



## --NOVEMBER 2009--

Welcome to the November installment of Good Sprout News, a publication of the International Sprout Growers Association (ISGA). This month we update you on the 2010 convention, our new membership in the NCFST, the Sprout Safety Task Force, and a Dear Dr. Sprout article that addresses the questions sprout growers have about PCR.

### Convention Update: Save the Date!

The date is set, the hotel has been booked, and we are actively planning ISGA's Annual Conference 2010!

ISGA's 20th Annual Conference

May 19 - 21, 2010

Embassy Suites Downtown ([www.embassysuiteschicago.com](http://www.embassysuiteschicago.com))

Chicago, Illinois, USA

Come attend invaluable sessions such as:

- New Marketing Strategies for the Sprout Industry
- Sprout Nutrition
- US Food Safety and the NCFST Task Force
- Networking with ISGA members
- Site Visits to local growing and packaging operations

Your two-room suite in downtown Chicago includes breakfast and complimentary evening cocktail hour for the low rate of \$189/double. Stay a little longer and plan to attend the National Restaurant Association's meeting at McCormick place from May 22-25:

(<http://show.restaurant.org/NRA10/public/enter.aspx>)

Plan now, tell your friends, and let us know what you would like to see addressed at the Conference. To submit a topic you are interested in hearing about, just send us an email at [secretary@isga-sprouts.org](mailto:secretary@isga-sprouts.org).

See you in the Windy City!

## ISGA Joins NCFST and Attends First Sprout Task Force Meeting

*Respectfully Submitted by Bob Sanderson, President*

At the Board of Directors teleconference meeting on Oct. 1, it was voted that the ISGA join the National Center for Food Safety and Technology (NCFST).

The NCFST is a consortium of government, academia, and industry that works collaboratively on food related issues ranging from safety, to processing, to nutrition. Although the first priority will be safety-related, as an industry association, the ISGA can use the NCFST as a resource to investigate and publicize the nutritional properties of sprouts, which is the main reason for our initially joining together as an association.

There are presently three sprout industry NCFST members in addition to the ISGA: the Caudill Seed Company, Brassica Protection Products LLC, and Jonathans Sprouts. Other companies are strongly encouraged to join, as a statement of commitment to further reducing safety-related issues, and to provide direct input and possibly some funding for research efforts that will benefit the industry. There is the possibility for regional memberships or subgroup memberships, and the Center is flexible in terms of scheduling membership fee payments. Anyone interested should contact the ISGA Office, or Armand Paradis at NCFST (tel: 708/563-8175 email: [aparadi2@iit.edu](mailto:aparadi2@iit.edu))

The NCFST has helped to create a Sprout Task Force. The first Sprout Task Force meeting was held on October 28, in Oak Brook, Illinois, in conjunction with the NCFST Annual Meeting.

A basic question which is being addressed by the Task Force is, are the FDA Guidelines sufficient as-is, or do they need to be modified? Closely related to this is the investigation of alternative methods that might have comparable or greater safety benefits without some of the drawbacks of the interventions specified in the Guidance.

The following priorities were established at the NCFST meeting:

- ISGA Audit Checklist
- ISGA food safety guidelines
- Research Objectives
  - Validation of alternative rapid screening tests
  - Comparison of effectiveness of different antimicrobial chemicals for seed disinfection
  - Quantitative risk assessment to quantify the overall risk reduction from combined interventions (seed screening, seed disinfection, spent irrigation water testing, etc.)
- Outreach/educational workshops to raise GAP/GMP awareness and promote compliance
- Topics and participants for the next task force meeting

Participation in the NCFST-Sprout Industry Task Force is open to qualified sprout industry members; please contact Bob Sanderson at [megadome@meganet.net](mailto:megadome@meganet.net) for information.

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## Welcome New Members!

