Belize Sugar

NUESTRA INDUSTRIA AZUCARERA

SUGAR INDUSTRY NEWS | VOL. 1

WELCOME TO THE 1ST EDITION OF THE BELIZE SUGAR INDUSTRY NEWSLETTER

WHY AN INDUSTRY NEWSLETTER?

There are important issues all sugar industry stakeholders need to be aware of and understand, and we face important challenges all industry stakeholders need to respond to and be prepared for. The newsletter will highlight these important issues, and provide practical guidance for farmers, mill workers and other industry participants on how to make our industry prosper into the future.

HOW FREQUENTLY WILL THE NEWSLETTER BE PUBLISHED?

The last Thursday of each month will yield a new edition. The newsletter receives sponsorship from industry stakeholders and will be distributed free of charge to those with an interest in sugar-industry affairs.

HOW WILL I HAVE MY SAY?

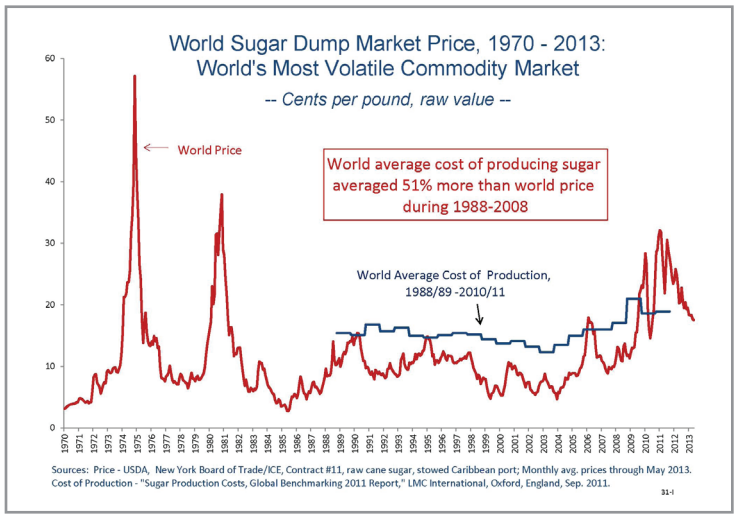
Contact us. Send ideas, thoughts and suggestions to Jessamyn at SIRDI [Jessamyn Ramos: (501) 671-8376 or jesamyn.sirdi@gmail.com]. We want to hear from you! Let us know what you want in your newsletter.

SAVE THE DATE!

Join us on April 26 at the BSI Club for a day of food, drinks and fun. Bring your children to enjoy games, laughter and prizes. Visit the educational booths to learn about farming research and how our mill works. We look forward to seeing you all there!

2017: PREPARING FOR THE CHALLENGE

October 2017, regulation that has limited production and sale of beet sugar and isoglucose (high fructose corn syrup) in the Belize's traditional export market, the European Union, will be lifted.



Why is everyone talking about 2017? Because from October 2017, regulation that has limited production and sale of beet sugar and isoglucose (high fructose corn syrup) in the Belize's traditional export market, the European Union, will be lifted. These quotas have contributed to the EU's high sugar prices for decades – up to double the global market price at times. Cane sugar producing countries like Belize have benefitted from this preferential market. But come 2017, all that will end.

European beet farmers don't have to ship their sugar half way around the world. They produce it very efficiently right next door to their market. This makes it cheaper. Without quotas regulating production, they will be able to flood the EU market with cheap sugar. This will bring sugar prices tumbling, likely settling around world market prices.

While Belize and other Caribbean producers will still be able to export sugar duty free to Europe after 2017, under the terms of their preferential access agreements, in reality the benefit will greatly diminish as lower prices will drive down revenue by 20 – 30% from current levels. A recent EU study on the potential impact of these changes outlined that the level of cane sugar imported into the EU post 2017 would drop substantially, and only the most efficient and competitive producers would remain viable.

