ISSCT CO-PRODUCTS WORKSHOP

PIRACICABA, SãO PAULO, BRAZIL
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ETHANOL PRODUCTION AND USE

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INTRODUCTION

From the various alternatives of co-products from sugar cane studied and developed around the world, ethanol seems to be the only one to reach an important status.

The growing concern about Green House effect and the international pressure derived from the Kyoto Protocol have pushed the search for CO_2 neutral alternatives for chemicals and especially liquid fuels for transportation; in this context ethanol is being looked at as the most promising alternative in the short, medium and long terms.

Besides Brazil and USA several countries such as India, Colombia, Thailand, Australia, China are committed to use ethanol as an alternative transportation fuel motivated by environmental concerns and also in the search for other alternatives to sugar production in an increasingly competitive market.

Brazil has a long and successful tradition in the use of ethanol as a fuel both in the neat form in specially designed engines or blended with gasoline in conventional engines. The sucrose of the 300 million tonnes of cane harvested annually is divided almost equally in the production of sugar and ethanol, with more than 80% of the ethanol being produced in association with sugar in the same mill.

The objective of the workshop was to bring together a group of technologists interested in the various aspects of ethanol production and use as well as environmental issues such as vinasse disposal.

GENERAL INFORMATION

The Venue
The State of São Paulo is responsible for more than 60% of the production of sugar cane, sugar and ethanol in the country. The majority of the sugar cane sector equipment manufacturers are located in this State.

Copersucar Technology Center (CTC)

Copersucar Technology Center (CTC) is the technology arm of Copersucar, a Cooperative of 32 sugar and ethanol producers with a total cane milling around 60 million tonnes/year.It is one of the most advanced research and development centers for sugar cane production and processing.It is located at the city of Piracicaba, State of São Paulo, distant 170km from São Paulo City. It has associated four experimental stations dedicated to the cane breeding program. The technical staff consists of 137 researchers with the support of around 150 field workers and 20 administration staff.

With an annual budget of approximately US$ 10 million, CTC has an laboratorial infrastructure (chemical analysis and quality control, industrial development, plant pathology, entomology and biotechnology) that is supplemented by pilot plants at the mills.

CTC main activities are:

- Development of new sugar cane varieties
- Technology for agricultural production
- Technology for sugar cane processing to sugar and ethanol
- New products such as biodegradable plastic

The most outstanding results can be summarized as:

- Increase in agricultural and industrial yields
- 31 sugar cane varieties have been certified and account for 50% of the sugar cane planted in Brazil
- Pilot plant production of biodegradable plastic
- Improvements in sugar cane transportation and agricultural machinery fleet optimization
- Characterization, quantification and recovery routes of sugar cane trash

- ISO 9002 Certification of Copersucar analysis laboratory.