International Citrus & Beverage Conference

www.conference.ifas.ufl.edu/citrus

September 16-19, 2014
Sheraton Sand Key Resort • Clearwater Beach, Florida

Project # 1402
Welcome to our 54th Annual Program for the Citrus and Beverage Industry!

This year's conference will focus on key issues facing our industry, and will span the topics of global juice and beverage technology to the marketing of new and innovative products. Please join us for discussions on the impact of new regulations, particularly FSMA, on our industry, advances in quality and consumer testing, technology in the processing plants, and interesting new research and consumer insight regarding the beverage category. The Friday morning “Hot Topics” session will focus on research and new perspectives on issues facing our industry, including HLB.

Appreciation goes to everyone who contributed to this year’s event. We would like to recognize our committee members, who facilitated the selection and invitation of our knowledgeable speakers, all of whom are active in academia, industry and government. We would also like to give a special thank you to our invited speakers, who enthusiastically agreed to share their insights and expertise. And last, a very heartfelt thank you to our sponsors, whose generosity enhances the value, affordability and uniqueness of this event each year.

We look forward to the next few days of talks and interaction, with opportunities to meet old friends and business contacts, and the chance to make new ones. Once again, we hope you will find this conference a rewarding and beneficial experience. Especially in this 54th year, we look forward to your participation.

Renée Goodrich Schneider  
Program Organizer  
University of Florida, IFAS, FSHN  
Gainesville, FL
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Conference Committee

Elizabeth Baldwin
Program Chair
USDA-ARS
Winter Haven, FL

Richard Bogey
Florida’s Natural Growers
Lake Wales, FL

Jessica Brower
USDA, AMS, FV, PPB
Winter Haven, FL

Michelle Danyluk
UF, IFAS, CREC
Lake Alfred, FL

Jennifer Davis
Firmenich Inc.
Lakeland, FL

Savy DiBenedetto
The Coca-Cola Company
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Apopka, FL

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Scandia Citrus, LLC
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Jon Leonard
Florida Chemical Company, Inc.
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Keith Schrader
JBT FoodTech
Lakeland, FL

Linda Staten
UDSA-AMS
Winter Haven, FL

Douglas P. Van Strijp
Southern Gardens
Clewiston, FL

Roger D. Waters
Brown International
Winter Haven, FL

Elizabeth Webb
Brown International
Winter Haven, FL

Barry Wilson
Safe Chem Inc.
Zellwood, FL

Alan Wyland
The Coca-Cola Company
Apopka, FL
Agenda

Tuesday, September 16, 2014

4:00PM  Registration (until 7:00PM)

Wednesday, September 17, 2014

7:30AM  Registration (until 5:00PM)
7:30AM  Morning Refreshments  
Sponsor: Vincent Corporation
8:30AM  Welcome and Introductory Remarks  
- Renée Goodrich Schneider, Program Coordinator, FSHN, IFAS, UF  
- Susan Percival, Chair, FSHN, IFAS, UF  
- Nick Place, Dean, Office of Dean for Extension and Florida Cooperative Extension Office, IFAS, UF  
- Elizabeth Baldwin, Program Chair, USDA-ARS

Session 1 – The Global Juice and Beverage Industry

Moderator: Savy DiBenedetto, The Coca-Cola Company

9:00AM  Perspectives on the Citrus Industry in Turkey - Ayše Özler, Özler Ziraat A.Ş. ................. (p. 3)
9:40AM  The Citrus Industry in Mexico with a Lemon/Lime Focus - Arturo Marroquín Ríos, Grupo Altex .............................................................. (p. 4)
10:20AM  Break
10:40AM  The Evolving World of Green Tea - Makiko Sekiguchi, Takasago ..................................... (p. 5)
11:20AM  Pineapple Juice in Costa Rica - Alex Odio, TicoFrut ......................................................... (p. 6)

Session 2 – Marketing and Consumer Trends: US and Beyond

Moderator: Alan Wyland, The Coca-Cola Company

1:30PM  Building on Trends in Citrus for North America - Eric Spenske, Givaudan Flavors Corp. .................................................................................... (p. 7)
2:05PM  Vegetable Juice Marketing Trends and Production - Anne Vlahos & Tayo Bisiolu, Vegetable Juice, Inc. - A Naturex Company
2:40PM  Break
3:00PM  The Marketing of Juice Products Worldwide - J. Ross Colbert, Rabobank International
3:35PM  Marketing and Food Safety of Farmers Markets and Local Food Operations - Ben Chapman, North Carolina State University
4:10PM  Making a Case for the Healthfulness of Juice - Carol Freysinger, Juice Products Association .................................................................................. (p. 8)
Wednesday, September 17, 2014 (continued)

