

Welcome to the ISSCT Bulletin for September 2022, in which we collect latest ISSCT updates, along with news, research, and past and upcoming events related to sugar cane technology.

## Contents

<b>ISSCT News.....</b>	<b>3</b>
Webinars.....	3
Agriculture Commission Webinar.....	3
Factory Processing Webinar.....	4
ISSCT XXXI Congress.....	4
ISSCT XXXII "Centennial" Congress.....	5
International Consortium for Sugarcane Biotechnology (ICSB).....	6
Distinction.....	6
<b>Sugar Cane News.....</b>	<b>8</b>
IIT researchers find new method to produce sugar substitute from sugarcane waste.....	8
FAO tool to help farmers optimise irrigation systems and achieve higher yields.....	8
Bonsucro Inspire Awards shortlist announced.....	9
How Blockchain is being used to build trust across value chains.....	9
Case IH introduces FieldXplorer technology for sugarcane plantations in Thailand.....	10
Africa's energy future is sugarcane.....	10
Inventor wants to slow climate change with modern steam engine.....	10
Sugarcane cabins and floating seats: The future of aircraft design.....	11
Two major investments for Mount Gay with sugar mill and new bond [Barbados].....	11
Brazil debates sustainable ag and its lack of international recognition [Brazil].....	12
Brazil's Sugarcane Season Seen Smallest Since 2011 [Brazil].....	12
10 Successful Teams Get Smart Farm Grant Challenge (SFGC) – Grant [India].....	12
Chhattisgarh's first ethanol plant to come up in Kabirdham district [India].....	13
The Israeli agritech startups leading crop innovation [Israel].....	13
Surge in sugar factories imperils industry's future [Kenya/Uganda].....	14
Biofuel subsidies extended for two more years [Thailand].....	14
<b>Latest Research.....</b>	<b>14</b>

Detection of White Leaf Disease in Sugarcane Using Machine Learning Techniques over UAV Multispectral Images .....	14
Extraction of cellulose from sugarcane bagasse via ultrasonic-assisted alkaline technology .....	15
Effect of chemical treatment on the structural, thermal, and mechanical properties of sugarcane bagasse as filler for starch-based bioplastic .....	15
Integrated Approach in Genomic Selection to Accelerate Genetic Gain in Sugarcane	16
Sustainable Valorization of Waste and By-Products from Sugarcane Processing .....	17
Sugarcane Vinasse: Evaluation of their Use as an Alternative Fuel.....	17
Use of carbohydrate-directed enzymes for the potential exploitation of sugarcane bagasse to obtain value-added biotechnological products .....	17
Resource Use Efficiency and Yield Advantage of Sugarcane-Based Cropping System in Tropical India.....	18
<b>Events .....</b>	<b>19</b>
XII Congreso Tecnicaña (XII Tecnicaña Congress).....	19
Workshop on "Innovation and Networking of Sugarcane Research for Future Sugarcane Industry in Asia Pacific Region" .....	19
Sugar & Ethanol Asia.....	19
7th IAPSIT International Sugar Conference & Sugarcon-2022 .....	19
Bonsucro Global Week .....	20
25th World Ethanol & Biofuels.....	20
31st ISO International Seminar 2022.....	20
ISSCT XXXI Congress .....	20

# ISSCT News

## Webinars

The Entomology Section Webinar was held on 18 August 2022 and was attended by 45 members from 16 countries. The link to access recording of this event on Cloud has been communicated to all participants.

The last two webinars namely those of the Agriculture Commission and the Factory Processing Section will be held on 27 and 29 September 2022, respectively. Relevant information is as follows:

### Agriculture Commission Webinar

**Tuesday 27 September 2022,  
11:00 a.m. GMT**

**Theme: “Aspects of agro-ecological approaches in sugarcane farming systems”**

For Registration please click:  
<https://us06web.zoom.us/meeting/register/tZUqf--hqjktHtRDCJMj8dlf9twvWvk1BeNr>

The first announcement may also be found on the ISSCT website at  
<https://issct.org/2022/09/11/agriculture-commission-webinar/>

## ISSCT Agriculture Commission Webinar

Sept **27** 2022  
11:00am GMT  
– 1:00pm GMT

**“Aspects of agro-ecological approaches in sugarcane farming systems”**



### PROGRAMME

**Introduction by Prof. Bernard Schroeder, Agriculture Commissioner and Agronomy Section Chair**

**Section 1 Chair: Prof. Bernard Schroeder**

Presentation 1: Dr. Jeff Kraak (Fertiliser Australia) – Does movement towards organic fertilisers impinge on the notion that ‘fertiliser feeds the world’?

Presentation 2: Dr. Hardev Sandhu (University of Florida) and Dr Troy Jensen (University of Southern Queensland) – Sensing technology – Useful tools to guide informed decisions on-farm

**Section 2 Chair: Mr. Laurent Barau**

Presentation 3: Dr. Mathias Christina (CIRAD) – Increasing biodiversity in sugarcane production using cover and companion crops

Presentation 4: Dr. Christophe Poser (CIRAD) – Minimum tillage, controlled traffic and crop residue management – fundamentals ensuring sustainable sugarcane production

**Summary and conclusions: Dr. Pierre Todoroff, Chair, ISSCT Agricultural Engineering Section**

**The facilitators/organizers are:**

- Bernard Schroeder
- Pierre Todoroff
- Laurent Barau
- Troy Jensen



**LANGUAGE**  
The Webinar will be conducted in English



**Information about the presenters:**  
[bit.ly/Agri-comm-bios](https://bit.ly/Agri-comm-bios)



International Society of  
Sugar Cane Technologists  
Founded 1924

**[bit.ly/issct-agriculture-webinar](https://bit.ly/issct-agriculture-webinar)**

The Webinar is ONLY open to compliant members of ISSCT.  
The individual Membership dues are USD 140 and may be settled at:  
<https://bit.ly/ISSCT-membershipform>

