

## Everything ready for the 30 annual meeting

The 30th Annual Meeting of the Fermentec, with the subject *Innovating in Time of the Uncertainty* it will present many news. Among the invited speakers are the teachers Marcos Buckeridge of the Institute of Biosciences of USP, Lauricio Endre of the Federal University of Alagoas, besides the director of the companies Conger e JH Representations José Henrique de Paula Eduardo and the consultant Hideto Arizono. Another novelty is the motivational lecture of the teacher Gretz. The meeting will have 23 speaker, besides of the complementary lectures of the companies participants, 24 companies are going to exhibit his work in the stands in hall annex. The Annual Meeting will be held on May 19<sup>th</sup> to 21<sup>th</sup> at Hotel Fonte Colina Verde, in the city of São Pedro, SP.

### Companies exhibitors of the 30th Annual Meeting

Acatec	Quimatec
Alcolina	Quimica Real
Caltec	Serquimica
Cetec	Simtec
Dionex	Sovereign
GTR	Tecnal
Hexis	Tespro
IRBI	Wallerstein
LNF	Foss
Marconi	Marte Balanças
Mecat	Brascase
Polimate	Carbochloro

**inovando**  
na era da incerteza

## Innovation

### Teacher Gretz is one of the highlights of the event

One of the great news of the 30<sup>th</sup> Annual Meeting will be the lecture: **The Strength of the Enthusiasm in the Innovation**, of the teacher Gretz, one of Brazil's most celebrated speakers. A study done by Exame magazine shows that Gretz is among the most requested speakers for business, He is author of 11 books and it has more 1200 enterprises as clients. The speaker already did more from 3 thousand lectures in the last 20 years doing seminars in large companies and closed events. His lecture will be presented in may, 20<sup>th</sup> at 13h30.

# Pilot project reduces for the half the production of vinasse

## For the first time, researchers can produce ethanol with the same yield and striking reduction in the production of vinasse

Researchers of the Fermentec, of Piracicaba, it has got through a pilot plant to produce ethanol reducing the volume of vinasse for the half. The result was obtained thanks to increase of the alcoholic concentration in beer in the fermentation. Currently the mills in Brazil working with alcoholic concentration in beer between 8% and 10%, emitting 10 to 12 liters of vinasse per liter of alcohol produced. In this research it was possible to do fermentation with 16% of alcoholic concentration in beer without affecting the yield and with production of six liters of vinasse per liter of alcohol. If 385 distilleries of the country will decreased in 50% the production of vinasse would be a reduction of 160 billion liters of residue per year. The economy in the mill with the high level of fermentation may reach R\$4 per tone of cane. The vinasse or vinhoto is a residue that is left of distillation of ethanol. Since the 70's decade its application as fertilizer has been studied and is now widely used as fertilizer on crops of sugarcane.

**Alcoholic Concentration in Beer** In the mill, the cane is ground and then some processes the must, a mixture of molasses, juice and water will be fermented. In fermentation the yeast transform sugar into alcohol. This mixture already fermented called wine goes subsequently for the distillation, where the alcohol is separated and the product (vinasse) is generated. In the production of ethanol from cane the yeasts are recycled, which does not happen with it of corn, for example, the alcoholic concentration in beer in the fermentation is 18%, but it is not possible to recycle the yeast. Therefore, in the case of ethanol from sugar cane to increase the content above 10% in the fermentation could cause death of cells, preventing the recycling of yeast. In the work held, it was possible to reach the alcoholic concentration in beer of 16% with recycling of yeasts and elevated viability, thanks to the improvement of the control of temperature and of the systems of refrigeration and the inclusion of special yeasts in the process. Each 1% increased in alcoholic concentration in beer is obtained a reduction of 15 billion liters of vinasse per year considering all the mills of Brazil. The time of fermentation is also extremely beneficial in relation to ethanol from corn, in last it is 70 hours and in ethanol of cane are necessary only 20 hours.

**Economy** Besides the economy in the transport of vinasse in tank trucks and fertirrigação, the high alcoholic content reduces the use of the steam. In the column of distillation the alcohol is extracted in the form of steam then to be condensed. As the water is boiling at 100°C and the alcohol is 78°C how much more alcohol will have, quicker it will be the evaporation. The spend with inputs as the antibiotics also decrease, if will have a contamination the resistance of the bacterium in a great concentration of alcohol it is less. Only in fertirrigação in the agriculture considering a gain of R\$ 2 per ton of cane processed the economy of sector would be R\$ 670 million per year. Already in the industry, reducing the use of steam would be of the order of R\$ 425 million annually in distilleries. Adding the parts agricultural and industrial economy reaches R\$ 1 billion. The steam economized in the distillation can be used for the production of more electric energy in mills that use bagasse as energetic resource.

**Research** - The research has been held four years ago by Fermentec in pilot project in the Pedra mill (Group Pedra Agroindustrial S/A), in Serrana, SP. From the beginning the work was developed in partnership with the Esalq/USP through the teacher Luiz Carlos Basso. In 2008, when the Project received support from CNPq, the teachers Márcio de Castro Silva Filho, also from Esalq, Pio Colepicolo of Institute of chemistry of USP and Boris Stambuk of the Federal University of Santa Catarina they have joined to the team. The partnership with universities have been relevant for the discovery of the biochemical and genetic characteristics of the yeast fermenting with high alcoholic concentration in beer.

### Comparative of indicators in Brazil and the United States

	Brazil	Brazil	United States
Pointers	Current process	New process	Fermentation of corn
Alcoholic concentration in beer	8-8,5%	15-16%	18%
Yield	90-92%	90-92%	85-88%
Time of fermentation	8-10h	16-18h	60-90h
Recycling of yeast	Yes	Yes	Not
Volume of vinasse	12L/L alcohol	6L/L alcohol	5,5L/L alcohol

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Henrique Vianna de Amorim  
Alessandro Natal  
Juliana Servidoni (Mtb 39.288/SP)  
Emílio Moretti  
Débora Juliani

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