6:00PM  Networking Reception (until 7:00PM)

**Sponsors:**
- Brown International Corporation, LLC.
- Chemical Systems
- Doehler GmbH
- Firmenich
- Florida Chemical Company, Inc
- Givaudan Flavors Corp
- International Flavors & Fragrances Inc
- Sun Rapt Foods, LLC
- Takasago International Corporation

Thursday, September 18, 2014

7:30AM  Registration (until 5:00PM)
7:30AM  Morning Refreshments

**Sponsor:** Givaudan Flavors Corp

**Session 3 – The Juice Industry: Current Messages and Regulatory Environment**

**Moderator:** Keith Schneider, UF, IFAS, FSHN

8:30AM  Keeping OJ Relevant to Today's Consumers - Doug Ackerman, Florida Department of Citrus ................................................................. (p. 9)

9:05AM  A New Juice and Beverage Company: Case Study - Greg Steltenpohl,
         Califia Farms, Inc. .................................................................................. (p. 10)

9:40AM  Emotion and the Food Dialogue: Are We All on the Same Page? - Dave Schmidt,
         IFIC ........................................................................................................ (p. 11)

10:15AM  Break

10:35AM  Food Safety Modernization Act (FSMA): FDA Proposed Animal Feed Rule
         Florida Overview - Susan Caime Mardenborough, Florida Department of Agriculture
         and Consumer Services ................................................................................ (p. 12)

11:10AM  FSMA Proposed Rule on Sanitary Transportation of Human and Animal Food
         C. Stewart Watson, US FDA ........................................................................ (p. 13)

**Session 4 – Juice and Beverage QA, Processing and Sanitation Considerations**

**Moderator:** Richard Bogey, Florida’s Natural Growers

1:30PM  Slurry Ice Solutions for the Juice Industry - Motti Einhorn, icegen .................. (p. 14)

2:05PM  Validation and Verification Basics for a HACCP System - Steve Guidry, SGS ...... (p. 15)

2:40PM  Break

3:00PM  Validation for Juice Processing Technologies - Randy Worobo, Cornell University..... (p. 16)

3:35PM  Biosecurity Assessment for Food Defense - William Covert, ADI Global .............. (p. 17)

4:10PM  Sanitation and the Food Safety/HACCP Program - Debby Newslow, DL Newslow
        and Associates ......................................................................................... (p. 18)
Thursday, September 18, 2014 (continued)

5:30PM  Poolside Reception *(until 7:00PM)*

Sponsors:
- Enerfab, Inc
- JBT Corporation

Friday, September 19, 2014

7:45AM  Breakfast

Sponsors:
- Bell Chem Corp.
- BioSun Flavors & Food Ingredients
- Colores USA
- D L Newslow & Associates, Inc.
- HACCP International
- Safe Chem Inc
- Winniczuk Family

Session 5 – Hot Topics in the Industry: Applied HLB Research

Moderator: Doug Van Strijp, Southern Gardens Citrus

8:30AM  Main Change Trends of Citrus Industry and HLB (Greening) Control in China – Zhifeng Gao, UF, IFAS, FRED

9:15AM  Fruit Drop: Issues and Causes - Greg McCollum, USDA-ARS

10.00AM  Thermal Treatment of Grove for the Control of HLB - Reza Ehsani, UF, IFAS, CREC ... (p. 19)

10:45AM  Antibiotics as HLB Treatment: Efficacy and Implications - Robert Shatters, USDA-ARS

11:30AM  Adjourn
The International Citrus & Beverage Conference
Speaker Abstracts

Listed in order of presentation

We sincerely thank all speakers for agreeing to share their expertise and work. Many of our speakers have graciously prepared abstracts and we hope these will be useful to you as a possible source of industry practices. While informative, opinions and recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the Institute of Food and Agricultural Sciences, University of Florida.
Perspectives on the Citrus Industry in Turkey

Ayşe Özler
Özler Ziraat A.Ş., Adana, Turkey

The land that modern Turkey stands on has played a central role in the world’s agriculture and trade history since 6000 B.C. The Anatolian peninsula with its incredibly diverse flora and fauna is the homeland of numerous different plants that have been cultivated for food since the advent of agriculture. And Turkey’s location at the crossroads of Europe and Asia has enabled it to host many important historic trade routes, which in turn has had major affects on the development of many civilizations and world trade.

