

Caña de Azúcar en Mexico Ancestral Cultivo del Futuro

Con casi cinco siglos auestas, desde su arribo con los conquistadores Ibéricos, esta noble gramínea ha sido testigo fiel de éxitos y vicisitudes, creadora de riqueza y tragedia por igual, llegó para quedarse en quince estados de la República Mexicana. Aquel fracaso que la historia señala tuviera Hernán Cortes, al pretender reproducir la variedad de Castilla en lo que hoy es la Ciudad de México “2,200 m.s.n.m”, no fue obstáculo para su desarrollo en climas más proclives, tales como los estados de Veracruz y Morelos, asentamientos representativos de una agroindustria próspera y pujante que beneficia hoy en día, directa e indirectamente a varios millones de compatriotas.

El abanico de climas, topografía y altitud, que presenta el vasto territorio nacional, bien pudiera considerarse un verdadero laboratorio de experimentación, el cual, junto a las características propias del minifundio imperante, colocan a este importante segmento de la economía rural, bajo condiciones atípicas; sobre todo, cuando se le compara con otros importantes productores de la vara dulce.

Con un promedio cercano a las cincuenta millones de toneladas métricas de caña, y cinco millones de toneladas de azúcar, México se coloca como el sexto productor del preciado carbohidrato en el orbe. No obstante ello, es preciso señalar algunas características particulares de su realidad hoy en día.

El cultivo de la caña de azúcar se realiza en casi setecientos mil hectáreas, de las cuales, el 75% corresponden a tierras de temporal, únicamente beneficiadas por la precipitación pluvial; el resto, se considera como de riego. Los rendimientos agrícolas oscilan alrededor de las 72 toneladas por hectárea, con poco más de 8 toneladas de azúcar en la misma referencia.

Hasta la zafra 2007/08, operaron 57 ingenios, 44 de la iniciativa privada y 13 con administración del estado. Para la zafra 08/09, la polémica se debate sobre el futuro de cuando menos cinco unidades, dada su relativamente baja economía de escala y elevados costos de producción.

Para la zafra 2008/09, las expectativas de producción se estiman en cifras ligeramente inferiores al promedio de los últimos tres años, 5.3 millones de toneladas métricas (base estándar 960 POL), debido a causas multifactoriales; entre las que destacan, entre otras: problemas climatológicos en muchas regiones cañeras; desatención del campo cañero, provocada por una severa crisis económica en varios grupos industriales; así como a la falta de renovación de cepas (gran cantidad de resocas en cultivo); y desde luego, a las presiones de los productores para incrementar el precio de

continued on page 14

Sugar Cane in Mexico The Ancient Alternative of the Future

With almost five centuries of history and since its arrival with the Hispanic conquerors, sugarcane, this noble graminæ has been a faithful witness of success and failures. It has created both richness and tragedy and has expanded in area planted to fifteen states in the Mexican Republic.

History tells about the failure of Hernando Cortes trying to reproduce Castilla's variety in what is today Mexico City, some 7,218 feet (2,200 meters) above sea level. This was not an obstacle for the development of sugarcane in more favorable climates, such as the states of Veracruz and Morelos, which represent areas of a prosperous agro industry that benefits directly and indirectly several million people in the industry.

The wide range of climates, topography and altitude that Mexico has could be considered a real experimental laboratory. This in conjunction with the proper characteristics of the present small parcels, put this important segment of the rural economy in an atypical condition; above all when it is compared with other important producers of the sugarcane.

With an average of nearly 50 million metric tons of cane and five million tons of sugar, Mexico places itself as the sixth largest producer of the most valuable carbohydrate of the world. Above all, it is necessary when it is compared to show some particular characteristics of the reality of sugar production today.

Sugarcane production is harvested in almost 700,000 hectares; 75% of them correspond to temporal land, with only natural precipitation and the rest is considered as irrigated. The agricultural yield ranges around 72 tons per ha, with a little more than eight tons of sugar in the same reference.

For the 2007/2008 crop, 57 mills operated, 44 of which were private and 13 governed by the public administration. For the 2008/09 crop, there is a debate about the future of at least five of these units due their relatively low scale economy and high production costs.

