0.04	-	-	0.97	0.06	-	0.21	0.08
Converted into bagasse *	74.42	49.98	38.68	0.16	0.04	11.70	18.77	-	1.17	0.07	3.14	7.05	5.39

\* 1 ton coal is equivalent to 4 tons of bagasse

1 ton firewood is equivalent to 1.2 tons of bagasse

1 ton sulphur dioxide is equivalent to 0.5 tons of sulphur

**TABLE D**  
**COMPARATIVE MANUFACTURING DATA OF RECENT YEARS**  
**(SOUTH AFRICAN FACTORIES)**

	2013/2014	2012/2013	2011/2012	2010/2011	2009/2010
<b>Throughput and time efficiency #</b>					
Tons cane per hour	285.76	269.99	292.62	276.22	293.55
Tons fibre in bagasse per hour	42.33	40.91	43.92	40.02	42.88
Overall time efficiency	79.31	75.70	74.05	76.87	76.88
<b>Cane</b>					
Sucrose % cane	13.84	13.46	12.94	14.14	13.68
Fibre % cane	15.04	15.41	15.27	14.71	14.87
<b>Mixed juice</b>					
Sucrose purity(MJ adj.)	86.91	86.35	85.90	85.89	86.14
(Glucose + Fructose)/ash in M.J.(unadj.)	0.95	1.00	0.95	1.08	0.95
<b>Milling</b>					
Imbibition % fibre	331	333	331	352	338
Extraction (sucrose based)	97.23	97.19	97.14	97.28	97.44
Pol % bagasse	1.22	1.19	1.17	1.26	1.14
Moisture % bagasse	50.66	50.18	50.67	50.45	50.24
Bagasse % cane	31.37	31.75	31.73	30.57	30.71
LCV bagasse kJ/kg	7116	7153	7017	7227	7263
Available kJ in bag/kg brix in MJ (adj)	14419	14995	15215	13789	14415
<b>Recoveries</b>					
Boiling house recovery (sucrose based)	87.23	86.99	86.84	87.16	87.88
Overall recovery (sucrose based)	84.81	84.55	84.36	84.78	85.63
Tons cane per ton sugar	8.48	8.75	9.12	8.30	8.50
<b>Filter cake</b>					
Pol % filter cake	2.19	2.26	1.98	1.55	1.66
Filter cake % cane	1.61	1.66	1.60	1.36	1.29
<b>Final molasses</b>					
Brix % final molasses	83.53	83.10	83.55	84.12	84.45
Sucrose/refractometer brix purity	38.53	38.77	38.16	37.99	37.49
Final molasses @ 85° brix % cane	4.02	4.09	4.07	4.41	4.03
<b>Average sugar polarisation</b>					
	99.57	99.59	99.57	99.57	99.58
<b>Sucrose lost % sucrose in cane</b>					
Lost in bagasse	2.77	2.81	2.86	2.72	2.56
Lost in filter cake	0.26	0.28	0.24	0.15	0.16
Lost in final molasses	9.52	10.02	10.19	10.06	9.39
Undetermined losses	2.64	2.35	2.35	2.28	2.27
Lost in boiling house	12.42	12.64	12.78	12.49	11.81
Total losses	15.19	15.45	15.64	15.22	14.37
<b>M<sup>3</sup> massecuite per ton Bx in M.J.</b>					
A - massecuite	0.96	0.96	0.94	0.93	0.93
B - massecuite	0.37	0.38	0.36	0.35	0.35
C - massecuite	0.22	0.23	0.23	0.23	0.22
Total	1.55	1.57	1.53	1.50	1.51
<b>Exhaustion of massecuites</b>					
A - massecuite	62.45	61.36	61.42	62.87	63.39
B - massecuite	60.44	59.53	59.66	59.65	60.24
C - massecuite	53.92	53.85	54.15	54.81	55.26
Brix of syrup	66.26	65.65	65.28	65.48	65.45

