Fermentec

Fermentec news

Year 2 n. 06 June 2009

Special Simtec During the Simtec 2009 the Fermentec it will do the launch of his program of courses for the second semester

Reduction of losses and new technologies, distinctions of the Fermentec at SIMTEC 2009

This year Fermentec will have an afternoon of lecture at Simtec. In the Panel Fermentec, its advisers will show to a public the forms of control, measurement and technology in several stages of the production of sugar and alcohol to avoid losses of million reals in the mills.

In the opening of the conversations, the president of Fermentec, Henrique V. Amorim, will alert about the losses in the industry and the real vision of the numbers. Sugar that enters in the industry (PCTS), losses in the bagasse, in the pie and in the distillery they are, normally, the determinations checked in the mills. However, other losses occur in the process, but they are not determined and represent up to 9 % of the sugar. Losses in the water of washing of cane, in the evaporation and in the residual waters must be determined also, so for each 1 million of ton of ground cane, 1 % of loss means R$ 1 million. So 0.1% is loss of R$ 100 thousand per season. In the lecture will be presented data of 70 mills and distilleries that show the variation of these losses. Next, Alexandre Godoy also will present about losses, but in the agricultural part. The industrial yeld begins already in the tilling of sugarcane and in the cut planning loading and transport. With the implementation of control tools manager the quality of the cane it was possible to demonstrate the impact of the plant quality on the industrial yeld and the quality of the sugar and alcohol. The Unities that operate with bigger efficiency are just those who present cane of better quality, and vice-versa, according it will be demonstrated in the lecture.

Claudemir Bernardino will present the digester method. In the production of sugar and alcohol one of the most important indices to be checked is entered TRA.

TRA they are the reducing total sugars, in other words, sucrose, glucose and fructose what are turned into alcohol and in other subproducts in the fermentation.

This measurement is necessary to evaluate the losses of sugars, yeld and industrial efficiency. The losses of sugar, how and when they occurs, it will be the subject of the presentation of Rudimar Cherubin. The destruction of sugar occurs during the process of production and is characterized for the degradation of the sucrose, glucose and fructose through reactions in which the sugars are turned into other products, like acids. The degradation occurs with different intensity for each phase of the productive process. The evaluation of the principal stages of destruction, as well as his causes, will be presented and discussed through the case studies. Luiz Francisco L. F. Silva, the Kiko, will present a novelty to measure the volume of the tanks. The system is a new tool to measure in the more precise form the distillery general yeld very important point for the operational efficiency.

Close with Boris Stambuk

In the end of the Fermentec Panel, the teacher of Federal University of Santa Catarina, Boris Stambuk, will present a process of genetic modification of the yeasts that optimizes the fermentation of the sucrose (sugar). In this method the sucrose is not broken out of the cell, but transported directly to inside of cell which allows better control of the contaminations and higher efficiency in the production of ethanol.

Know more

The Panel Fermentec will be held at 1th of July, at 16h, in the auditorium of the Simtec. Each lecture will have duration of 20 minutes, with intervals of 10 minutes for questions. During the Simtec 2009 the Fermentec it will do the launching of course schedules for the second semester, with distinctions for the subjects Indicative of Quality of Raw material (days 27th and 28th of August) and Microbiology for the Sugar and alcohol sector (days 9th and 10th of September).

Courses Fermentec

- **Indicators of the quality of raw material** — 27 e 28 de August
- **Microbiology for the sector sucroalcooleiro** — 09 e 10 de September
- **Parameters in the Management of Industrial process** — 29 e 30 de October
- **Fermented with High Efficiency Spanish** — 10,11 e 12 de November
- **Developing Leaders for it sector sucroalcooleiro** — 26 e 27 de November

www.fermentec.com.br

Av. Antonia Pazzinato Sturion 1155
Fone 19 2105.6136 Fax 19 2105.6101
13420 640 Piracicaba SP Brazil

30th Annual Meeting of the Fermentec

Innovation is the way to confront the crisis

The technology was a distinction to avoid losses and grow again

The 30th Fermentec Annual Meeting promoted in May 19th to 21th in São Pedro, SP, presented many innovations in research in fermentation for the agricultural sector and environment. The subject of the meeting was Innovating in Time of the Uncertainty. “In this era of uncertainties it is necessary to economize, but without harm the efficiency”, summarizes the president of the Fermentec, Henrique Amorim. Besides the professionals of the Fermentec the invited speakers brought many news and important contributions in areas to the production of sugar-cane and environment, quality of the sugar, fermentation and use of vinasse, between others. The Fermentec Meeting had 24 enterprises exhibitors and 11 complementary lectures besides of 23 lectures of the planning Fermentec. In the total, they were 34 speakers that brought news and did the 30th Annual Meeting rich with informations and knowledge for all the participants.