For the 2008/09 crop, the production expectations are estimated slightly lower than the average of the last three years, 5.3 million metric tons (standard base 99.4° Pol). This is due to many factors including climate problems in many cane regions, lack of attention to sugarcane land due to a severe economical crisis in several industrial groups and also the lack of replanting (higher number of ratoons in the fields) and, of course, to the pressure of the producers to increase the price of the cane, due to the

continued on page 17

continued from page 13

elevated production costs reported.

We could come to the conclusion that the sugarcane industry in Mexico is highly productive, although with a high cost of production which takes us out of competition in the world export market.

There is also, historically, the pressure of legal and illegal importation of this and other sweeteners, such as high fructose corn syrup, coming from the north. On the other hand, there are delays of sugar in inventory due to the great difference between the export income and sale in the domestic market. This, added to the financial problems, has suppressed many mills and forced rational exportation schemes to balance the price within the country. Paradoxically, the effects of the global crisis have provoked a devaluation of the Mexican peso by more than 30% which has provided incentives for sugar exports to the North. It is expected that for the 2009/10 crop there will finally be a stable relationship between sugar and cane prices.

In addition to the above points, it will remain a great task to lower production costs with both agricultural and the industrial transformation in mills in order to take advantage of the opportunities provided by NAFTA (free exportation of the surplus as long as the originally signed rules are clearly maintained).

As we quickly close upon the realization of the XXVII congress of the International Society of Sugar Cane Technologists (ISSCT) in March 2010 in the state of Veracruz, it is imperious to offer to the sugar world, a prospective vision of our industry. Knowledge of its rapid capacity of assimilation and response to a thousand and one problems which historically have been experience and overcome.

Most are aware that the global financial crisis has severely hit our economy, delaying investment

projects oriented firstly to the renewal of the industrial factories and also the investment promotion projects for profit from sugarcane co-products. If we start with the saying "sugar is produced on the land," we would have solved the first main problem associated with the high cost production. This would have provided a competitive industry, that assures us jointly with the reduction of the production cost, the offer of competitive products. It would erase the previous view of imports and provide incentive for exports to our main commercial partner.

Experiences tried long ago with some temporary commercial success were made in areas such as: cellulose production from bagasse; obtaining L-Lysine amino acid using middle and final syrups are themes of permanent reflection; and others with more reality, such as ethanol and cogeneration, using exclusively bagasse, to explore into the environmental market of carbon output.

Productive Modernization

Clearly, difficult times need drastic actions to offer structural solutions to a problem as old as the high cost of production of sugarcane. The implementation of strong strategies from the National Program for the Sustaining Development of the Cane (PRONAC), have been presented to reduce overall production costs:

- To strengthen the commercial policy by knowing the real and potential demand of sweeteners in the region, making the distribution chain more efficient, closing the contact with the consumer, guaranteeing domestic consumption, and increasing exports.

- To increase sustainable sugar cane production by precision agriculture, on-time fertilization, increasing of the irrigated area, developing new varieties, compaction of area for a new land equilibrium.

- To increase sugar production with greater factory yield by modernization of production processes that allow for increased grinding rate, decreases losses, more productive use of time, and to accomplish a greater sugar recovery.

- Increase the investment into sugar and jobs, to guarantee productive activity, to promote continuity among production factors through investigation and technology transfer, increase access to financial resources, and increase the drive to the productive diversification.

We can see from the most recent industry assessment that, from the group of existing mills, only 23 factories produce more than 100,000 metric tons of sugar per crop; ten more are between 80 and 100,000 tons; and the rest with smaller capacities.

The industrial units vary considerably with a variety of technological devices. There can still be found steam machines that help pump to different flows and centrifuge units to true innovations such as hydrostatic transmissions, filters and centrifuges of great capacity, automated control of processes, and more recently projects for cogeneration with advanced thermodynamic systems.

It can not be questioned that the current tendency is to increase the installed capacity in larger factories to absorb cane from smaller units; with this comes the reduced social impact of closing sources of employment.

The production of liquid sugar for sodas is done in several industrial factories; one of those is San José de Abajo mill and others include several bottling factories. In all cases, it starts with standard sugar at 99.4% POL. Recently innovations include the offering of the so called micro-crystal sugar, of normal use in Brazil as the amorphous sugar.

