

Sol Newsletter



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Community News

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Announcement from SOL & ICuGI 2011 Organizing Committee

"Yes, we can do it!"

Dear colleague,

The 8th Solanaceae and 2nd Cucurbitaceae Joint Conference will be rearranged from Tsukuba city to Kobe city in Japan from November 28 to December 2, 2011. More details on the conference information are written on the conference website at <http://www.sol2011.jp/>.

When: 11/28 - 12/2

Where: Kobe Convention Center (<http://kobe-cc.jp/english/kaigi/index.html>)

Abstract submission: by 9/2

Early registration: by 9/2

Late registration: by 10/28

Banquet: 12/1

Excursion: 12/2

Contact info (program): sol2011@gene.tsukuba.ac.jp

Contact info (management): sol2011-gbm@or.knt.co.jp

Because of the "2011 Tōhoku earthquake and tsunami" that occurred on March 11th, many parts of the east coast of Japan suffered a great deal of damage. Tsukuba city, the original meeting location of the SOL&ICuGI2011, also suffered serious lifeline damage. The situation is getting better, and all services in Tsukuba city are completely restored. However, many regions and cities on the east coast that suffered the

tsunami attack have not been restituted yet, the attack inflicted irreparable damage on a large area of agricultural lands due to salt corrosion derived from seawater.

As of April 30th, damage caused by the earthquakes was estimated to come to 150 to 250 billion US dollars, and it was confirmed that more than 25,000 people were killed or went missing in the disaster.

The current biggest concern is the radiation release from Fukushima atomic plants, as you may know. After discussion with SOL and ICuGI steering committees, we decided to move the conference to Kobe city, which is about 600km from the plants. You can check the levels of radiation at specific locations in Japan at several websites providing real-time monitoring data on the radiation levels. We put these links on SOL&ICuGI HP so that you can tell how the situation is and what is going on with the plants. Under the current circumstance, Kobe city is considered far enough to safely organize the conference. With many comments and alternative scenarios, the decision was finally made that the SOL&ICuGI2011 conference should be held in Japan such that we can retrieve daily life as soon as possible in spite of this hard condition. Hence the answer is "Yes, we can do it!"

We would be very happy and encouraged if you and your colleagues would join us for this conference. We would like to express our sincerest gratitude for the continued support for Japan from all nations and peoples, and those who are trying to get things back under control in Japan.

On the behalf of the organizers, we are looking forward to seeing you at SOL&ICuGI 2011 at Kobe in Japan.

Thank you very much for your kind cooperation,
National organizing committee



EU-SOL Program Wraps Up after Five Years

EU-SOL was initiated in May 2006, and during the past five years the program contributed to the advancement of several initiatives related to the genetics and genomics of solanaceous crops. Contributions such as the core collection of approximately 7,000 tomato varieties, the results of the tomato taste panels, studies on the genetic basis of tuberization in potato, development of bioinformatics tools, and EU-SOL's role in the International Tomato Genome Sequencing Project are recognized as a great benefit for *Solanaceae* research programs worldwide. In addition to the scientific contributions, EU-SOL's education program distributed tomato seeds to almost 10,000 students at 340 schools in nineteen countries.

Even though the program has officially come to an end, the companies and the majority of the research groups involved in EU-SOL will build on EU-SOL results in their future endeavors. The phenotype and genotype data that were collected and systematically stored will remain available for future R&D. Tutorials for the bioinformatics tools developed through EU-SOL activities will remain online to support the scientists who utilize those tools. Alternatives to ensure continued availability of the educational packets are being explored and experience with outreach activities will be transferred to other projects.

Resources

Notice from Illumina, Inc.

Deadlines for any new orders or re-orders for the SolCAP Bead Chips:

SolCAP Potato consortium July 1, 2011

SolCAP Tomato consortium October 15, 2011

If you are interested in learning more about the resources available through the Solanaceae Coordinated Agricultural Project (SolCAP), visit their website at <http://solcap.msu.edu/>. They also have a newsletter (<http://solcap.msu.edu/news.shtml>) that provides updates on the project, information about SolCAP workshops and their annual meetings, etc.