# 2013/14 season's throughputs, for factories with double tandems, were calculated using concurrent crushing hours.

**TABLE E**  
**AVERAGE MANUFACTURING RESULTS BY MONTHLY PERIODS**  
**FOR SOUTH AFRICAN FACTORIES ( SEASON 2013/14 )**

End of month period		30 MAR 2013	27 APR 2013	01 JUN 2013	29 JUN 2013	27 JUL 2013	31 AUG 2013	28 SEP 2013	02 NOV 2013	31 NOV 2013	28 DEC 2013	01 FEB 2014
<b>Tons of sugar made and estimated</b>	<b>Month</b>	40953	166506	333013	291203	302551	388945	305218	303363	191921	37440	0
	<b>To-date</b>	40953	207459	540472	831675	1134226	1523171	1828389	2131751	2323673	2361113	2361113
<b>Tons cane crushed</b>	<b>Month</b>	432229	1619382	2947483	2427840	2521558	3058238	2360046	2438105	1772134	455955	0
	<b>To-date</b>	432229	2051610	4999094	7426934	9948492	13006729	15366775	17804880	19577015	20032970	20032970
<b>Tons cane crushed per hour (actual crushing)</b>	<b>Month</b>	229.44	269.84	296.54	305.58	307.26	300.56	290.36	280.08	258.24	200.50	0.00
	<b>To-date</b>	229.44	260.45	280.71	288.38	292.94	294.70	294.02	292.03	288.62	285.76	285.76
<b>Sucrose % cane</b>	<b>Month</b>	12.06	12.43	13.11	13.82	13.81	14.64	15.00	14.63	13.37	11.62	0.00
	<b>To-date</b>	12.06	12.35	12.80	13.13	13.31	13.62	13.83	13.94	13.89	13.84	13.84
<b>Fibre % cane</b>	<b>Month</b>	14.62	15.01	14.65	14.17	14.70	14.71	15.03	15.90	16.46	17.38	0.00
	<b>To-date</b>	14.62	14.93	14.76	14.57	14.58	14.61	14.68	14.84	14.99	15.04	15.04
<b>RV % cane</b>	<b>Month</b>	10.78	11.16	11.87	12.62	12.63	13.45	13.74	13.35	12.04	10.29	0.00
	<b>To-date</b>	10.78	11.08	11.55	11.90	12.08	12.40	12.61	12.71	12.64	12.58	12.58
<b>Tons cane per ton sugar</b>	<b>Month</b>	10.55	9.73	8.85	8.34	8.33	7.86	7.73	8.04	9.23	12.18	0.00
	<b>To-date</b>	10.55	9.89	9.25	8.93	8.77	8.54	8.40	8.35	8.43	8.48	8.48
<b>Extraction (sucrose based)</b>	<b>Month</b>	96.62	97.09	97.36	97.43	97.39	97.36	97.39	97.16	96.72	95.64	0.00
	<b>To-date</b>	96.62	96.99	97.21	97.29	97.32	97.33	97.34	97.31	97.26	97.23	97.23
<b>Imbibition % fibre</b>	<b>Month</b>	333	330	339	337	329	327	331	329	326	314	0
	<b>To-date</b>	333	330	335	336	334	332	332	332	331	331	331
<b>Pol % bagasse</b>	<b>Month</b>	1.27	1.14	1.13	1.21	1.19	1.27	1.25	1.26	1.27	1.38	0.00
	<b>To-date</b>	1.27	1.17	1.15	1.17	1.17	1.20	1.20	1.21	1.22	1.22	1.22
<b>Moisture % bagasse</b>	<b>Month</b>	52.98	51.28	50.74	50.47	50.25	50.43	50.38	50.52	51.01	51.16	0.00
	<b>To-date</b>	52.98	51.65	51.12	50.91	50.75	50.67	50.63	50.61	50.65	50.66	50.66
<b>Boiling house recovery (sucrose based)</b>	<b>Month</b>	81.04	84.81	88.16	88.69	88.81	88.81	88.17	87.12	83.42	73.62	0.00
	<b>To-date</b>	81.04	84.04	86.53	87.28	87.68	87.97	88.00	87.87	87.49	87.23	87.23
<b>Overall recovery (sucrose based)</b>	<b>Month</b>	78.30	82.34	85.83	86.41	86.50	86.46	85.87	84.65	80.68	70.41	0.00
	<b>To-date</b>	78.30	81.51	84.12	84.91	85.33	85.61	85.66	85.51	85.09	84.81	84.81
<b>Mixed juice sucrose purity</b>	<b>Month</b>	84.25	85.05	86.18	86.98	87.43	88.07	87.70	87.33	86.06	84.66	0.00
	<b>To-date</b>	84.25	84.89	85.66	86.11	86.46	86.86	87.00	87.04	86.96	86.91	86.91
<b>Pol/sucrose ratio in mixed juice</b>	<b>Month</b>	0.9798	0.9836	0.9876	0.9902	0.9932	0.9935	0.9930	0.9950	0.9941	0.9917	0.0000
	<b>To-date</b>	0.9798	0.9829	0.9857	0.9873	0.9888	0.9900	0.9905	0.9912	0.9914	0.9914	0.9914
<b>Sucrose/refractometer brix purity in final molasses</b>	<b>Month</b>	39.86	36.98	36.48	36.69	37.71	38.06	38.32	39.24	42.59	51.14	0.00
	<b>To-date</b>	39.86	37.63	36.96	36.87	37.07	37.30	37.47	37.72	38.22	38.53	38.53
<b>Sucrose lost in final molasses % sucrose in cane</b>	<b>Month</b>	12.71	10.47	9.29	8.67	8.63	8.40	8.92	9.63	12.15	16.10	0.00
	<b>To-date</b>	12.71	10.93	10.00	9.54	9.30	9.07	9.05	9.13	9.39	9.52	9.52
<b>Undetermined lost sucrose % sucrose in cane</b>	<b>Month</b>	5.11	4.01	2.04	2.13	2.05	2.28	2.37	2.57	3.50	8.75	0.00
	<b>To-date</b>	5.11	4.24	2.85	2.60	2.46	2.41	2.41	2.43	2.52	2.64	2.64
<b>Pol/sucrose ratio FM</b>	<b>Month</b>	0.9054	0.9403	0.9127	0.9277	0.9380	0.9588	0.9582	0.9639	0.9612	0.9643	0.0000
	<b>To-date</b>	0.9054	0.9320	0.9210	0.9231	0.9267	0.9342	0.9382	0.9421	0.9442	0.9449	0.9449