Nimesh Ray, President  
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925-365-0587  
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## Meet the ISGA Board of Directors

Bob Sanderson, President	<a href="mailto:megadome@meganet.net">megadome@meganet.net</a>
Bob Rust, Secretary	<a href="mailto:Bob@sproutnet.com">Bob@sproutnet.com</a>
Rob Baan	<a href="mailto:rob.baan@koppertcress.nl">rob.baan@koppertcress.nl</a>
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Peter van Heumen	<a href="mailto:pvanheumen@hamu.nl">pvanheumen@hamu.nl</a>

## Stephen Dench Resigns as ISGA Vice President

In his own words: “Due to my increased workload with taking on the new operations and additional farms I have not been able to do justice to my Position of VP of the ISGA and have been increasing guilty of not delivering on what is required to support Bob and Barbie to develop the ISGA.”

It is a great loss to the ISGA that Stephen has submitted his resignation as Vice President. Stephen was elected VP at the Paris convention in July 2005. He has been the editor and publisher of the newsletter and was instrumental in creating the Australian/New Zealand arm of the International Sprout Growers Association. Stephen has been a pleasure to work with and will be missed in this position, but we look forward to continuing to work with Stephen in other capacities in the organization. We are delighted at the success of his growing business and look forward to seeing his enterprise when we hold the Annual Conference in New Zealand in 2011. Thank you, Stephen, for your years of service and for the inspiration we get from your success in the sprout industry.

## Member in the Spotlight



Jay Louie

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Louie Foods had its humble beginning in 1950 when Jay's parents, Kenneth and Vickie, began growing bean sprouts in their apartment bathroom in Fresno, California. Their initial efforts to supplement their income turned into a full-time business in 1952 when they moved to a house at the company's current location. In 1963 they expanded their bean sprout operation and in 1985 Jay joined the family business "temporarily" when he moved his family from L.A. to Fresno. When Kenneth retired for health reasons, Jay stepped in to run the business, and in 1992 built a new, modern facility for bean sprout production. In 1997 the old space was remodeled to accommodate the "green" sprout line. Today Louie Foods supplies the San Joachin Valley (midway between San Francisco and Los Angeles). In his 20 years with the ISGA, Jay has served on the Board in the roles of Vice President and President, planned the Annual Conference when it was held in San Francisco, and most recently chaired the Food Safety Task Force.

“I joined ISGA close to 20 years ago. Our family owned business had been growing bean sprouts since the early 1950's. Joining the ISGA at that time was an investment to learn how other growers operated. We had been operating on our own for decades. Just being acquainted with a fellow grower near-by, we learned a lot. This was an opportunity to learn much more, and we have.

The ISGA may provide you with a limited "how to do it" information, created by veteran growers when they have the time to put it down in writing. However, the greatest benefit is the opportunity to network with others in your industry. You cannot expect to be handed a key to other members' business operation, but you are given an opportunity to meet other growers, and develop relationships that can open doors to many intangible resources. The old cliché that "you get as much as you put into it" is very appropriate. It doesn't happen over night.

During the course of my 20 year membership with the ISGA, our business has expanded and added new technology to produce bean sprouts. We have also added green sprout production. The planning and bringing these projects to fruition were greatly influenced by the intangible ties to a multitude of ISGA members that I have developed a relationship with. You learn firsthand what works and what doesn't.

In the mid 1990's the sprouting industry was confronted with a new issue, food safety. As a result of a massive Salmonella outbreak linked to alfalfa sprouts, health officials discovered the risk related to the production of sprouted seeds. My membership and Involvement with the ISGA kept me in the forefront of the food safety controversy. My involvement was in itself a learning experience that helped me to understand the scope and nature of the food safety issue, and to develop production procedures and practices to address the issue.

The food safety issue is not going away. It is a sour subject to sprout growers, but it is an issue that needs to be addressed until the problem is resolved. By attending the ISGA conventions, you learn firsthand about the latest developments in the safe production of sprouts. Yes, there is a video on the safe production of sprouts produced by the FDA with the assistance of ISGA members, but there are many nuances not covered by the tape and reading material. The safe production of sprouts is an ongoing project.