Breeders Toolbox on SGN

The SOL Genomics Network (SGN; <http://solgenomics.net>) is a Clade Oriented Database (COD) containing genomic, genetic, phenotypic and taxonomic information for plant genomes. SGN originally concentrated on the Euasterid clade, including the families Solanaceae (e.g. tomato, potato, eggplant, pepper and petunia) and Rubiaceae (coffee), but the scope of the database is being expanded to include additional related families.

The Breeders Toolbox (<http://solgenomics.net/breeders/index.pl>) on SGN is dedicated solely to the resources that would be of the most interest to breeders, which will help save time figuring out where to start a search on SGN. The resources available on SGN include but are not limited to 1) various types of markers, 2) search capabilities for information on markers, 3) search capabilities for information on phenotypes, trait ontologies, and QTLs, 4) SNP data that will be available soon, and 5) tomato genome sequence, assembly, and annotation.

Currently, the toolbox page includes portals for doing trait and marker searches, a QTL tool, and a SNP tool that is under development (Figure 1). These portals provide quick access to the many molecular, genetic, and genomic resources available on SGN that can help to efficiently target breeding programs toward the traits of interest. As a result, the application of these resources has the potential to reduce both the amount of time and financial input needed to achieve breeding goals. The toolbox is a work in progress and tools will be added in the future based on breeder community needs and the availability of data.

In order to guide users through the features on the toolbox page, tutorials will be available at eXtension (<http://www.extension.org>), which will be accessible by links associated directly with each tool icon. At this time, the toolbox contains links for tutorials for the Tomato Genome Browser and designing a CAPS marker from a SNP using the SGN CAPS Designer.

If you have suggestions for additions and/or improvements to the toolbox, send an e-mail to sgn-feedback@solgenomics.net or Joyce Van Eck (jv27@cornell.edu).

Figure 1: Search capabilities and tools (SNP tool under development) available on the Breeders Toolbox page at the SOL Genomics Network.

SGN Breeders Toolbox [SIGN IN](#) | [NEW USER](#)

The purpose of this page is to give breeders direct links to breeder-relevant tools and data on SGN. It is a work in progress and your feedback or suggestions are welcome to build this into a comprehensive, easy to use and breeder-friendly resource.

We love feedback! Please contact Joyce van Eck with suggestions for improvements!

SNP Tool **Phenotypes** **Markers** **Genes** **QTL Tool**

Tutorials

- Plant Breeding and Genomics at the [eXtension](#) site
- Tomato Genome Browser [Webinar](#) presented at the 2010 Tomato Disease Workshop by [Heather Merk](#)
- Designing a CAPS Marker From a SNP Using The SGN CAPS Designer by [Heather Merk](#)

SGN tools

- Browse the SGN Markers database
- Browse available controlled vocabularies using the SGN Ontology browser
- Develop CAPS markers using the CAPS Designer
- Check intron locations in transcript data using the Intron Finder
- QTL data submission and on-the-fly QTL analysis for Solanaceae traits
- SGN gene and phenotype submission guide

Tools in development

- SNP discovery tool. This will be part of the [SolCAP](#) project.

Links

Research Poetry

A PhD student in Dr. Y. Sreelakshmi's group wrote this poem about troubles she faced in standardizing the conditions for her work using TILLING to isolate mutants in COP1 in tomato. They wanted to share this poem with our community knowing many of you can relate to the trials and tribulations of doing research, especially working out something new.

SOLITARY TILLER

Before the sun rise
My dreams surprise
With all new hope...
I'd deliberately elope...
No field, No cattle, No soil
In a tube of 20 μ L I lit the turmoil
Keeping my hands on either side
For three hours I pray going aside
I drive all my preparation
For LICOR is the next operation
To see my molecules TILL(ed)
In vain if they are STILL
Thy fruit has no season
Can be aborted without reason
I give buffer, taq, dNTPs, template
And all sources
I wonder why nature forces
An empty slice on gel plate
What's wrong? What's wrong?
Thoughts linger though I am strong!!
Once, Twice, Thrice ...
I question everyone??
Yet the answer is none!!!
Is it time, fate or destiny?
Only dismay not a desire for penny!
Believe me.....
I am a SOLITARY TILLER
Never a PCR KILLER!!!