**TABLE F**  
**CANE VARIETIES AND RAINFALL**  
**(SEASON 2013 - 2014)**  
**PERCENTAGE BY MASS**

Factories	N 12	N 14	N 16	N 17	N 19	N 21	N 22	N 23	N 25	N 26	N 27	N 29	N 30	N 31	N 32	N 35	N 36	N 39	N 41	N 43	N 46	N 47	N 48	NCo 376	MIXED VARIETY	UNKNOWN AND	BURNT	* RAINFALL
<b>ML</b>	-	8.1	-	-	12.8	-	0.8	9.1	27.7	0.6	-	-	0.5	-	3.6	-	22.1	-	1.8	-	5.6	-	-	-	3.1	4.3	99.8	564
<b>KM</b>	-	13.7	-	-	20.0	-	0.5	9.6	19.0	0.1	-	-	0.3	-	5.0	-	16.3	-	3.6	0.1	2.9	-	-	-	6.5	2.3	99.3	368
<b>PG</b>	-	5.7	-	-	2.3	-	0.3	7.7	13.2	2.9	-	-	0.1	-	0.1	-	18.5	-	25.8	3.5	5.1	-	-	-	8.8	6.1	98.3	377
<b>UF</b>	0.1	0.4	-	2.0	31.9	0.1	0.4	6.7	8.1	0.9	8.5	1.3	-	-	0.1	-	5.2	0.5	8.7	0.7	0.1	-	-	2.5	4.6	17.1	97.8	435
<b>FX</b>	1.7	0.3	0.1	2.4	4.3	0.3	-	2.3	7.7	0.1	14.3	1.0	-	-	-	2.0	9.4	3.5	12.5	0.7	0.1	-	-	3.1	3.3	30.8	81.1	437
<b>AK</b>	14.4	0.1	2.5	1.0	1.0	1.1	-	-	0.3	-	14.9	1.1	-	4.0	-	1.2	1.6	16.4	4.1	3.0	-	0.1	0.2	1.3	6.8	25.0	97.1	891
<b>DL</b>	9.7	-	2.3	0.7	0.4	0.4	-	-	-	-	13.7	1.1	-	11.8	-	-	0.3	19.1	0.6	2.9	-	0.1	-	3.2	0.2	33.6	92.4	509
<b>MS</b>	9.2	-	1.4	1.4	0.2	0.4	-	-	-	-	6.8	1.2	-	18.4	-	2.3	0.2	19.1	3.2	-	-	0.8	0.1	5.4	6.4	23.5	76.6	652
<b>GH</b>	7.3	0.1	5.2	1.0	1.1	0.4	-	-	-	0.5	8.3	2.2	-	6.5	-	1.0	0.2	14.1	0.7	-	0.1	0.4	-	5.8	9.4	36.0	83.7	675
<b>NB</b>	58.4	-	5.0	-	-	0.6	-	-	0.1	-	0.1	0.1	-	11.0	-	4.3	1.5	4.8	2.0	-	-	0.2	1.8	-	0.3	10.1	96.6	464
<b>UC</b>	43.2	-	6.7	-	-	-	-	0.1	-	-	-	-	-	14.5	-	1.9	3.9	11.5	1.7	-	-	-	3.3	-	-	13.1	99.6	486
<b>ES</b>	56.0	-	2.3	0.1	-	-	-	-	-	-	-	-	0.1	17.7	-	3.2	1.8	2.1	1.8	-	-	0.1	1.2	-	0.7	12.8	92.0	607