## Factory Processing Webinar

Thursday 29 September, 2022, 11:00 a.m. GMT

Theme: "Current Factory Processing Challenges for the International Sugar Industry"

For Registration please click: <https://us06web.zoom.us/join/8QXM6oeg5qTP>

The first announcement may also be found on the ISSCT website at:

<https://issct.org/2022/08/29/factory-processing-webinar/>

## ISSCT Factory Commission Factory Processing Webinar

Sept **29** 2022  
11:00am GMT  
– 1:00pm GMT



### Current Factory Processing Challenges for the International Sugar Industry

The facilitators/organizers are:

- Dr. Gillian Eggleston, Audubon Sugar Institute, Louisiana State University AgCenter, USA
- Dr. Boris Morgenroth, IPRO Industrieprojekt GmbH, Germany
- Mr. Steve Davis, Sugar Milling Research Institute, South Africa
- and other Processing Section members



#### LANGUAGE

The Webinar will be conducted in English



Information about the presenters:

[bit.ly/factory-info-bio](http://bit.ly/factory-info-bio)

### PROGRAMME

**Introduction by Gillian Eggleston, Chair ISSCT Processing Section**

#### Industry 4.0

- Industry 4.0 perspectives and challenges for the sugar industry (20 min) by Julio Calpa, Cenicana, Colombia
- SMRI progress on factory-based industry 4.0 projects (20 min) by Steve Davis, SMRI, South Africa
- Progress with SMRI-NIRS roll-out in South and southern African sugarcane factories (20 min) by Steve Davis and Steve Walford, SMRI, South Africa

#### Impurities at the Factory and Their Mitigation

- Impurities in the sugarcane processing industry: what alternatives do we have to mitigate their impact on the quality and efficiency of the process (20 min) by Lina Marcela Arévalo and Juan Gabriel Rodriguez, Cenicana, Colombia
- Fructans are a more pervasive polysaccharide in the sugarcane industry than previously considered by Gillian Eggleston and Giovanna Aita, ASI, USA

#### Discussions

#### Q&A Session

#### Conclusion

### REGISTRATION

[bit.ly/factory-processing](http://bit.ly/factory-processing)

The Webinar is ONLY open to compliant members of ISSCT. The individual Membership dues are USD 140 and may be settled at: <https://bit.ly/issct-membershipform>



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Founded 1924

## ISSCT XXXI Congress

Registrations for the ISSCT XXXI Congress which will be held from 20 to 23 February 2023 in Hyderabad, India, are being received each day. Members are taking advantage of the **Early Bird Registration** at **USD 1100** and the deadline for this category of registration is **30 September 2022**.

The other rates are:

- **Standard Registration: USD 1250, deadline 31-Dec-22**
- **Late Registration: USD 1500, deadline 15-Feb-23**
- **Onsite Registration: USD 1700**

The website which has been in operation since early July, may be accessed through the following link:

<https://issctcongressindia2023.in/>

The website contains all relevant information on Registration for Congress, Pre and Post Congress Tours, Social Programme, Trade Exhibition and other aspects.

## ISSCT XXXII “Centennial” Congress

Further to the information given in the August issue of the ISSCT Bulletin, action has been taken concerning the publication entitled:

**'Trends in ISSCT since its creation'**, that would cover the entire history of ISSCT over its 100 years of existence. This would be divided into four periods: 1924 – 1938; 1950 – 1974; 1975 – 1999; 2000 – 2023.

This publication will encompass all the disciplines represented at ISSCT. Over the years the ISSCT has evolved to suit prevailing circumstances and evolution in sugarcane at the world level – a new Commission, Management, has been created while new disciplines have been taken on board such as Molecular Biology which incorporated Physiology. Today the ISSCT has five Commissions with three of them having sections as follows:

Agriculture Commission: Agronomy and Agricultural Engineering & Extension

Biology Commission: Germplasm & Breeding, Pathology, Entomology and Molecular Biology

Factory Commission: Engineering and Processing

Co-Products Commission

Management Commission

An account will be written for each of the 10 disciplines given above that would indicate for each period:

- What was covered in congress papers/posters
- Advancements to industry through R&D
- Impact of advancements on industry
- Three personalities that have distinguished themselves in R&D in the disciplines concerned putting them in order of importance (the idea is to give recognition to them and in certain cases especially for the period 1924-1938 and also 1950-1974, it may have to be done posthumously)

Each contribution will be a maximum of 3000 words with only very important/exceptional references be listed. Photographs and other figures are encouraged. It may be that for the period 1924 – 1938 there might be little to report in some disciplines in which case no account will be written on them.

Each contribution should be subject of an oral presentation at the Centennial Congress.

Some 40 contributors have been contacted for the disciplines/periods and the response is very encouraging.

On another score, the design of the memorial pin for the Centennial Congress has been finalised.

## International Consortium for Sugarcane Biotechnology (ICSB)

After two long years, Plant and Animal Genome is back and the 2023 meeting will be held on January 13-18 at the fully renovated Town & Country Resort and Conference Center, San Diego, California.

The Sugarcane ICSB workshop will take place at its usual day and time and it will be an excellent opportunity to hear all about your new advances and successes in sugarcane research.

Please send abstracts as soon as possible to Dr. Nathalie Piperidis,  
[NPiperidis@sugarresearch.com.au](mailto:NPiperidis@sugarresearch.com.au)

The ICSB is pleased to announce that the James E. Irvine Memorial Travel Award will be granted to an early career scientist working in the general areas of sugarcane biotechnology, genetics or genomics. Up to \$4,000.00 will be made available to cover airfare, local transportation, meeting registration, hotel and meals to the awardee outside the USA. Up to \$2500 will be made available for awardees within the USA. A committee of ICSB members and research providers will select the award based on the submission of an abstract summarizing the work to be presented. Applicants should submit the abstract, their CV and detailed contact information to Dr. Nathalie Piperidis at: [npiperidis@sugarresearch.com.au](mailto:npiperidis@sugarresearch.com.au) by 30 October 2022. Notification of the award will be made by 11 November 2022 to allow for lead-time for obtaining a Visa for the USA if the award is made to a scientist outside of the USA. For further information, please contact Dr. Nathalie Piperidis.