As a result of my membership with the ISGA I am greatly enriched by my relationship with sprout growers and suppliers here in the USA, on continents across both oceans, and in countries North and South of the USA. Attending conventions have given me an opportunity to travel to different parts of the world, to develop relationships with other growers, and to exchange ideas and concepts useful to my business. With the Internet, it is easy to keep in touch with any one or all of them. “

Jay Louie

## Dear Dr. Sprout

Dear Dr. Sprout,

I have been testing my spent irrigation water using the Assurance Gold and VIP rapid test kits as recommended in the FDA Guidance for sprouts. However, I have heard that some sprout companies are using the new PCR methods which they say are more accurate, faster and perhaps less expensive. I also hear that they have not been validated for use with spent sprout irrigation water. Please tell me if it is safe for me to use a PCR method.

Signed,

Always Searching for Something Better

Dear Always Searching,

Before the guidance was issued, the FDA labs validated Assurance Gold and VIP for testing for *Salmonella* in sprout spent irrigation water. Four different *Salmonella* serotypes were used in 3 different seed lots during five separate trials with each test kit. The spent irrigation water samples were inoculated with small numbers of *Salmonella* bacteria and tested for positive detection of the *Salmonella*. The samples from one seed lot below, show that in all cases, the *Salmonella* was detected and confirmed positive in 5 out of 5 trials as well as with the FDA BAM method (access online at: <http://www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalManual/BAM/default.htm>). Further, samples not inoculated were tested negative in all trials, indicating no false positive. The totals for 4 seed lots on the bottom show 66 out of 66 results were accurate (including 6 trials with no inoculi) and no false positives.

Click on link here for simplified chart <http://www.isga-sprouts.org/protect/newsletternov2009-1.pdf>  
[Hit the back button on your browser to return here after viewing the chart.]

This thorough validation method must be used on any rapid test kit before you can have confidence in using it for testing your spent irrigation water.

Click on link here for full study <http://www.isga-sprouts.org/protect/newsletternov2009-2.pdf>  
[Hit the back button on your browser to return here after viewing the study.]

The FDA Guidance recommends testing for two pathogens (*Salmonella* and *E. coli* O157:H7) and recommends the following rapid screening test kits:

- *Salmonella* Assurance Gold EIA \* and VIP \*
- *E. coli* 0157:H7 VIP \* and Reveal

The FDA performed similar validation tests, also using the AOAC certified (example above), for the two screening tests for *E.coli* O157:H7.

Click on link here for validation study results <http://www.isga-sprouts.org/protect/newsletternov2009-3.pdf>

[Hit the back button on your browser to return here after viewing the study.]

Dr. Fu also performed validation tests using a mung bean spent irrigation water matrix..click on link ...<http://www.isga-sprouts.org/protect/newsletternov2009-4.pdf>

[Hit the back button on your browser to return here after viewing the study.]

**That being said; when the above screening methods are performed by qualified lab personnel, and the samples have been collected with adequate sampling practices, there is a high level of confidence of not getting either false negatives or false positives on the screening.**

There are many PCR screening methods available on the market today and many of them have been certified by the AOAC. As yet, none have been validated by FDA or AOAC for detection of pathogens in spent irrigation water. I spoke with Dr. T. J. Fu about using these test kits with our sprouts and her reply is below:

**•If the company that sells the PCR test kits has validated the kit using sprout spent irrigation water, then get their validation results. If they are comprehensive, as in the example above, you can use their tests with a high level of confidence.**

**•If your testing laboratory has validated the PCR test kit using sprout spent irrigation water, then get their validation results. If they are comprehensive, as in the FDA example above, you can use their tests with a high level of confidence.**

**•If you know of another sprout company's laboratory which has validated the PCR test kit using sprout spent irrigation water, get their validation results. If they are comprehensive, as in the FDA example above, you can use that laboratory and their tests with a high level of confidence, or if your laboratory follows the same protocols, and can use the same PCR process, you can use that process with a high degree of confidence.**

The following linked chart, created by Dr. Fu for the ISGA Chicago convention, lists various rapid test methods that have been validated by AOAC for *Salmonella* and *E.coli* O157:H7. Only one of these AOAC validated tests has used a sprout spent irrigation water matrix.