To survive and remain competitive, by then, Belize will have had to reduce the cost of its sugar production substantially, through greater efficiency and improved cane quality. Thankfully, Belize is the most competitive Caribbean producer, with production costs on the lower end of the scale. But there is still a long way to go.

The challenge of 2017 is not something any one sector of the industry can overcome on its own. There is no magic wand to make the problem disappear. But if the industry works together to a common agenda to improve its competitiveness, and the Government and development partners play their part, too, the Belizean sugar industry can remain profitable beyond 2017.

This is the most important issue we face today, and there is no time to lose coming together to meet the challenge. BSI and BSCFA Directors recognized this need at a recent meeting in Orange Walk, where both agreed to co-operate together to design a strategic plan to prepare for the future.

So while the "2017" mood music is not the music we want to hear, it is music we must face – together, united, and confident that with clear and committed industry leadership and a strategic plan we can meet the challenge of 2017 and beyond. The sugar industry of Belize depends on it. The question for all industry stakeholders is, quite simply, are you prepared to play your part?

MAJOR IMPROVEMENTS AT THE TOWER HILL MILL

While there was significant investment in several sections of the Tower Hill Sugar Factory in preparation for the 2014 crop, there are five key areas that should be highlighted that are directly contributing to increased efficiencies and production. Let's take a tour:

Swing Back Cane Knife

At the Cane Yard, a new 2,500 hp swing-back cane knife was installed upstream of the cane shredder to assist with cane preparation. In the sugar industry, the higher the cane preparation index, the greater the sucrose extraction at the Mill. For every percentage point of increase in extraction there will be a significant addition to the bottom line for both Miller and Farmer.

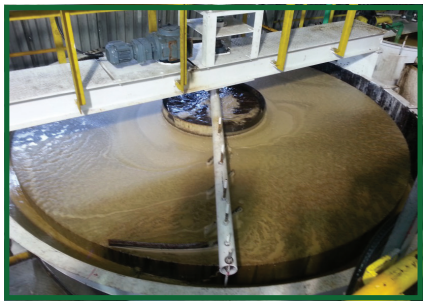
The electric drive systems for both the Feeder Cane Carrier and the Main Cane Carrier have been replaced with modern variable speed drives. This technology is more reliable and more responsive than the old system. This enhances mill throughput and sugar production.

In the Mill tandem, the major improvements are enhanced instrumentation and the installation of a perforated top roll at the No. 5 Mill. The perforated roll drains the squeezed cane juice more efficiently, reducing bagasse moisture and increasing sucrose extraction. Combined with the improved cane preparation, the upgrades at the Mills are projected to boost sucrose extraction by over a full percentage point during the 2014 crop.

The Evaporator Station was an area of significant expansion. Six new evaporator vessels (with a state of the art control system) were added to the existing four vessels to eliminate the customary 24 hour stops, every 2 weeks. There is no longer any need to stop production for evaporator cleaning and the only time that is now needed for planned maintenance should be reduced from 22 hours to an average of 6 hours, every 14 days, for the changing of shredder hammers and cane knives and to arc-weld mill rolls to minimalize slipping.

At the Pan Floor, where the cane syrup is crystallized into sugar grains in "vacuum pans," each vacuum pan has been fitted with a new mechanical stirrer. These stirrers reduce each pan cycle-time by around 15%, thus improving Boiling House efficiency and throughput. A new syrup clarifier has been installed to improve the quality of direct consumption sugars for local sale and for export.

Evaporator Station



Vacuum Pan

At the Power Plant, improvements are being made to the combustion systems to improve boiler efficiency and to the water treatment systems to improve water quality. The overall aim of these improvements is to maintain an efficient and reliable supply of steam and electricity to the Mill.

The mill is now in a better position to receive and process more cane more efficiently.