## Distinction

We are pleased to inform you that Mr. Sanjay Awasthi, President, STAI and member, ISSCT Executive Committee has been conferred with the Sharkara Shri

Award 2022 given by the Ministry of Consumer Affairs, Food and Public Distribution, Govt of India, as mentioned below.

On behalf of ISSCT the Chair and Members of the Executive Committee would like to convey their warmest congratulations to Mr. Sanjay Awasthi who is also the Executive President of the ISSCT XXXI Congress.

## FELICITATIONS

**Mr. Sanjay Awasthi, President, The Sugar Technologists Association of India and Member ISSCT Executive was conferred with the prestigious Sharkara Shri Award - 2022 given by the Ministry of Consumer Affairs, Food and Public Distribution, Govt. of India at a glitterati ceremony held on 23<sup>rd</sup> July 2022 at National Sugar Institute, Kanpur.**


**The award was conferred by Sadhvi Jyoti Niranjana - Hon`ble Minister for Consumer Affairs, Food and Public Distribution and Rural Development, Govt of India for his outstanding contribution and exemplary services to the growth and development, diversification of the sugar industry in India and across the world.**



**Sadhvi Jyoti Niranjana, Hon`ble Minister for Consumer Affairs, Food & Public Distribution and Rural Development conferring the Sharkara Shri Award.**

## Sugar Cane News

### IIT researchers find new method to produce sugar substitute from sugarcane waste


	<b>Hindustan Times</b>	<b>August 23, 2022</b>	<a href="https://www.hindustantimes.com/education/news/iit-researchers-find-new-method-to-produce-sugar-substitute-from-sugarcane-waste-101661237349982.html">https://www.hindustantimes.com/education/news/iit-researchers-find-new-method-to-produce-sugar-substitute-from-sugarcane-waste-101661237349982.html</a>
	<p>A team of researchers at Indian Institute of Technology (IIT) Guwahati has developed a new method to produce sugar substitute from sugarcane waste.</p> <p>Called 'Xylitol', this sugar substitute has potential anti diabetic effects and overcomes limitations like chemical methods for synthesis of sugar and time delays associated with conventional fermentation process, they claim.</p> <p>The newly developed, ultrasound-assisted fermentation method utilises sugarcane bagasse (the residue left after crushing of sugar cane) to produce a safe sugar substitute, the institute said in a release issued on Tuesday.</p>		

### FAO tool to help farmers optimise irrigation systems and achieve higher yields


	<b>Future Farming</b>	<b>September 8, 2022</b>	<a href="https://www.futurefarming.com/crop-solutions/fao-tool-to-help-farmers-optimise-irrigation-systems-and-achieve-higher-yields/">https://www.futurefarming.com/crop-solutions/fao-tool-to-help-farmers-optimise-irrigation-systems-and-achieve-higher-yields/</a>
<b>FUTURE FARMING</b>	<p>The Food and Agriculture Organisation of the United Nations (FAO) has developed a portal, known as WaPOR – Water Productivity through Open Access of Remotely sensed derived data. WaPOR processes satellite data to provide information that can help farmers optimise irrigation systems and achieve higher, more reliable agricultural yields.</p> <p>WaPOR provides near real-time data that can be used for a range of applications in agriculture and water resources management. The portal presently offers data that, at the coarser resolution, covers Africa and the Middle East.</p> <p>A recent additional funding of \$4.95 million from the Foreign Affairs Ministry of the Netherlands will allow for a global expansion of the database and the addition of two new partner-countries in Asia and Latin America. Currently, WaPOR works with 10 partner-countries to help build their capacity to use the data for optimising water management.</p>		




## Bonsucro Inspire Awards shortlist announced

	<b>Bonsucro</b>	<b>August 31, 2022</b>	<a href="https://bonsucro.com/bonsucro-inspire-awards-shortlist-announced/">https://bonsucro.com/bonsucro-inspire-awards-shortlist-announced/</a>
	<p>The judges for the Bonsucro Inspire Awards have submitted their scores for the 2022 Bonsucro Inspire Awards. We're excited to reveal the shortlist.</p> <p><i>Best value chain sustainability initiative</i></p> <ul style="list-style-type: none"> <li>• Orplana: Muda Cana</li> <li>• Pantaleon: Extensionism Program</li> <li>• Socicana: Green Rural Credit</li> <li>• Thal Industries Corporation: Capacity Building of Supply chain Stakeholders</li> </ul> <p><i>Best environmental initiative</i></p> <ul style="list-style-type: none"> <li>• Canaoeste: SOS Fire (SOS Incêndios)</li> <li>• DCM Shriram Ltd. – Sugar Business: Meetha Sona Pariyojana</li> <li>• UPL Ltd, Mumbai: Shashwat Mithaas : Initiative for Sustainable Sugarcane</li> </ul> <p><i>Best social sustainability initiative</i></p> <ul style="list-style-type: none"> <li>• Ingenios Santos: Guantes anticorte para cortadores de caña de azúcar</li> <li>• Proforest: Integrated ARBO Child Labour and PPE Programme (IACAP)</li> <li>• Usina Coruripe: Projeto Barriga Cheia (full belly project)</li> </ul> <p>The Bonsucro Inspire Awards exist to recognise the exceptional contributions made by our members to accelerate the sustainable production and use of sugarcane. The projects submitted were diverse and addressed localised sustainability challenges.</p> <p>Each judge on our panel was asked to read all the submissions in one category and provide scores in four areas: inspiration, inclusion, impact, and insights. All judging was done remotely and all scores were kept confidential. The entries on the shortlist were the submissions that received the most points.</p>		


