




Research and Development collaboration


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A Driving Force for
National Science and Technology Capability



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4th JASTIP Symposium “Biomass to Energy, Chemicals and Functional Materials”

Date: 3rd and 4th July 2017
Venue: NSTDA, Rangsit, Thailand

4th JASTIP Symposium “Biomass to Energy, Chemicals and Functional Materials”

4th JASTIP Symposium “Biomass to Energy, Chemicals and Functional Materials”

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RESEARCH NEWS

- MOST and 50 Allied Organizations promote EECI
- Call for papers - STI Days 2017
- LAMP-LFD assay for malaria parasite detection

NEWS & ANNOUNCEMENTS


- Government promotes Thai herbal industry
- 4th JASTIP Symposium “Biomass to Energy, Chemicals and Functional Materials”
- Inspiring youngsters to learn science and technology: The



https://www.youtube.com/watch?v=gN29cITg8p8

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EXCELLENCE, RELEVANCE, IMPACT

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The Heart of Nation
King Bhumibol Adulyadej
1927 – 2016

https://www.youtube.com/watch?time_continue=6&v=JPP9He_yseA

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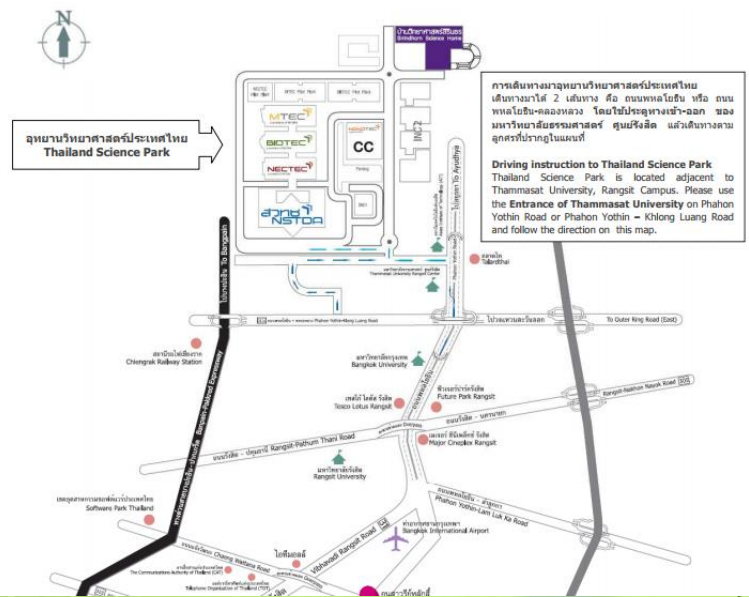


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National Center for Genetic Engineering and Biotechnology (BIOTEC)
113 Thailand Science Park, Phahonyothin Road, Khlong Nueng, Khlong Luang, Pathum Thani 12120 THAILAND


ศูนย์พันธุวิศวกรรมและเทคโนโลยีชีวภาพแห่งชาติ
113 อุทยานวิทยาศาสตร์ประเทศไทย ถนนพหลโยธิน ตำบลคลองใหญ่ อำเภอคลองหลวง จังหวัดปทุมธานี 12120





Driving instruction to Thailand Science Park
Thailand Science Park is located adjacent to Thammasat University, Rangsit Campus. Please use the Entrance of Thammasat University on Phahon Yothin Road or Phahon Yothin – Khlong Luang Road and follow the direction on this map.

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Director of BIOTEC

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MANAGEMENT TEAM




Dr. Somvong Tragoonrun
Executive Director

Somvong Tragoonrun obtained his Ph.D. in plant and soil science from Montana State University. Before completing his doctoral degree, Somvong had experience working in the research departments of the US Environmental Protection Agency (EPA) and the International Maize and Wheat Improvement Center (CIMMYT). He started his career at BIOTEC in 1992 as a researcher in Plant Genetic Engineering Laboratory. In 1999, he was tasked to lead the establishment of DNA Technology Laboratory and became its first director until the spin-off in 2009. Somvong has served as Director of Genome Technology Research Unit since 2008.