Today, Turkey is a major citrus producer and trader in the world with its 3.3million tons of total citrus production and 1.5million tons of yearly citrus export valued at 931million USD. Even though it is one of the major citrus suppliers in the world, access to reliable sources of information is difficult and often limited. Therefore, many international citrus producers and traders face a real challenge in understanding the dynamics of Turkey as an origin, as well as assessing and working with its actual capacity and potential.

In this presentation, I will attempt to provide an overview of the current trends in Turkey’s citrus production and its global markets and discuss the strengths, challenges and potential of Turkey as a citrus origin from both a production and a marketing perspective. I will also address and highlight some key points to try to elaborate on Turkish citrus’s current position in the national and international juice industry.

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In recent years, due to the problems that have faced Florida and Brazil about citrus diseases, Mexico has taken a greater importance as an exporter of concentrated orange juice to the United States. While economic conditions have been stable, allowing investment security, growth in the citrus industry is limited by several factors that must be resolved thoroughly: a) low productivity in the field due to lack of organization among producers, most of them small farmers b) lack of public policies that promote the development of the citrus industry c) most of the trees are in adulthood, so the rate of new planting needs to increase to avoid a fall in production in the following years d) the presence of HLB, although not as aggressive as in other countries, it is a fact that must be taken into account.

The installed capacity of the citrus industry has increased significantly in recent years, but not producing fruit, so each year the competition for the fruit is higher, eventually will have a consolidation among processing plants.

In the case of lime / lemon, Mexico has become a major exporter in the industry, ranking second worldwide after Argentina. While some areas like in the state of Colima have been affected by the presence of HLB, new production areas have been developed in other states allowing the total harvest is not diminished. In the case of the Persian lime, prices obtained on sale in the fresh market allow the farmer to obtain high income doing this crop very profitable. This year they came to reach exorbitant prices.

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The Evolving World of Green Tea

*Makiko Sekiguchi*

Takasago, Tokyo, Japan

Green tea in Japan, often simply known as tea (*cha*), is firmly embedded into Japanese culture, from the casual offering of tea for a seated visitor, to the more solemn but gracious tea ceremony consisting of a host or hostess serving the guest(s) one bowl of freshly prepared *matcha* made by whisking finely ground green tea leaves with hot water. Serving tea is the most common but ultimate means of Japanese hospitality...the most effective way of saying, “Welcome.”

Green tea is produced by processing the leaves of the plant *Camellia sinensis*, just like other teas such as black tea and oolong tea, however without undergoing fermentation. This retains its green to green-yellow color, delicate flavor, and antioxidants. Green tea is mostly produced in China and Japan, and its difference depends on the way the leaves are processed to prevent fermentation. This presentation will address Japanese green tea.

Although freshly-brewed, hot green tea has been appreciated in Japan for centuries, the Japanese have not been reluctant in incorporating RTD teas into their daily lives. These unsweetened refreshing drinks are often consumed in place of bottled water, to accompany meals or just as a thirst quencher. Our analytical data of some types of tea can help develop various flavor profiles of RTD green tea, from the authentic, unsweetened fine-grade *Gyokuro* type to the milder *sencha* type which goes well with fruit flavors such as citrus, delighting the palate of a wide range of consumers not only in Japan but potentially world-wide as well.

Recently, green tea is known even in countries where it is not traditionally consumed, not only because of its acknowledgement as a healthy drink, but also because of its presence as an accompaniment to Japanese food which in itself is increasingly being known, and furthermore as a *matcha* flavor seen in confectioneries, desserts, and beverages. Many green tea drinks outside Japan are a completely new experience for the Japanese, which would possibly give inspiration to create even more innovative products, leading to the diverse world of modern green tea.