## How Blockchain is being used to build trust across value chains

	<b>Engineering News</b>	<b>September 2, 2022</b>	<a href="https://www.engineeringnews.co.za/article/how-blockchain-is-being-used-to-build-trust-across-value-chains-2022-09-02-1/rep_id:4136">https://www.engineeringnews.co.za/article/how-blockchain-is-being-used-to-build-trust-across-value-chains-2022-09-02-1/rep_id:4136</a>
	<p>Distributed ledger technologies, such as blockchain, in which immutable copies of ledger entries are shared with all stakeholders, are being used to improve the speed at which members and whole supply chains can react to changes. In addition, the transparency of the entire value chain is being enhanced, as verification can be done at each conversion or value-adding step.</p> <p>Transparency and visibility across a supply chain will boost trust, which will, in turn, increase the speed at which supply chain processes can be completed, says technology analysis organisation Edge of NFT cofounder Dr Eathan Janney.</p> <p>Further, blockchains are also being used to build trust across industries, such as the blockchain developed by professional services firm KPMG for the Queensland, Australia, sugar cane industry.</p> <p>“The Queensland sugar cane industry recognised that a breakdown of trust threatened the future of the industry, and aimed to demonstrate the sustainability credentials of sugar produced in Queensland. The blockchain-based system is used across the entire ecosystem, from initial certification of farms through to growing, transport, refining and export processes,” says KPMG Impact global head Richard Threlfall.</p>		


## Case IH introduces FieldXplorer technology for sugarcane plantations in Thailand

	AgriculturePost	September 12, 2022	<a href="https://agriculturepost.com/farm-inputs/farm-mechanisation/case-ih-introduces-fieldxplorer-technology-for-sugarcane-plantations-in-thailand/">https://agriculturepost.com/farm-inputs/farm-mechanisation/case-ih-introduces-fieldxplorer-technology-for-sugarcane-plantations-in-thailand/</a>
	<p>Precision technology has reached new heights with GPS-enabled drones now able to interact with Case IH AFS (Advanced Farming Systems) software, providing accurate and real-time intelligence to help make on-farm decisions. The technology is called FieldXplorer, and it has just been launched in conjunction with Case IH's new Austoft 9000 series sugarcane harvesters in Thailand.</p> <p>All Austoft 9000 sugarcane harvesters are built ready with the latest innovations in sugarcane production including Case IH auto guidance, known as AFS AccuGuide. A factory-ordered option, AFS AccuGuide technology enables automatic steering of the harvester with ultimate precision along every row thanks to a high-performance AFS GPS receiver and steering controller.</p> <p>For additional accuracy, FieldXplorer uses a GPS-enabled drone to capture images of the crop. Using the FieldXplorer platform, those images are converted into guidance lines for harvesting operations. Return on the investment in auto guidance is made immediately via improved harvester operation and reduced crop damage.</p>		

## Africa's energy future is sugarcane

	Mercados Africanos	September 11, 2022	<a href="https://mercadosafricanos.com/en/africa%27s-energy-future-sugar-cane/">https://mercadosafricanos.com/en/africa%27s-energy-future-sugar-cane/</a>
	<p>Exclusive Interview with African Markets by Gérard Scerb, Honorary Consul of the Republic of Mali, in Brazil and director of the French trading company DAPEX.</p> <p>One of the serious problems nowadays is the energy crisis and the search for alternative energies, such as biofuel, are increasingly in demand and Gérard Scerb, is a specialist in biomass and sugarcane production. It was to find out his opinion on the future of energy in Africa that we interviewed him, hoping to shed some light on the continent's future, and we were not disappointed.</p> <p>In this interview, in addition to getting to know its trajectory better, we learn about curious facts, such as the origin of Embrapa, a Brazilian state body, to develop the technological basis of a genuinely tropical model of agriculture and livestock.</p>		

## Inventor wants to slow climate change with modern steam engine

	Stuff	August 20, 2022	<a href="https://www.stuff.co.nz/environment/climate-news/129519506/inventor-wants-to-slow-climate-change-with-modern-steam-engine">https://www.stuff.co.nz/environment/climate-news/129519506/inventor-wants-to-slow-climate-change-with-modern-steam-engine</a>
<p>A Canterbury man has invented a better steam engine and believes it can help to relieve climate change. Will Harvie reports. Sam Mackwell wants to "get diesel out of food production". Some New Zealand farmers are burning 200,000 to 300,000 litres of the dirty fuel a year, he says, and every drop</p>			


contributes to the warming planet.

Mackwell insists he has a better alternative – a steam engine. Burning wood chip. The pair have now identified a new niche that combines food production and trains – sugar cane farmers in Australia and Fiji. Sugar cane grows tall and bulky. Many of Queensland’s 4000 cane farmers already transport harvested cane on narrow gauge railways instead of trucks. Anybody who has driven through cane country in Queensland will have seen these operations.


In the state, train infrastructure and train expertise already exists.

The biofuel would be the bulky chaff left over after harvesting and processing the cane. Indeed the chaff, or “bagasse”, was burned in steam locomotives that historically served the cane industry in Queensland, before being replaced by diesel.