As an expert in genomic research, Somvong was a key member of Thai research team participating in the International Rice Genome Sequencing Project. His expertise in genome technology allows him to lead the team to develop genetic testing of GM products, species identification and grain purity. He is also an expert in utilizing genome technology for crop improvement, with the current work concentrating on eucalyptus, oil palm and sugar cane. He was the recipient of 2013 Technologist Award, a prestigious award established by the Foundation for the Promotion of Science and Technology.

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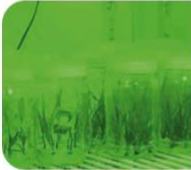
NETWORK LINKS

- >> Plant Molecular Genetics and Biotechnology Laboratory
- >> Plant Physiology and Biochemistry Laboratory
- >> Rice Gene Discovery and Utilization Laboratory
- >> Enhancing Utilization Plant Research Laboratory
- >> Plant Geoinformatics and Digital Management System Laboratory

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ABOUT US


The Plant Physiology and Biochemistry Program (PPB Program) aims to generate new technologies by conducting multi-disciplinary research related to plant growth regulation. The core research disciplines of the program include physiology, biochemistry, tissue and cell culture and molecular genetics.





The program's current focus is on the selection of plants that are tolerant to drought and soil salinity. At the same time, the program employs plant tissue culture techniques to produce rapid multiplication of various economic crops. The PPB Program has been participating in the transfer of tissue culture technology to the public, both to small-scale farmers and to small and medium enterprises (SMEs) in the private sector that commercially propagate elite clones.

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Plant Physiology and Biochemistry Laboratory

Plant Biotechnology Research Unit

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MISSION & VISION

Vision

One of world class leaders in the research and development of plant physiology and biochemistry in responses to salt stress that leads to innovations and technology transfers to the target stakeholders.


Mission

Research and development on the basic knowledge of osmotic potential control at the cellular level for salt defense mechanism of aromatic rice, sugarcane and oil palm resulting in innovated technology for increased productivity and developed novel products for high-valued markets.

R&D strategic policies

1. To promote the professional research team of osmotic potential control at the cellular level for salt defense mechanism leading to innovations and novel products
2. To build national and international networking for learning, exchanging, modifying, pyramiding and investigating innovation technology, knowledge and process.
3. To implement the discovery, knowledge, and technology to users in the social and private sectors as well as to cooperate with private sectors to build practical technologies and appropriate products.

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Key success in PPBL

Publications

Frontiers
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Isolation and functional characterization of 3-phosphoglycerate dehydrogenase involved in salt responses in sugar beet

Authors Authors and affiliations
Kunhikō-Kōo, Koichi Tsubomi, Vandira Rai, Cattarin Theerawitaya, Suriyan Cha-Um, Nana Yamada-Kato, Shota Sakikubo, Yoshiko Tanaka, Tetsuhiro Takabe

Original Article First Article
First Online: 28 May 2017

Abstract

The present study investigated the significance of serine biosynthetic genes for salt stress in sugar beet (*Beta vulgaris*). We isolated a total of four genes, two each encoding D-3-phosphoglycerate dehydrogenase (*Bc-PGDHa* and *Bc-PGDHb*) and serine hydroxymethyl transferase (*Bc-SHMTa* and *Bc-SHMTb*). mRNA transcriptional expression for *Bc-PGDHa* was significantly enhanced under salt stress conditions in both leaves and roots of sugar beet.