Several sugar groups already work on projects to install facilities that generate higher capacity electricity (PIASA 40 MW). It has been

STEAM TURBINE GENERATOR

IMMEDIATE SHIPMENT

3000KW Allis Chalmers

360 psig • 720°F • 40# B.P. • Exh 4160V

3336KW Westinghouse

300-350 psig • 570°F • 20-75# B.P. • Exh 4160V

5300KW Elliott

270 psig • 580°F • 35# B.P. • 4" B.P. • Exh 13,800 V

7500KW G.E.

850 psig • 825°F • 150 psig A.E. • 50 psig A.E. B.P. • 4160V

7500KW G.E.

850 psig • 825°F • 50 psig A.E. & 2" HGA • Exh 4160V

22,500KW G.E.

600 psig @ 750°F • 140 psig A.E. & 2" • HGA 13,800V

TURBINES

1314HP Terry

300 psig @ 515°F • 150# B.P. • 3800 RPM

1500HP Worthington

300 psig @ 540°F 35# B.P. • 3600 RPM

1500HP Worthington

350 psig @ 650°F 60# B.P. • 5000 RPM

2220HP Murray

545 psig @ 610°F • 13-40# Exh. • 3600 RPM

2800HP Murray

395 psig @ 700°F • 20-45# B.P. 4670 (3000) RPM

Contact Us For More Information

CALL: 847-541-5600 • FAX: 847-541-1279

www.wabashpower.com • info@wabashpower.com

wabash POWER
444 Customer Avenue, Wheeling, IL 60090

motivated by the passing of a law to promote bioenergetics. As a result of this, one of the mills, Tres Valles located in Veracruz, would provide the surplus of electrical energy to the public grid, surely selling to the bottling plants of the same industrial group.

Another important subject, the production of ethyl alcohol or ethanol, has been an incentive in recent times through the establishment of a pilot plan to mix the bio fuel with gasoline to be used in Mexico City and Guadalajara, the main population centers of the country. At the present time, only two mills within the sugar industry could assume this challenge, La Gloria and San Nicolás, due to the fact that they have at their distilleries dehydrated columns. It is important to emphasize that, in the last years, at least four distilleries have been installed outside from the mills. In this crop the first mill began to function directly producing ethanol that uses sugarcane

juice as raw material at the Papaloapan distillery in the state of Oaxaca.

There has been a tendency to reuse the muds separated by filters in the main process as biologically processed compost with its conversion into organic fertilizers along with the bio-solve products of contaminated soils and others with implicit fungicidal power. All these actions have been done in several mills, and specifically by the Motzorongo Group.

We are confident that our visitors to the XXVII ISSCT Congress, in March 2010, through the visits programmed in the pre-congress, would realize some of the reality of industry changes, but above all the struggles and the true spirit of the Mexican sugar makers.

Manuel Enríquez Poy can be reached at poymanuel@prodigy.net.mx

SJ

SugarSites

ATAGO U.S.A., Inc.

www.atago.net

Belyea Electrical Power Systems

www.belyeapower.com

Belliss USA

www.bellissindia.com

The Bigelow Company

www.thebigelowcompany.com

BMA

www.bma-de.com

Boerger Pumps

www.boerger-pumps.com

Broadbent Inc.

www.broadbent.co.uk

Case IH

www.caseih.com

Hagglunds Drives AB

www.hagglunds.com

Ferguson Perforating

www.fergusonperf.com

Honiron Corporation

www.honiron.com

John Deere Thibodaux

www.johndeere.com

Metro Boiler Tube Company Inc.

www.Metroboilertube.com

Quality Liquid Feeds

www.qlf.com

Sugar Industry Equipment Inc.

www.sugarandpower.com

R.J. Tricon Company LLC

www.rjtricon.com

Reichert Inc. Analytical Instruments

www.reichertai.com

Stork Veco B.V.

www.storkveco.com

Wabash Power

Equipment Company

www.wabashpower.com

Western States Machine Company

www.westernstates.com

Westway

www.westwaytrading.com

Add your Business Listing to our SugarSites! Call 504-482-3914 Today!