1

30th Annual Meeting of the Fermentec **Environmental impact**

Researchers presented results of research in agriculture and environment

The teacher of the Department of Biosciences of USP, Marcos Buckeridge, alerted about the need for investment in the environment. 400 million tons of sugar-cane kidnaps 16 million tons of carbon. Already the forests of South America kidnap 70 billion tons of carbon, in other words, the cane represents 0.01% of all carbon forestry.Buckeridge proposes measures to increase the productivity of sugarcane and regeneration of forests and savannas. "Brazil should follow the way of the medium, not just cane, not only forests," the teacher reiterated. To increase the productivity of cane the researcher at the Federal University of Alagoas, Laurício Endre, did experiments with different varieties of the plant to check the water retention. Some varieties when they are under hydric stress the stomata closed to keep the water that remains and not to lose it during the transpiration. The objective of this research was to compare different genotypes and how they respond to the hydric stress. This opens the possibility to get new cane varieties more tolerant to drought and productive. The consultant Hideto Arizona, doctor in genetics of plants by Esalq/USP, also it highlight in his presentation the increase of productivity,

.Not thinking only about tons of cane, but in ATR (total recovered sugar) for planted hectare For Arizono it does not advance to gather a great quantity of sugar cane with little sugar. “Half of the cost of production of sugar cane is in the harvest and transport, therefore the logistics must be very well planned. The plant with little sugar will to burden the transportation and produce little”, affirmed the adviser. Still speaking about the sugar-cane, the adviser of the Fermentec, Fernando Henrique Carvalho, showed research that the Biological Institute is developing to control the bicudo com nematóides entomopatogênicos. The use of this agent of control in synergy with some agricultural protections is reducing with success the damages and increasing the yeld of the culture with the minimum of impact to the environment. Finally, Luiz Francisco da Silva (Kiko), also of Fermentec told about the company's research on the impact of the land and of the leaves in the determination of the fiber of the cane, its being is a great preoccupation for the energy balance.

2

30th Annual Meeting of the Fermentec **Economy**

Fermentec does analyses to avoid loss of sugar

To avoid losses and improve the quality of the sugar it is necessary invest in analysis and good equipments. Alexandre Godoy demonstrated in practice that the degradation of sugar by chemical reactions can cause the loss of the product in around 10%. The principal points of the process were highlighted where it occurs the losses and / or destruction and the importance of working with correct temperatures during the manufacture of the sugar. Eduardo Borges is already analyzing the great number of factors that affect the process of decantation and its effect in the color of the sugar. Osmar Parazzi highlighted best practices in the production of sugar to prevent possible contamination in the food industry and ensure the safety of human consumption. In the same line José Antonio M. Junior presented methodologies and gave tips for a good analytical control to achieve results near of reality of the industry.
Ending the lectures about sugar Fernando Eder Ré showed his experience in the training on paving held in the University Champgne-Ardene in the city of Reims, in France. The methodology of control can be implemented gradually by the Fermentec to attend to the clients. Besides, Fernando received several important tips on crystallization, centrifugation and drying of sugar what they can be applied in the processes in the mills.

3

30th Annual Meeting of the Fermentec **Innovation**

For Amorim, technology should be priority in mills

In the closing lectures of the Annual Meeting the innovation was the central part of the whole presentation of a president of Fermentec, Henrique Amorim.He highlighted technologies available in the market, important to have immediate impact in the laboratory and increase the efficiency in the mils. In the laboratory, a new method to determine the viability of yeast without use of reagents, since it will diagnose the flocculation (it is caused by bacterium or yeast), besides measuring the destruction of the sugar in the molasses. Without the equipment HPAEC there is no way to measure this destruction. Among the immediate impacts of innovation in industry Amorim warned for determining the end of fermentation. The equipment HPAEC detects in the precise form when the fermentation ended. So, the distillery gained in time and productivity.

Between the most important realizations of the Fermentec in the last years was the selection of new yeasts, the CAT-1 and recently published research of fermentation of high alcoholic concentration in beer. The consulting go to do the fermentation with 16% of alcoholic concentration in beer with recycling of yeast. Bisedes of increase of the efficiency in the production the new technology reduces by half the insurance of vinasse, distilleries were fermenting with this alcoholic concentration in beer R$ 1 billion real yearly would be economized, being R$ 670 million in the agricultural part and R$ 425 million in the industry. “In the last two years we did many innovations and million reals were economized. When the crisis passes and the market return the rhythm who will have invested in knowledge and innovation will have strengthened and will have a great return”, Amorim closed.