<b>SZ</b>	27.3	0.1	2.4	-	-	0.5	-	-	-	-	2.7	0.8	-	0.7	-	0.1	0.1	14.5	1.1	-	-	0.3	-	1.0	9.7	38.9	75.7	741
<b>UK</b>	24.9	0.1	0.4	-	-	0.6	-	-	-	-	0.8	0.5	-	3.5	-	0.1	0.3	24.4	0.6	-	-	-	0.1	1.5	2.4	40.0	93.5	859
<b>Average SA Factories</b>	16.2	2.8	1.8	0.6	6.0	0.3	0.2	3.0	6.7	0.4	5.0	0.6	0.1	5.1	0.9	1.1	6.8	8.1	5.0	0.4	1.2	0.1	0.4	1.6	4.9	20.8	91.0	
<b>MH</b>	-	0.7	-	-	8.2	-	-	24.0	48.0	0.5	-	-	-	-	0.2	-	2.8	-	0.6	-	2.1	-	-	9.2	1.9	1.8	-	264
<b>UB</b>	-	1.6	-	-	8.8	-	-	25.1	31.8	0.1	-	-	-	-	-	-	1.3	-	-	-	1.9	-	-	4.5	24.8	-	-	300
<b>SM</b>	-	0.6	-	-	1.7	-	-	24.8	48.1	0.6	-	-	-	-	0.2	-	3.5	-	0.9	-	6.6	-	-	8.8	3.6	0.5	-	357
<b>NH</b>	-	3.9	-	-	-	-	-	-	5.1	-	-	-	-	-	34.0	-	2.1	-	-	-	-	-	-	-	7.5	47.4	-	213
<b>DW</b>	-	11.2	-	-	2.2	-	-	4.3	5.2	-	-	-	-	-	1.7	-	2.0	-	-	-	-	-	-	1.8	8.9	62.7	-	238
<b>HV</b>	-	79.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.7	0.6	12.0	-	88
<b>TR</b>	-	85.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	13.3	-	126
<b>NK</b>	-	0.1	-	-	8.8	-	0.1	11.7	54.9	-	-	-	-	-	-	-	-	-	16.6	-	0.8	-	-	-	6.2	0.8	100.0	106
<b>MW</b>	0.8	-	-	-	2.2	-	-	0.2	16.3	-	0.1	-	0.1	-	-	-	1.1	0.1	12.1	-	-	-	-	47.0	8.5	11.5	-	1166
<b>RU</b>	0.8	-	-	-	2.2	-	-	0.2	16.3	-	0.1	-	0.1	-	-	-	1.1	0.1	12.1	-	-	-	-	47.0	8.5	11.5	-	1374
<b>MA</b>	-	-	-	0.2	12.0	-	-	58.4	10.7	-	0.0	0.2	-	-	0.8	-	-	-	5.4	-	0.5	-	-	2.4	5.6	3.8	100.0	78
<b>MB</b>	-	6.7	-	-	24.7	11.0	-	6.7	21.8	-	24.1	-	-	-	0.8	-	-	-	-	-	-	-	-	1.2	3.0	-	-	168
<b>XN</b>	-	0.5	-	-	0.2	-	-	27.9	51.1	0.8	5.4	-	-	5.4	-	-	2.0	-	-	-	-	-	-	2.2	9.4	-	100.0	184

