

## **CTU - CANE TESTING UNIT**

### **Evolution of the Sugarcane Industry**

Since the inception of the Kenya Sugar Industry in the early 1900's payment of sugarcane has been based on tonnage irrespective of cane quality. This kind of cane payment system has several shortcomings.

The Kenyan Sugar industry produces at high costs and is under permanent threat of cheaper imports from lower cost producers, especially from sugar producing COMESA countries.

Some of the weaknesses in the sugar sector which hamper efficient cane production are:

- Low cane yields as a result of poor varieties, with low sucrose and high fibre content;
- Poor cane husbandry practices;
- A payment system for cane based weight instead of sucrose
- Processing of cane in factory
- Low factory performances in terms of sugar recovery

The Kenya Sugar Industry is in the process of shifting to a quality based cane payment system as opposed to the existing weight based cane payment system. The successful partnership between sugarcane growers and millers hinges on a trusted and equitable division of proceeds. At the heart of this is the impartial determination of the value of sugarcane delivered to the mill by each grower. Also to be noted is that this system puts pressure on the inefficient grower.

The quality based cane payment system to provide a strong incentive for:

- Growers to maximize sugar content in cane
- Millers to maximize sugar recovery

Some of the countries where this system has been successfully implemented include:

- Mauritius
- Jamaica
- Guyana
- Philippines
- South Africa
- Australia
- Swaziland
- Brazil

The sucrose based cane payment system will be managed through Cane Testing Units to be installed at all mills.

### **Why Shift to quality based payment system**

#### **a. Improvement in yields**

1. Good agronomic and husbandry practices to maximize yields as well as tonnes of sucrose per acre.

2. More care in choosing best performing cane varieties in terms of yields, ratoonability, disease resistance, sucrose content

To farmer – sucrose content maximization strategies

To miller- sucrose recovery per ton of cane strategies.

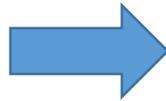


Better earnings

Higher rendement

Reduction of wastage

Overall high production



Low cost of production



higher profit for miller

- b. **Need for enhanced competitiveness:** the delivery of better quality cane to the miller will improve sugar recovery, production efficiency and ultimately reduce the cost of production.
- c. **Benchmarking nationally and internationally:** The payment based on quality will be instrumental in improving the yields for the grower and sucrose recovery for the miller. Internationally, Kenya will be able to compete as most leading sugar producers Brazil, Australia, Mauritius and South Africa and others pay cane based on quality.

## 2. Major Economic and Agronomic considerations in a quality based payment system

Best management practices are a key requirement for profitability in this system. Other salient considerations include;

- a. **Sucrose content:** In the proposed formula, high profit margins will depend on cane quality in terms of sucrose content. Breeding and adoption of sugarcane varieties with high sucrose content is therefore a must for profitability. Great attention must therefore be paid to causes of sucrose loss which include delayed transportation of harvested cane, delayed/premature harvesting and delayed crushing/poor handling of cane in the yards. In the event of this, both the miller and the farmer can lose substantive revenue.
- b. **Recovering Sucrose:** It must cost less to recover sucrose from a high sucrose cane than from a low sucrose cane. Both fibre and purity are known to effect recovery. High fibre has adverse effects on extraction, as it reduces availability of sucrose.
- c. **Deterioration of cane/harvesting age:** sugarcane starts deteriorating after attaining maturity age and more so after cutting. There is high economic importance of getting the cane milled as soon as possible.  
Delayed harvesting leads to losses associated with sucrose loss. Premature harvesting has the detrimental effects of harvesting cane whose sucrose build up has not reached the peak, hence leading to economic loss.

- d. Fertilizer Application: Fertilizer is a key input in ensuring that high quality cane production. The rate of application depends on many factors ranging from soil type to crop cycle. There is an economic optimum amount above and below which the profit margin necessarily decreases and it is most important that this level be aimed at in practice. Experiments have shown that while correct fertilizer application may be most profitable, incorrect, excessive or unbalanced applications may also result in losses.
- e. Factory efficiency: this is another key component of this formula which is of great importance. For efficient and effective sucrose recovery from sugarcane both the level of technology and method of extraction are important. Where the milling technology is inefficient, both the farmer and the miller will lose revenue due to poor sugar recoveries.
- f. Sugar Prices: whereas sugar prices fluctuate due to world economic dynamics, producers of sugar (millers and growers) when using cane payment based on quality are likely to survive any adverse effects than if they were not efficient.

#### **Cause of yield and sucrose loss in Cane**

- Poor husbandry practices
- Poor/delayed farm operations like planting; fertilizer application; weed management; harvesting; transportation
- Poor handling of cut cane
- Burnt cane
- Poorly ploughed field
- Poor seedcane quality
- Delayed transportation of harvested cane

#### **Best Management practices (BMPS) for High Yield and Sucrose**

- Good land Preparation
- Good variety choice
- Timely planting/Certified seedcane
- Weed management
- Fertilizer use
- Harvesting age

#### **WAY Forward**

- Identification of site-specific improved varieties of sugarcane
- Availability of high quality seed cane of the identified varieties
- Use of correct tillage systems (equipment, time and depth)
- Sample, analyze, interpret and report all soils before planting
- Use integrated fertilizer combinations eg 50:50 of inorganic P and organic P to supply 80kg P2O5/ha
- Apply the fertilizer so used at the appropriate time
- Harvest at physiological maturity and proper ratoon maintenance
- Adoption of improved cane varieties

#### **KENYA PAYMENT MODEL**

### 3. Quality based Formula

The sucrose based cane payment formula takes into consideration farmers sharing ratio, extraneous matter percentage, value of bi-products as well as factory efficiencies.

Price of sugarcane =  $\frac{\text{pol\%cane} \times \text{K} \times \text{R} \times \text{farmers share} \times \text{monthly average net price of sugar}}{1 + \text{E\%}}$

$$1 + \text{E\%}$$

Plus a percentage of the value of byproducts

Where:

**Pol % cane** is a measure of the sucrose content of cane

**K** is the expected mill extraction

**R** is the expected boiling house recovery

**Farmers share** is a fixed part of the net sugar cane price

**Monthly average net price of sugar** is the average price after deducting taxes and levies

**Percentage of the value of the by-products** is a value that shall be fixed by SCPC

**E %** is the proportion of extraneous matter delivered as cane.

#### **Economic Returns of the Quality Based Cane Payment System**

- High returns of the quality Cane (Generally more rewarding than the weight-based system)
- Envisaged improvement in milling technologies
- Emphasis for high quality production systems at farm level
- Room for more research for farm level production and milling technologies



A tractor full of sugar cane waits to be attended to at the Cane Testing Unit at the Sony sugar company

### **FREQUENTLY ASKED QUESTIONS**

**Q1: What is Cane Testing Services (CTS)?**

**ANSWER:** a laboratory system for measuring cane quality of cane

**Q2: Will CTS make me get better pay for my cane?**

**ANSWER:** CTS will not. Better cane quality will result in better pay.

**Q3: Can CTS be manipulated to favor one party?**

**ANSWER:** CTS will be managed by an independent company

**Q4: will weighbridge still be necessary?**

**ANSWER:** Quality based payment is a product of weight of cane and sucrose content therefore weigh bridges as well as laboratory analysis will be used.