Below TJ's chart, I have added an additional chart with a number of PCR rapid test kits which are AOAC validated. At the bottom I included some that have been AOAC validated for *Listeria* and *L. monocytogenes* with various foods and surfaces. None of these has been validated with a sprout spent irrigation water matrix. If the manufacturer, your lab, or the lab of another sprout grower has done the validation tests for any of these methods, then Dr. Fu feels that you can use them with a high degree of confidence. Be sure to evaluate the results of their validation testing.



Click on link for Dr. Fu's chart and additional AOAC validated rapid methods

<http://www.isga-sprouts.org/protect/newsletternov2009-5.pdf>

[Hit the back button on your browser to return here after viewing the chart.]

Many thanks to Dr. T.J. Fu for her help writing this Dr. Sprout article, and for the use of the charts she created for her PowerPoint presentation at the Chicago, 2009 convention of the ISGA. She also provided us with links to informative and back-up research papers.

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After writing this article, I contacted Dr. Mansour Samadpour to see who is using PCR. (**IEH Laboratories & Consulting Group** 15300 Bothell Way NE, Lake Forest Park, WA 98155, **P** 1.800.491.7745, **P** 206.522.5432, **F** 206.306.8883, [info@iehinc.com](mailto:info@iehinc.com)). His response is: We have validated our method, in-house, for sprout seeds and sprout irrigation water. I agree with Dr. Fu that training and abilities of the labs doing the tests is just as important, if not more, than the test kits. You want to make sure that the labs are ISO 17025 certified. We use the IEH Test System for *E. coli* O157, *Salmonella*, and non-O157 EHEC (STEC with eae).

He went on to answer some of my other questions about PCR vs. the FDA approved rapid methods (*Salmonella*: Assurance Gold EIA \* and VIP and the *E. coli* O157:H7: VIP and Reveal)

1. I hear that PCR can give results in 24 hours vs. 48 hours for the immunoassay based methods for *Salmonella*, why is that? In PCR assays, cells only need to be enriched to 1000-10,000 cells/ml of broth for reliable detection. The immunoassay-based methods need longer enrichment time to reach 100,000-1,000,000 target cells (cfu)/ml.

2. I hear there are fewer false positives with PCR, why is that? PCR-based methods should have much higher sensitivity and specificity, because there is no reliance on antibodies which can give a false positive on the immunoassay-based methods by responding to bacteria that closely resemble the *Salmonella* and *E. coli* O157:H7 that we are looking for.\*

\*This does not match with Dr. Fu's experience, who observed that some PCR assays actually show more false positives because they are more sensitive. Food may have inhibitory or interfering substances that can interfere with PCR reactions and create a false positive. Sprouts are very "dirty" and likely to contain interfering substances. PCR methods don't require selective enrichment. Selective enrichment cuts down on interference.

Click link here <http://www.isga-sprouts.org/protect/newsletternov2009-6.pdf> for a study which shows greater false negative results using PCR than immunoassay-based methods with alfalfa sprout spent irrigation water. [Hit the back button on your browser to return here after viewing the study.]

3. What is non-O157 EHEC (STEC with eae) and why do you test for it? O157 is a member of the EHEC family. Non-O157 members of the EHEC family are able to cause the same illnesses as O157. STEC plus eae is a molecular definition of EHECs.

Dr. Sprout

*Respectfully Submitted by Barbara Sanderson*

Dr. Sprout questions will be researched and answered by different industry members for each issue of the newsletter. If you have a question for Dr. Sprout, or would like to share with the membership something that is working well in your business, please email us at [secretary@isga-sprouts.org](mailto:secretary@isga-sprouts.org).

Thanks for reading!