Researchers present news in all the chain of fermentation

New yeast, control of foam and contamination were among the novelties presented by professional experts in the alcoholic fermentation Fermentec. Walter Hugo Venturelli showed clearly the complexity of the formation of the foam, as it happens and why it may be more or less resistant. A good overview for those who want to understand a little more of foam and what factors are responsible for their stability.
Dinailson Campos has already made some tests with two types of agitators installed inside of the tanks in order to increase the efficiency of fermentation and decrease some inputs. The result obtained with one of the agitators was surprising, it reduces the expenses of antisparkling by half. Still speaking on tanks, Claudemir Bernardino presented a new technology for measurement of volume with bigger precision. With the probe of guided wave there are not any more the difficulties resulting from the visualization of the scales of measures, mistakes of paraloosen and excessive maintenance. The appliance developed by Fermentec together with the SMAR and Santa Elisa, is totally automated with probe of guided wave when the difficulties are removing all. To increase the efficiency of fermentation, Silene Paullilo showed the new yeasts selected called FT858L and FT859L. They are more tolerant to stress than found commercially and it has a promising future. On analysis, Armando F. G. Junior talked about new equipment to obtain more reliable and Eder Silvestrini made advances in the determination of ammonia nitrogen.
The main point of this research was to reduce the time of analysis and changes in the sampling technique and storage of samples. At the close of the module the highlights were the bacteria. Mario Lucio Lopes showed that some bacteria use citric acid and other organic acids as an energy source. Thus it was possible to find out why, in some units, the result of the balance of acidity in the fermentation is negative. In the control of the bacterial contamination Rudimar Cherubin it presented new antimicrobial efficient to the combat of bacteria of the fermentation, increasing in this way the options of these products in the market. It showed also that the way of applying has impact in the efficiency of the product. The work of Fabrício Barros already showed alternatives to the treatment with sulphuric acid, which it has high price, employing the hydrochloric acid. The research also showed how it is necessary to work with hydrochloric acid in order that bigger efficiency is obtained. In the penultimate conversation of the Annual Meeting, José Henrique de Paula Eduardo, of the enterprise Conger, presented a study about how to concentrate the vinasse with economy and demonstrated through numbers the reduction that can be obtained in the volume of the subproduct working with levels more elevated of alcohol in the fermentation.

5 Representative in Europe were impressed with research Fermentec

The chemical engineer Austrian, Josef Döfler, representative of Fermentec in Europe, was very impressed with all the technology presented by the company. For Josef, Brazil is a power of technological development and that ethanol has no comparison with the United States, Canada and Europe.
"No country has a fermentation process as efficient as that of Brazil," said the engineer. For him the Fermentec is an important partner of the companies because her research involving all chains of production of ethanol and its professionals have extensive knowledge and skill in communicating with the mills. Josef still highlighted that the technology developed by Fermentec it allows, with some adaptations, that the fermentation be done by other raw materials like the corn, wheat and sugar of beetroot. For the European market it is impossible to compete with the prices practiced in Brazil, but the continent wants to produce ethanol to do the addition in the petrol. The sugar of the beetroot presents itself a more viable alternative because of being similar to the process of fermentation originating from the cane and does not require many adaptations, like the corn. “The expansion of the Fermentec is helping the whole industry of the ethanol to become more and more economical”, Josef concluded.

6 Teacher Gretz brought humor and animation to the Annual Meeting

Significant presence in the 30th Annual Meeting was the teacher Gretz, one of most celebrated speakers of Brazil. Study done by the magazine Examination shows that Gretz is between the speakers most requested by enterprises. He is the author of 11 books and it has more than 1200 business customers. The speaker did already more from 3 thousand lectures in the last 20 years helding seminars in great enterprises and closed events. In the lecture boarded the happiness in the personal and professional life, health and great reflection, Gretz raised smiles singing, clapping and transmitting many messages of enthusiasm.
See down some sentences that marked his lecture:

“Wise is one that gives value to what is before you lose it.”

“Not enough to notice the new, we must apply it. This is innovation.”

“The human wants a challenging job what gives sense, mission and purpose.”

Expedient
Fermentec’s President — Henrique Vianna de Amorim
Fermentec News’s Coordenation — Alessandro Natal
Responsible journalist — Juliana Servidoni (Mtb 39.288/SP)
Design — Emílio Moretti
Art-finalist — Débora Juliani

Fermentec news