\* Rainfall during the crushing season

**TABLE G**  
**TRANSPORT SUMMARY - SOUTH AFRICAN FACTORIES**  
**(SEASON 2013 - 2014)**  
**PERCENT OF CANE TRANSPORTED**

FACTORIES	ML	KM	PG	UF	FX	AK	DL	MS	GH	NB	UC	ES	SZ	UK	AVERAGE
<b>SOUTH AFRICAN RAILWAYS</b>	-	-	-	-	16.6	-	-	-	-	-	-	-	-	-	1.7
<b>TRAMS</b>	-	-	-	69.0	-	-	0.5	-	-	-	-	-	-	-	3.9
<b>TANKERS</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>ARTICULATED TRUCK DRIVEN VEHICLES</b>															
- Interlink	-	-	12.0	22.5	66.0	20.6	38.7	71.0	58.5	25.8	33.1	29.3	98.0	91.3	40.0
- Tri-Axle	-	-	14.9	-	0.5	-	10.7	2.4	11.6	1.5	2.0	9.8	-	-	3.5
- Hilo	3.1	-	3.8	6.4	0.6	-	6.4	-	0.1	2.0	-	-	2.0	6.5	1.9
<b>RIGID CHASSIS VEHICLES</b>															
- Truck	90.9	74.7	5.1	-	-	43.8	7.7	15.2	16.3	41.9	17.6	36.6	-	1.0	28.2
- Lorry	4.7	-	2.2	-	-	-	0.1	-	-	2.5	10.5	-	0.1	-	1.1
<b>TRACTOR DRIVEN VEHICLES</b>															
- Hilo	-	-	9.5	-	3.2	4.8	1.9	0.6	13.1	21.2	8.7	20.9	-	-	5.7
- Rig	1.3	22.4	0.3	-	1.5	17.0	16.1	0.9	0.3	2.8	2.2	-	-	0.1	5.2
- Interlink	-	2.8	52.2	2.2	11.7	13.8	18.0	9.9	0.2	2.4	25.9	3.4	-	1.0	8.8