PROFITABLE CANE HARVESTING

ARTICLE SUBMITTED BY BSCFA, JAVIER BLANCO

The payment per ton of sugar cane is directly related to the quality of the sugar cane harvested and delivered. Test groups should strive to achieve purity in the first express juice at levels of more than 84% and mud level under 4.5%. **How can it be achieved?** The BSCFA, with Fairtrade funds, is implementing a Cane Quality Monitoring Program to assist farmers with harvesting and delivery best practices, including:

1. **Delivery by appointment:** Test groups are formed and register with the commitment to deliver fresh, mature cane. Each test group has an appointed delivery time in order to manage the "Kill-to-Mill" time.
2. **Pre-harvest assessments** are done to evaluate cane age, maturity and field conditions to plan the harvesting schedules.
3. **Timely burning** is controlled by the reaping groups and field officers are deployed to monitor that they are complying with the recommended times.
4. **Adequate cutting and loading:** reaping groups are monitored to comply with the recommendations of cutting and assembling bundles of cane for the loader not to push and load mud; as well as to cut the sugar cane stalk at the lowest possible point since sugar is concentrated in the first 8 inches of the stalk.

This program has been implemented three crop seasons in a row and seems to be very effective.

SAVE TIME AT THE CANE YARD

1 UNLOADING AT THE RAMP

2 GANTRY CRANE

3 AUTOMATIC DUMP

When the mill is grinding at its normal pace, why do cane trucks accumulate in the Cane Yard? The answer to that comes down to how best we can organize ourselves to utilize the available methods of unloading at the Tower Hill Mill. Some test groups like Corozal branch, and Guinea Grass/San Roman organize themselves very well to simultaneously utilize the dumper table and the Gantry Crane to unload their cane. Some farmers also utilize automatic dumping to unload.

When each test group organizes their trucks to unload 50% of their cane using the dumper table and 50% using the Gantry Crane, farmers will save time in the cane yard. Time that can be invested in the husbandry activities of the cane fields and with the family. It will also contribute to a constant supply of cane to the mill allowing quality testing to occur as scheduled.

TOWER HILL FACTORY AHEAD OF TARGET

Update as of February 19, 2014

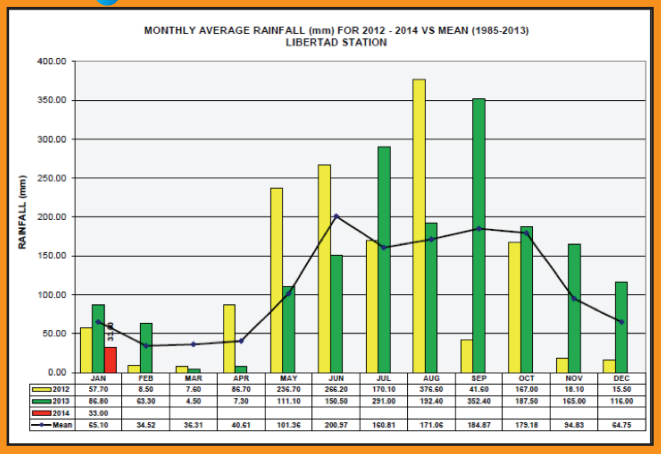
196,300 metric tons cane ground

330 tons per hour grind rate

8,200 tons per day average grind rate

10.49 tons cane/ tons sugar (TC/TS)

MONTHLY AVERAGE RAINFALL



The graph shows rainfall recorded at Tower Hill in 2012, 2013 and Jan 2014. It is very evident that rainfall since July to December 2013 was well above the normal and was not the best conditions for cane ripening and harvesting. In comparison to 2012 rainfall recorded for November 2013 was 146.9 mm higher than November 2012 and 70.17 mm above the long-term mean: December 2013 continued under very wet conditions with 100.5 mm higher than December 2012 and 51.25 mm above the long term mean.