-By

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Publications

A NEW potato book, *Genetics, Genomics & Breeding of Potato* edited by James M. Bradeen (University of Minnesota) and Chittaranjan Kole (Clemson University) has been published by Science Publishers and CRC Press. *Genetics, Genomics & Breeding of Potato* includes contributions from 20 expert authors in eight different countries. This volume details historical and contemporary potato research resulting in advances in nutritional quality, yield, disease and insect resistance, processability, plant growth and development, and other aspects. Also reviewed is research yielding significant molecular resources facilitating breeding, linkage and gene mapping, cytology, functional and structural genomics, and proteomics and metabolomics. Finally, future research developments that are likely to significantly advance efforts to understand and improve the potato are explored. More information at <http://www.crcpress.com/product/isbn/9781578087150>.

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Conferences and Workshop

International Conference on the Second Progress of 1000 Plant and Animal Reference Genomes Project

July 10 - 12, 2011
Shenzhen, China

<http://ldl.genomics.cn/event/conference.jsp?conId=48>

The Potato Association of America

August 14 - 18, 2011
Wilmington, North Carolina
<http://paa2011.org>

SolCAP Workshop at the Potato Association of America

August 14, 2011
Wilmington, North Carolina

http://solcap.msu.edu/workshops_webinars.shtml

Tomato Breeders Roundtable

October 9 - 11, 2011
Holiday Inn
Ithaca, NY

<http://tgc.ifas.ufl.edu/>

26th Annual Tomato Disease Workshop

October 11 - 13, 2011
Holiday Inn
Ithaca, NY

<http://vegetablemdonline.ppath.cornell.edu/TDW/index.html>

SolCAP Workshop at the Tomato Disease Workshop

October 11, 2011
Cornell University
Ithaca, NY

http://solcap.msu.edu/workshops_webinars.shtml

The Sixth International Conference on Genomics

November 7 - 11, 2011
Shenzhen, China

www.genomeconference.org.cn

SOL & ICuGI 2011

8th Solanaceae and 2nd Cucurbitaceae Joint Conference
November 28 - December 2, 2011
Kobe, Japan

<http://www.sol2011.jp/>

Plant Breeding Academies

Plant Breeding Academy at University of California, Davis

September 12-17, 2011
February 6-11, 2012
June 4-9, 2012

http://pba.ucdavis.edu/Programs/Class_III/

Plant Breeding Academy in Europe

The schedule for October 2011 to June 2013 is available at
http://pba.ucdavis.edu/PBA_in_Europe/PBA_in_Europe_Class_II/

Solanaceae Recipes

Red Pepper Salmon Pasta

<http://allrecipes.com>

Ingredients

4 (4 ounce) fillets salmon
 2 tablespoons lemon juice
 1/2 cup roasted red bell peppers
 1/3 cup grated Parmesan cheese
 1 tablespoon cornstarch
 2 teaspoons minced jalapeno peppers
 1 clove garlic, minced
 1/4 cup chopped fresh cilantro
 1 cup chicken broth
 1 (8 ounce) package angel hair pasta



Directions

In an 8-inch baking dish, arrange filets in a single layer. Sprinkle with lemon juice. Tightly cover dish with foil. Bake at 450 degrees F (230 degrees C). Cook until fish is opaque, but still moist looking in thickest part, 12 to 14 minutes.

Meanwhile, in a blender, smoothly puree red peppers, parmesan, cornstarch, chili, and garlic. Add cilantro and chicken broth; whirl to blend.

Pour pepper mixture into a 10-inch frying pan. Stir over high heat until boiling. Reduce heat to keep warm.

Cook pasta in 3 quarts boiling water until tender to bite, about 7 minutes. Drain, and return to pan.

Stir juices from the baked salmon into red pepper sauce. Mix 1 1/2 cups sauce with pasta. Spoon pasta onto plates. Top with fish, and drizzle with remaining sauce. Serve.

Tomato Chutney

<http://allrecipes.com>

Ingredients

2 pints cherry tomatoes
 1 small white onion, chopped
 1 green onion, chopped
 1/2 teaspoon chopped fresh cilantro
 2 green chile peppers, chopped
 salt to taste
 1 teaspoon lemon juice, or to taste

Directions

Place cherry tomatoes in a medium saucepan. Add just enough water to cover the bottom of the pan. Bring to a boil over medium-high heat, and let cook until tomatoes are soft and broken.

In a medium bowl, mix together the white onion, green onion, cilantro, and chile peppers. Add hot cooked tomatoes, and mix well. Season with salt, pepper and lemon juice to taste.