## Sugarcane cabins and floating seats: The future of aircraft design

	<b>Independent</b>	<b>August 26, 2022</b>	<a href="https://www.independent.co.uk/travel/inspiration/future-aircraft-design-seats-materials-ai-b2148603.html">https://www.independent.co.uk/travel/inspiration/future-aircraft-design-seats-materials-ai-b2148603.html</a>
	<p>Plane cabins are ever-changing, particularly in the long-haul world. In the past few months alone we’ve seen Air New Zealand unveil its first lie-flat beds for economy passengers – a series of bookable bunk-beds towards the back of the cabin known as the “Skynest”, which can be reserved for a mile-high nap during a chunk of the flight. Finnair has rethought the traditional business class seat with a new wide-backed “lounge” chair, which gives you more room to move around, yet still lie flat.</p> <p>Sugarcane cabin walls: One major area of innovation is lighter materials for cabin walls. Lighter aircraft mean less fuel burn, and some engineering companies are experimenting with building the cabin walls and bulkhead with resin derived from sugarcane, polyfurfuryl alcohol (PFA). This is not only lighter, but more sustainably made than the current material plane interiors are sculpted from (phenolic sandwich panels). Algae has also been considered as a base for creating flexible, lightweight aircraft panels, but developments to make either safe enough for commercial flights could take decades.</p>		

## Two major investments for Mount Gay with sugar mill and new bond [Barbados]

	<b>Loop</b>	<b>September 9, 2022</b>	<a href="https://barbados.loopnews.com/content/two-major-investments-mount-gay-sugar-mill-and-new-bond">https://barbados.loopnews.com/content/two-major-investments-mount-gay-sugar-mill-and-new-bond</a>
	<p>Mount Gay Distillery is reaffirming its commitment to the island with massive investments into the construction of a new sugar mill and aging bond at its St Lucy plant.</p> <p>During a recent tour of both facilities, Managing Director Raphaël Grisoni explained that the project represented an investment of over \$40 million into the local rum industry.</p> <p>“We also wanted to put our money where our mouth is and show the deep commitment that Mount Gay has in terms of investment in Barbados and investment which is leading to innovation and added value,” Grisoni stated.</p>		

## Brazil debates sustainable ag and its lack of international recognition [Brazil]

	<b>IHS Markit</b>	<b>September 9, 2022</b>	<a href="https://ihsmarkit.com/research-analysis/brazil-debates-sustainable-ag.html">https://ihsmarkit.com/research-analysis/brazil-debates-sustainable-ag.html</a>
	<p>Speakers at the Global Agribusiness Forum in Brazil in late July insisted that Brazilian agriculture was sustainable even if many of its innovations and practices were not recognised or widely known outside of the country.</p> <p>Brazilian growers' association CNA technical director Bruno Barcelos Lucchi claimed that the country's farmers produced and preserved as only growers do in a few countries in the world.</p> <p>Industry association CropLife Brasil president Christian Lohbauer agreed. "Brazilian agriculture is already sustainable. We work with sustainability. There are problems with our agriculture. We have illegal mining and logging, some are not employing GAP," he conceded. "But our ag business is built around sustainability, with no-till planting, carbon capture, using animal waste. But the world has not received news of this in an organised manner." President of social organisation Instituto Nova Era Vinicius Biagi insisted that agriculture was "about sustainability. It produces and conserves or it is not ag, it is mining".</p>		

## Brazil's Sugarcane Season Seen Smallest Since 2011 [Brazil]

	<b>European Supermarket Magazine</b>	<b>August 22, 2022</b>	<a href="https://www.esmmagazine.com/supply-chain/brazils-sugarcane-season-seen-smallest-since-2011-205863">https://www.esmmagazine.com/supply-chain/brazils-sugarcane-season-seen-smallest-since-2011-205863</a>
	<p>Brazil's government on Friday sharply cut its view for the sugarcane crop, projecting the smallest volume since 2011 amid unfavourable weather and a large reduction in planted area as farmers switch to more profitable crops, such as soy and corn.</p> <p>Government agency Conab said in its second projection for the 2022/23 season that it now expects sugarcane production of only 514 million tonnes in the main centre-south (CS) sugar belt, compared with the 539 million tonnes it had projected in April.</p>		

## 10 Successful Teams Get Smart Farm Grant Challenge (SFGC) – Grant [India]

	<b>India Education Diary</b>	<b>September 10, 2022</b>	<a href="https://indiaeducationdiary.in/10-successful-teams-get-smart-farm-grant-challenge-sfgc-grant/">https://indiaeducationdiary.in/10-successful-teams-get-smart-farm-grant-challenge-sfgc-grant/</a>
	<p>New Delhi : Software Technology Parks of India (STPI) distributed Rs. 5 Lakhs each to 10 shortlisted Teams under the Smart Farm Grant Challenge Programme. The grant distribution and the award ceremony were held at the Ministry of Electronics and Information Technology, New Delhi, where Sh. Alkesh Kumar Sharma (Secretary, MeitY) handed over the cheques to the winning teams.</p> <p>"Last-mile innovations focused on smallholder farmers are key for India's Agri &amp; allied ecosystem and Agri #startups should develop their products keeping smallholder farmers in mind," said Sh. Alkesh Kumar Sharma, Secretary, MeitY.</p>		

"Optimum time of Sugarcane Harvest can be predicted using technologies like AI & ML etc," said Sh. Roshan Lal Tamak, Executive Director &CEO, DCM Shriram.

## Chhattisgarh's first ethanol plant to come up in Kabirdham district [India]

	<b>Business Standard</b>	<b>September 5, 2022</b>	<a href="https://www.business-standard.com/article/economy-policy/chhattisgarh-s-first-ethanol-plant-to-come-up-in-kabirdham-district-122090501091_1.html">https://www.business-standard.com/article/economy-policy/chhattisgarh-s-first-ethanol-plant-to-come-up-in-kabirdham-district-122090501091_1.html</a>
<b>Business Standard</b>	<p>Chhattisgarh's first ethanol plant will be constructed near Boramdev Cooperative Sugar Factory in Kabirdham district. The district administration has identified 35 acres of vacant land adjacent to the factory for setting up the plant.</p> <p>Implementation of the project has been accelerated after Chief Minister Bhupesh Baghel said he would include the agriculture-based ethanol plant as one of the priority schemes of his government. The plant will have a capacity of 80 kilo litres per day (KLPD).</p> <p>The Chhattisgarh government has decided to involve private players for financial and technical participation in the project to strengthen the state's economy. The state's first ethanol plant will be set up under the public-private-partnership (PPP) model.</p>		