FIRST FARMER AND FIRST CANE INTO THE BSI MILL FOR THE 2014 CROP

1 FIRST CANE TO MILL

Mr. Pedro Cawich of the San Narciso Branch was the the first cane farmer to deliver in the 2014 crop.

2 FIRST CANE SHREDDED

2014's first shredded cane to enter the mill after broken down by the newly installed swing back knife to assist with cane preparation.

3 FIRST SUGAR SHIPMENT

The first shipment of sugar for 2014 crop season sailed to England on Tuesday February 11th 2014, taking 8,500 tons of sugar a board the San Remo II.

TOP TIPS

SAN ESTEVAN GROUP (A); THE BEST QUALITY TEST GROUP SO FAR THIS SEASON:

1. Burn cane within twenty four hours of delivery – the longer you leave the cane, more sugar content is lost.
2. Don't include jacks and tops within cane delivery – because they reduce the TCTS.
3. Only use the piler to load bundles on top of each other, never to push bundles together as excessive mud can be loaded into the delivery truck.
4. Cut stalks as low to the ground as possible, as this is where the sugar is concentrated.

LICU Announces Sugar Cane Replanting Program

La Inmaculada Credit Union Limited (LICU) is now participating in the Sugar Cane Replanting Program (SCRP) through the generous funding from the EU and the Caribbean Development Bank to increase sugar cane production at the field level in order to increase sugar production and quality for export and to enhance the competitiveness of the industry.

- Affordable credit for sugar cane replanting for a term up to 4 years max., including 1 year grace period.
- All replanting loans will be coordinated in close collaboration with SIRDI to ensure timely inputs for maximum yields.

Orange Walk and Corozal District farmers apply now at SIRDI (contact 322-3141 or sirdi.belize@gmail.com) or at LICU (contact 322-2358 or 322-0483) to determine eligibility for this innovative program combining tailored financing and expert technical assistance to grow the sugar industry to its fullest potential!

La Inmaculada Credit Union Ltd.

WHEN IS SUGAR CANE MATURE AND READY TO BE MILLED?

Much like when we can tell a mango or a plum is ripe enough to be eaten, there is also a way to tell when the sugar cane is mature enough to be harvested and taken to the mill for sugar extraction. Sugar cane maturity is determined by the variety type, the plant age in months, the climatic conditions and husbandry care given to the plant.

Visual symptoms:

Some visual symptoms that can tell the maturity of the sugar cane are the yellowing or drying up of leaves, the plant core structure becomes weak, the quantity of leaves decrease to approximately 5 and the top internodes are notably shorter than the internodes of the rest of the stalk.

Quality parameters:

The most important parameters that tell the maturity of the sugar cane are the Brix, the sucrose percentage or POL, and apparent purity. Unlike POL, Brix can be measured in the field using a refracatometer.

- Brix Juice refer to the contents of total soluble solids in the juice, expressed as a percentage. Brix compounds include the sugars and non-sugar.

In order to determine if a cane field is mature enough to be harvested it is important to calculate the Maturity Index of that field that is simply the average relationship of the Brix reading of the superior and inferior part of the stalks of that field.

Four easy steps to determine Maturity Index of a cane field:

1. Select five points in the field, one point in each corner (maintaining 5-7 rows as borders) and one point in the center of the field.

2. At each point select 10 stalks at random. With a small tool drill each stalk at the second inferior internode (BI) and at the seventh left internode of the superior part (BS) of the plant to extract the juice of the cane.

3. With each drill place some of the juice on the refractometer, read and take note of the numbers.

4. Calculate the Maturity Index:

$$\frac{((BS/BI \times 100) + \text{each sample taken})}{50}$$

If the maturity index is 85% or more the cane field is ready for harvest. If the IM is greater than 100% the sugar cane is over-mature and enters in a state of deterioration where accumulated sucrose starts to decompose. It is important to harvest cane that is mature only, under mature or over mature cane can pose problems to the quality and quantity of sugar extracted at the mill.