4,298

frontiers
in Plant Science | Crop Science and Horticulture

ORIGINAL RESEARCH ARTICLE
Front. Plant Sci., 08 August 2017 | <https://doi.org/10.3389/fpls.2017.02450>

Water-Deficit Tolerance in Sweet Potato [*Ipomoea batatas* (L.) Lam.] by Foliar Application of Paclobutrazol: Role of Soluble

TOTAL VIEWS

Journal of the Science of Food and Agriculture SCI
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Research Article

Comparative proteomics and protein profile related to phenolic compounds and antioxidant activity in germinated *Oryza sativa* 'KDML105' and Thai brown rice 'Mali Daeng' for better nutritional value

Sarunyaporn Meksup, Sarinip Pongpakpian, Sitiruk Roytrakul, Suriyan Cha-Um, Kanjaratt Supabulwatana

First published: 16 August 2017 | Full publication history
DOI: 10.1002/jsfa.8498 | View on Crossref

Cited by (Crossref): 0 articles | Check for updates | Citation tools

Abstract

BACKGROUND

Available online: www.onlinelibrary.wiley.com
Print ISSN 0255-902X, Electronic 1842-4309
New Back Home: 2017, 4(1):344-471, DOI: 10.1002/jsfa.8498

Original Article


Physiological, Morphological Changes and Storage Root Yield of Sweetpotato [*Ipomoea batatas* (L.) Lam.] under PEG-Induced Water Stress

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¹Division of Agricultural Science, Mahachulalongkornrajavidyalaya University, Kamphaeng Saen, Kamphaeng 73150, Thailand
²National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency (NSTDA), Pathum Thani 12120, Thailand, suravoot@biotec.or.th [*Corresponding author]

Abstract

Sweetpotato is an important tuberous root crop rich in nutrients such as vitamins and carbohydrates, and can grow well in arid regions with less water consuming crop. The aim of this research was to evaluate the storage root yield, physiological, biochemical and morphological traits in sweetpotato cv. 'Japanese Yellow' subjected to polyethylene glycol (PEG)-induced water deficit. At harvest (4 months after planting) the number of storage roots per plant and storage root fresh weight in




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COLLABORATION WITH LOCAL AND INTERNATIONAL SCIENTISTS

1. Faculty of Science, Mahidol University, Bangkok, Thailand
2. Faculty of Science, Maharakram University, Maharakram, Thailand
3. Faculty of Pharmaceutical Science, Chulalongkorn University, Bangkok, Thailand
4. Faculty of Agriculture, Kasetsart University, Kampaengsan, Thailand
5. Faculty of Science, Sinraprakron University, Nakronpathom, Thailand
6. Faculty of Science, Naresuan University, Phisanulok, Thailand
7. Institute of Food Research and Development, Kasetsart University, Thailand
8. Rice Research Center, Agricultural Ministry, Thailand
9. Pimai Salt Ltd. Pimai, Nakronrashsima, Thailand
10. Sadaw-Thai Ltd., Supanburi, Thailand
11. Mithphol Ltd., Chaiyaphum, Thailand
12. Bangsai Agroindustry Ltd., Bangkok, Thailand
13. Faculty of Horticulture, Chiba University, Japan
14. Meijo University Research Institute, Japan
15. Plant Biotechnology Institute, Saskatoon, Canada
16. Hunan University, Hunan, China
17. Institut De Recherche Pour Le Developpement, France

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Publication list in Scopus

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Documents: 87
 Citations: 889 total citations by 706 documents
 h-index: 16
 Co-authors: 89
 Subject area: Agricultural and Biological Sciences - Biochemistry, Genetics and Molecular Biology [View More](#)

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Other name formats: Cha-Um, S., Cha-Um, Suriyan, Cha-um, S. [View More](#)

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Author History
 Publication range: 1998 - Present
 References: 2137

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[American Journal of Plant Physiology](#) [View documents](#)
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Water-deficit tolerance in sweet potato [<i>Ipomoea batatas</i> (L.) Lam.] by foliar application of paclobutrazol: Role of soluble sugar and free proline	Yooyongwech, S., Samphumphuang, T., Tisarum, R., Theerawitayaya, C., Cha-Um, S.	2017	Frontiers in Plant Science	0
Open Access				
View at Publisher				
Isolation and functional characterization of 3-phosphoglycerate dehydrogenase involved in salt responses in sugar beet	Kito, K., Tsutsumi, K., Rai, V., Tanaka, Y., Takabe, T.	2017	Protoplasma	0
Article In Press				

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