## The Israeli agritech startups leading crop innovation [Israel]

	<b>CTech</b>	<b>August 28, 2022</b>	<a href="https://www.calcalistech.com/ctechnews/article/r1e6jlnji">https://www.calcalistech.com/ctechnews/article/r1e6jlnji</a>
<b>CTECH</b>	<p>"If you ate today - thank a farmer" is a popular saying, but given recent innovations in the field, Israeli agtech professionals should be acknowledged as well. As dozens of new ventures continue to enter this 'growing' field, CTech presents the leading Israeli agricultural technology startups leveraging AI and machine learning to optimize crop yields, identify pests, and minimize pesticide use for the benefit and safety of all.</p> <p>Name: Taranis          Founded: 2014          Funding: \$59.5M</p> <p>Founders: Ofir Schlam (CEO), Eli Bukchin, Assaf Horowitz, Ayal Karmi.          Agricultural intelligence company Taranis operates fleets of drones and low-flying aerial vehicles capable of capturing ultra-high-resolution imagery mid-flight. Taranis' artificial intelligence system analyzes these images and aggregates this data as well as data from satellite images to detect early signs of crop diseases, insect infestations, nutrient deficiencies, and other crop risk factors. Taranis' system can cover an area of 400 dunams (400,000 square meters) in less than 20 minutes, according to the company.</p> <p>Taranis currently focuses its efforts on assisting sugarcane growing in Brazil and in the midwestern US, where it specializes in open field core crops: corn, soybeans and cotton.</p>		

## Surge in sugar factories imperils industry's future [Kenya/Uganda]

	<b>Monitor</b>	<b>September 10, 2022</b>	<a href="https://www.monitor.co.ug/uganda/news/national/surge-in-sugar-factories-imperils-industry-s-future-3943728">https://www.monitor.co.ug/uganda/news/national/surge-in-sugar-factories-imperils-industry-s-future-3943728</a>
<b>MONITOR</b>	<p>In December last year, members of the Kenya Sugarcane Growers Association called for an audit of the country's sugar deficit. The call was precipitated by the fact that an increase in the number of sugar mills had not translated into increased production and a reduction in the deficit.</p> <p>"When we only had five sugar factories in Kenya, the deficit was at 200,000 metric tonnes. We are simply asking why with 10 factories crushing cane the deficit is the same?" Mr Richard Ogendo, the secretary general of the association, told Business Daily.</p> <p>The demand for such an audit would perhaps not have arisen if they had looked across their western border where sugar production has been on the decline despite an increment in the number of sugar factories.</p>		

## Biofuel subsidies extended for two more years [Thailand]

	<b>Bangkok Post</b>	<b>September 9, 2022</b>	<a href="https://www.bangkokpost.com/business/2388330/biofuel-subsidies-extended-for-two-more-years">https://www.bangkokpost.com/business/2388330/biofuel-subsidies-extended-for-two-more-years</a>
<b>Bangkok Post</b>	<p>Subsidies for biofuel, originally scheduled to end this month, will be extended for another two years to promote the use of greener fuel mixes and support farmers, the National Energy Policy Committee...</p> <p>The government has spent part of the money in the Oil Fuel Fund to subsidise prices of ethanol, made from sugar cane and cassava, as well as palm oil-derived methyl ester to promote the use of biofuels, reduce dependence on fossil fuels and help farmers earn more income.</p> <p>The subsidies will now remain in place until Sept 24, 2024, Energy Minister Supattanapong Punmeechaow said after a meeting of the committee, chaired by Deputy Prime Minister Prawit Wongsuwon.</p>		

## Latest Research

### Detection of White Leaf Disease in Sugarcane Using Machine Learning Techniques over UAV Multispectral Images

Sugarcane white leaf phytoplasma (white leaf disease) in sugarcane crops is caused by a phytoplasma transmitted by leafhopper vectors. White leaf disease (WLD) occurs predominantly in some Asian countries and is a devastating global threat to sugarcane industries, especially Sri Lanka. Therefore, a feasible and an effective approach to precisely monitoring WLD infection is important, especially at the early pre-visual stage. This work presents the first approach on the preliminary detection of sugarcane WLD by using high-resolution multispectral sensors mounted on small unmanned aerial vehicles (UAVs) and supervised



machine learning classifiers. The detection pipeline discussed in this paper was validated in a sugarcane field located in Gal-Oya Plantation, Hingurana, Sri Lanka. The pixelwise segmented samples were classified as ground, shadow, healthy plant, early symptom, and severe symptom. Four ML algorithms, namely XGBoost (XGB), random forest (RF), decision tree (DT), and K-nearest neighbors (KNN), were implemented along with different python libraries, vegetation indices (VIs), and five spectral bands to detect the WLD in the sugarcane field. The accuracy rate of 94% was attained in the XGB, RF, and KNN to detect WLD in the field. The top three vegetation indices (VIs) for separating healthy and infected sugarcane crops are modified soil-adjusted vegetation index (MSAVI), normalized difference vegetation index (NDVI), and excess green (ExG) in XGB, RF, and DT, while the best spectral band is red in XGB and RF and green in DT. The results revealed that this technology provides a dependable, more direct, cost-effective, and quick method for detecting WLD.

**Published 1 September 2022**

> [Link](#)

### Extraction of cellulose from sugarcane bagasse via ultrasonic-assisted alkaline technology

Ultrasonic-assisted alkaline (UAA) technology is applied to extract cellulose from lignocellulose biomass, sugarcane bagasse (SCB). The SCB is a type of agriculture residue that consists of about 50 % (w/w) of cellulose content, thus potential to serve as feedstock for cellulose production via UAA technology. Due to the complex and sturdy structure of lignocellulosic biomass, most of the current extraction processes in the industry still apply multi-step processes that involve chemical-mechanical technology, which is time-consuming and not eco-friendly. UAA technology is the potential to solve the issue but the details of the whole process are still required for its feasibility in the industry. The performance of UAA technology in the extraction process of cellulose is investigated with varying process parameters including ultrasonic amplitude (20%, 30%, 40%), treatment temperature (70 °C, 80 °C, 90 °C), and potassium hydroxide (KOH) concentration (0.25 M – 1.25 M). The highest purity of cellulose, 83.22 % (w/w) is obtained at an ultrasonic amplitude of 30 % that treated at a temperature of 80 °C under KOH condition of 1.25 M. The extracted cellulose is further reacted with sodium monochloroacetate to form carboxymethylcellulose (CMC), with degree of substitution of 0.3624. The obtained cellulose yield proved that UAA technology is promising, implying its potential applicability in the industry with more future works.