**COMPARATIVE DATA OF REPORTING S.A. FACTORIES FROM 1925 ONWARDS**  
**TABLE H**

PERIOD (SEASON)	Percent Cane		Cane / sugar Ratio		Extraction	Pol % fibre in Bagasse	Percent Bagasse		Imbibition Percent		Mixed Juice		Final Molasses Suc/brix Purity Chem.suc.	Boiling House Recovery Pol based	Overall Recovery Pol based
	Pol	Fibre	Tel Quel	96° Pol Sugar			Pol based	Pol	Moisture	Cane	Fibre	Purity Pol based			
	Sucrose based				Sucrose based					Sucrose based	(F + G) / suc.ratio	Sucrose based	Sucrose based	Sucrose based	
Average 1925 - 1934	13.19	15.78	9.86	9.64	89.83	8.86	3.88	50.57	27.6	175	85.09	3.65	45.3	83.67	75.12
Average 1935 - 1944	13.53	15.30	8.96	8.73	92.05	7.05	3.11	51.60	32.6	213	86.01	3.22	43.3	88.36	81.34
Average 1945 - 1954	13.79	16.06	8.60	8.36	93.04	5.95	2.69	51.32	33.8	210	85.95	3.29	40.7	89.46	83.23
Average 1955 - 1964	13.53	15.49	8.75	8.49	93.43	5.73	2.51	52.78	36.3	235	85.24	3.67	39.6	89.58	83.69
Average 1965 - 1974	13.16	15.22	8.95	8.68	95.00	4.35	1.91	53.15	41.7	274	84.80	4.15	39.3	88.49	84.06
Average 1975 - 1980	12.80	15.61	9.09	8.77	96.20	3.26	1.45	52.50	46.3	309	84.85	5.37	38.4	88.92	85.54
<i>From 1981 onwards data are sucrose based</i>	Sucrose based				Sucrose based					Sucrose based		(F + G) / suc.ratio	Sucrose based	Sucrose based	Sucrose based
Average 1981 - 1984	12.44	15.88	9.44	9.12	97.12	2.36	1.09	51.74	52.6	347	85.17	5.88	37.2	87.25	84.74
Average 1985 - 1994	12.86	15.36	9.07	8.74	97.72	1.95	0.92	51.01	54.8	368	85.04	5.58	37.0	87.50	85.50
1995	11.73	15.84	9.99	9.64	97.69	1.78	0.83	51.70	54.9	356	83.60	6.09	37.3	85.93	83.94
1996	12.60	15.36	9.20	8.88	97.72	1.92	0.90	51.40	50.4	337	85.38	5.23	37.3	87.82	85.82
1997	12.62	15.38	9.15	8.83	97.74	1.91	0.90	51.12	49.9	334	86.15	4.72	37.5	88.09	86.10
1998	13.36	14.66	8.65	8.35	97.73	2.11	1.00	51.00	49.1	343	86.17	5.31	37.2	88.08	86.09
1999	13.77	14.76	8.36	8.06	97.93	1.97	0.94	50.81	52.3	362	86.51	4.73	37.7	88.33	86.50
2000	13.08	14.98	8.74	8.44	97.79	1.97	0.95	49.95	51.3	348	86.46	4.82	37.2	88.97	86.99
2001	13.11	14.97	8.81	8.50	97.74	2.02	0.95	50.81	54.3	369	85.92	4.94	37.1	88.18	86.19
2002	13.71	14.80	8.32	8.02	97.96	1.93	0.92	50.08	53.3	366	87.31	4.16	37.2	89.11	87.29
2003	13.70	14.81	8.42	8.12	97.87	2.01	0.96	50.34	54.5	375	86.36	4.59	37.9	88.14	86.26
2004	13.52	14.84	8.53	8.23	97.98	1.87	0.90	49.93	53.9	369	85.81	4.92	36.9	88.00	86.23
Average 1995 - 2004	13.12	15.04	8.82	8.51	97.82	1.95	0.93	50.71	52.4	356	85.97	4.95	37.4	88.07	86.14
2005	13.74	14.66	8.37	8.08	98.03	1.87	0.91	49.57	54.8	380	85.59	5.12	36.7	88.25	86.52
2006	12.85	14.95	8.99	8.68	97.84	1.91	0.92	49.76	54.5	372	85.55	4.98	37.4	87.51	85.61
2007	13.47	14.86	8.63	8.32	97.82	2.02	0.97	49.77	53.5	367	86.03	4.62	37.7	87.56	85.65
2008	13.69	14.95	8.46	8.16	97.61	2.23	1.06	50.26	51.3	349	86.49	4.41	37.5	88.05	85.94
2009	13.68	14.87	8.50	8.20	97.44	2.40	1.14	50.24	49.4	338	86.14	4.51	37.5	87.88	85.63
2010	14.14	14.71	8.30	8.01	97.28	2.66	1.26	50.45	51.0	352	85.89	5.17	38.0	87.16	84.78
2011	12.94	15.27	9.12	8.79	97.14	2.46	1.17	50.67	49.7	331	85.90	4.57	38.2	86.84	84.36
2012	13.46	15.41	8.75	8.44	97.19	2.50	1.19	50.18	50.5	333	86.35	4.72	38.8	86.99	84.55
2013	13.84	15.04	8.48	8.18	97.23	2.59	1.22	50.66	49.0	331	86.91	4.40	38.5	87.23	84.81
Average 2005 - 2013	13.53	14.97	8.62	8.32	97.51	2.29	1.09	50.17	51.5	350	86.09	4.72	37.8	87.50	85.32