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> [Link](#)

AIP Conference Proceedings

### Effect of chemical treatment on the structural, thermal, and mechanical properties of sugarcane bagasse as filler for starch-based bioplastic

The demand for green products is pushing industries to search for more eco-friendly materials, especially for food packaging applications. Starch biopolymer has been recognized as biodegradable material that can be produced from various plants. However, the strength of starch-based bioplastic retards their

widespread application. Simultaneously, the high amount of agricultural waste produced by the food industry has been a growing environmental issue. Incorporating agro-waste fibers as a biofiller in starch-based bioplastic can improve the properties of the bioplastic, allowing its use in various applications. Thus, this study aims to evaluate the effect of chemical treatment on the structural, thermal, and mechanical properties of sugarcane bagasse as filler for starch-based bioplastic.

Results showed that alkaline treatment improved surface roughness and freed it of surface impurities. Results revealed that the thermal stability and mechanical properties improved significantly with the incorporation of sugarcane bagasse (SB) loading into potato starch (PS). The highest tensile strength (5.30 MPa) and Young's modulus (28.72 MPa) were exhibited by the sample with 6% SB loading and further increments of SB led to a decrease in the strength of the biopolymer.

The incorporation of alkali-treated SB could increase and enhance the tensile strength and thermal stability of the bioplastic. This would contribute to reinforced materials that will allow for the application of PS as a new potential biodegradable material. Thus, it reduces the disposal period process and has great potential as an environmentally friendly, biodegradable, and renewable material. © 2022 Society of Chemical Industry (SCI).

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> [Link](#)



## Integrated Approach in Genomic Selection to Accelerate Genetic Gain in Sugarcane

Marker-assisted selection (MAS) has been widely used in the last few decades in plant breeding programs for the mapping and introgression of genes for economically important traits, which has enabled the development of a number of superior cultivars in different crops. In sugarcane, which is the most important source for sugar and bioethanol, marker development work was initiated long ago; however, marker-assisted breeding in sugarcane has been lagging, mainly due to its large complex genome, high levels of polyploidy and heterozygosity, varied number of chromosomes, and use of low/medium-density markers. Genomic selection (GS) is a proven technology in animal breeding and has recently been incorporated in plant breeding programs. GS is a potential tool for the rapid selection of superior genotypes and accelerating breeding cycle. However, its full potential could be realized by an integrated approach combining high-throughput phenotyping, genotyping, machine learning, and speed breeding with genomic selection. For better understanding of GS integration, we comprehensively discuss the concept of genetic gain through the breeder's equation, GS methodology, prediction models, current status of GS in sugarcane, challenges of prediction accuracy, challenges of GS in sugarcane, integrated GS, high-throughput phenotyping (HTP), high-throughput genotyping (HTG), machine learning, and speed breeding followed by its prospective applications in sugarcane improvement.

**Published August 17, 2022**

> [Link](#)





## Sustainable Valorization of Waste and By-Products from Sugarcane Processing

*Sugarcane is a lignocellulosic crop and the juice extracted from its stalks provides the raw material for 86% of sugar production. Globally, sugarcane processing to obtain sugar and/or ethanol generates more than 279 million tons of solid and liquid waste annually, as well as by-products; namely, straws, bagasse, press mud, wastewater, ash from bagasse incineration, vinasse from ethanol distillation, and molasses. If not properly managed, this waste will pose risks to both environmental factors and human health. Lately, valorization of waste has gained momentum, having an important contribution to the fulfillment of policies and objectives related to sustainable development and circular bioeconomy. Various technologies are well-established and implemented for the valorization of waste and by-products from sugarcane processing, while other innovative technologies are still in the research and development stage, with encouraging prospects. We propose a sustainable sugarcane processing flow and present an analysis of the physico-chemical characteristics of generated wastes and by-products. We emphasize the available possibilities of valorizing each waste and by-product, considering that they are important biomass resources for obtaining biofuels and a wide range of other products with added value, which will contribute to the sustainability of the environment, agriculture, and human health worldwide.*

**Journal published September 5, 2022**

> [Link](#)



## Sugarcane Vinasse: Evaluation of their Use as an Alternative Fuel

*An alternative to the energy matrix diversification and leveraging the use of renewable sources is the energy recovery of wastes. In this sense, sugarcane vinasse is a potential by-product of the sugar-energy sector and it is estimated a generation of 10 to 15 liters per liter of ethanol produced. The study developed in this work evaluated the use of vinasse as an alternative fuel, aiming at expanding the sustainability of the ethanol production process. Vinasse in natura samples were provided by a facility located in the State of São Paulo for the analyses of total solids (16,887 mg/L) and density (1.009 g/mL). Through literature data, the higher heating value on dry basis and the lower heating value on wet basis were estimated. Using data from the sugarcane harvests from 1987/1988 to 2019/2020, a mathematical model was developed capable of estimating the quantity of vinasse produced for 2019/2020 harvest (287 to 430 thousand cubic meters), being its environmentally adequate destination an important challenge to the sugar-energy sector.*

**Journal published June 5, 2022**

> [Link](#)



## Use of carbohydrate-directed enzymes for the potential exploitation of sugarcane bagasse to obtain value-added biotechnological products

*Microorganisms, such as fungi and bacteria, are crucial players in the production of enzymatic cocktails for biomass hydrolysis or the bioconversion of plant biomass into products with industrial relevance. The biotechnology industry can exploit lignocellulosic biomass for the production of high-value chemicals. The generation of biotechnological*

products from lignocellulosic feedstock presents several bottlenecks, including low efficiency of enzymatic hydrolysis, high cost of enzymes, and limitations on microbe metabolic performance. Genetic engineering offers a route for developing improved microbial strains for biotechnological applications in high-value product biosynthesis. Sugarcane bagasse, for example, is an agro-industrial waste that is abundantly produced in sugar and first-generation processing plants. Here, we review the potential conversion of its feedstock into relevant industrial products via microbial production and discuss the advances that have been made in improving strains for biotechnological applications.

**Published: September 5, 2022**

> [Link](#)



### Resource Use Efficiency and Yield Advantage of Sugarcane-Based Cropping System in Tropical India

Sugarcane offers a unique potential for intercropping. To ensure the optimum productivity in an intercropping system, one must ensure that the peak periods of growth of the two crops do not coincide, so that one quick-maturing crop completes its life cycle before the main period of growth of the other crop starts. Though economic efficiency of sugarcane (*Saccharum officinarum*) intercropping system has attracted a lot of attention around the world, interspecific competition between sugarcane and intercrops has not been studied so far. Field experiments were conducted during 2014–2015 and 2015–2016 at ICAR–Sugarcane Breeding Institute in split plot design with three rates of Nitrogen (N) (100, 75 and 50% of recommended N) to sugarcane as main plot treatments and six intercrops (I), namely finger millet, black gram, soybean, sesame, amaranthus and sunn hemp along with sole crop of sugarcane as subplot treatments. The yield and nitrogen balance of sugarcane and intercrops, and quality of sugarcane juice were determined. Land equivalent ratio (LER), was used to evaluate the potential advantages of the intercrops, Area Time Equivalency Ratio (ATER), Aggressivity (AG), and competitive ratio (CR) which based on crop yield and nitrogen acquisition were used to evaluate interspecific competition between sugarcane and intercrops. The results indicated that sugarcane–intercropping system had intercropping advantages based on LER. Application of 100% N has recorded higher number of millable canes and cane yield compared to 75% and 50% N levels. However, the cane yield at 100% N was on par with 75% N during 2015–2016. Higher ATER and CR recorded in case of sugarcane + soybean. Aggressivity (AG) was higher at 100% N level indicates its optimal dosage of N for the sugarcane growth. AG is greater than zero, indicating the competitive ability of sugarcane exceeds that of other intercrops. Net loss of N was also found less under the 100% N as compare to the rest of N levels and under sugarcane-based cropping system, there is heavy decline in N balance at post-harvest available N in the Sugarcane + finger millet intercropping system. Nitrogen levels and the sugarcane-based cropping system has not influenced the juice quality. Economics envisages reducing the N level is not advantageous for profitable system productivity. The best combination in terms of B:C ratio is sugarcane + amaranthus as the cost of cultivation is lower and the net return was higher.

**Published: 5 September 2022**

> [Link](#)



## Events

	<p><b>XII Congreso Tecnicaña (XII Tecnicaña Congress)</b>  <i>Tecnicaña</i>  <b>12-16 September 2022</b></p> <p><i>At Tecnicaña we are preparing to share a unique international scenario with the Sugarcane Agroindustrial Sector, for this reason, we invite you to participate in this great meeting that will allow us to have the opportunity to meet again around sugarcane to discuss and reflect on the future and projections of the agribusiness.</i></p> <p><b>Cali, Valle del Cauca, Colombia</b></p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>
	<p><b>Workshop on "Innovation and Networking of Sugarcane Research for Future Sugarcane Industry in Asia Pacific Region"</b>  <i>JIRCAS-FFTC</i>  <b>15 September 2022</b></p> <p><b>Videoconference – free registration</b></p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>
<p><b>Sugar &amp; Ethanol Asia</b></p>	<p><b>Sugar &amp; Ethanol Asia</b>  <i>Informa Connect</i>  <b>20-22 September 2022</b></p> <p><i>Join the 15th anniversary of Sugar &amp; World Asia in person this September! Meet sugar millers and ethanol producers from across the Asia-Pacific including Thailand, India, Pakistan, Philippines and Indonesia.</i></p> <p><b>Sheraton Grande Sukhumvit Hotel, Bangkok, Thailand</b></p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>
 	<p><b>7th IAPSIT International Sugar Conference &amp; Sugarcon-2022</b>  <i>"Sustainability of the Sugar and Integrated Industries: Issues &amp; Initiatives"</i>  <i>Indian Institute of Sugarcane Research</i>  <b>16-19 February 2022</b>  <b>Postponed to 16-19 October 2022</b>  <b>Lucknow, India &amp; virtual platform (for international delegates)</b></p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>

	<p><b>Bonsucro Global Week</b>  <i>Bonsucro</i>  <b>17-20 October 2022</b>  Ribeirão Preto, Brazil</p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>
	<p><b>25th World Ethanol &amp; Biofuels</b>  <i>Informa Connect</i>  <b>8-10 November 2022</b>  Steigenberger Wiltcher's Hotel, Brussels &amp; digital</p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>
	<p><b>31st ISO International Seminar 2022</b>  <i>International Sugar Organization</i>  <b>22-23 November 2022</b>  East Wintergarden, Canary Wharf, London, UK</p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>
	<p><b>ISSCT XXXI Congress</b>  <i>International Society of Sugar Cane Technologists / The Sugar Technologists' Association of India (STAI)</i>  <b>February 2023</b></p> <ul style="list-style-type: none"> <li>• <i>Congress: 20-23 February</i></li> <li>• <i>Pre-congress tour: 17-18 February</i></li> <li>• <i>Post-congress tour 24-28 February</i></li> </ul> <p>Hyderabad International Convention Centre (HICC), India</p> <p style="text-align: right;">&gt; <a href="#">Link</a></p>