**Contact Information**

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Pineapple Juice in Costa Rica

Alex Odio
TicoFrut/Tampa Juice, Tampa, FL

Prior to the 1990s the primary consumption of pineapple in the world was out of a can and Smooth Cayenne was the principal variety. Research in the 1960s and 1970s showed that the MD-2 variety (a hybrid variety) had potential to be sold as fresh fruit because of its exceptional sweetness. In the mid 1980s the first MD-2 plants were shipped to Costa Rica. In the mid 1990s Del Monte planted the first MD-2 farm in Costa Rica and began test-marketing the variety, naming it Golden pineapple. The Golden pineapple was originally introduced in Europe and then in the United States, growing to $200 million dollars in sales by 1996. Today Costa Rica has over 100,000 acres planted with Golden pineapples and is the world's leading exporter of fresh pineapple with over $800,000 in sales.

Growth in fresh pineapple production in Costa Rica has also led to the development of a pineapple juice industry based on packinghouse eliminations. Costa Rica’s focus on fresh fruit has created a unique opportunity for juice processors. In Asia and other parts of the world, pineapple juice is produced largely from peel and core scraps left over from the canning process. Costa Rican processors produce juice from whole fruit. The high quality raw material is suitable for the production of a high quality NFC pineapple juice. Costa Rican NFC pineapple juice is considered the best in the world and demand continues to grow at a rapid pace. Strong demand for the juice and a perceived abundant supply of raw material has resulted in many processors getting into the pineapple juice industry, and has created a very competitive environment among the processors.

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Building on Trends in Citrus for North America

Eric Spenske
Givaudan Flavors Corp., Cincinnati, OH

Citrus flavors continue to be the preferred flavor family in beverages. Refreshing and flavorful, citrus has broad appeal and can be applied in everything from sports drinks to flavored alcoholic beverages. For so many years, marketers and developers have maintained a basic approach to citrus flavors: orange was “orange,” lemon was paired with lime, and grapefruit was limited to 100% juice applications.

Today, innovation with citrus flavors is as dynamic as ever. Driven by changing demographics and a progressive beverage market landscape, each flavor family – orange, lemon, lime, grapefruit, and “citrus” – has certainly evolved. Building on last year’s approach, we take a deep dive look into each flavor individually, exploring the current market trends and exposing the mechanisms driving the changes. We will also connect these market dynamics with industry leading consumer insight data to highlight new opportunities going forward.

Finally, we will explore emerging category dynamics that will influence beverage innovation in the years to come; ensuring those who listen intently, react quickly, and innovate relentlessly will have a very prosperous future!

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Making a Case for the Healthfulness of Juice

Carol Freysinger
Juice Products Association, Washington, DC

Sensationalized media reports can hit any industry. Lately it seems that the juice industry has been attacked from several angles. To defend and protest the healthfulness of juice in the eye of the public, the Juice Products Association (JPA) has employed a three-pronged communications approach which includes scientific research, key-opinion leader outreach and direct consumer communications. The JPA’s Executive Director, Carol Freysinger, will discuss what the industry sees as opportunities to educate consumers about the healthfulness of juice and how it has and will engage such tactics.

Contact Information
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Keeping OJ Relevant for Today’s Consumer

Doug Ackerman
Florida Department of Citrus, Bartow, FL

Orange juice has enjoyed decades of unrivaled popularity and, despite shrinking supply and increased competition, remains one of the world’s most popular fruit juices (#1 in the USA).

Maintaining that relevance in the dynamic environment created by threats to production, increased costs to consumers, changing distribution channels and evolving consumer preferences is a challenge that OJ brands and the Florida Department of Citrus accept collaboratively.

As the brands execute independent marketing programs, the FDOC engages in assertive branding and public relations programs, as well as retail and food service marketing campaigns designed to support consumer engagement with the OJ brands.

In addition to investing in the “100% Florida OJ” brand and acting deliberately to enhance its equity, the FDOC is engaged in strategic media relations – both proactive and reactive – and in a variety of consumer engagement programs. Some of these programs target consumers in-market, while others are intended to develop brand loyalists earlier in the pipeline. The FDOC has enjoyed a productive relationship with sports and pop media personality Erin Andrews and engaged her star power in a variety of ways to deliver the brand message, while the FDOC’s “pipeline” program is anchored by a dynamic character, developed in collaboration with Marvel. Captain Citrus delivers the brand message to school children and their families while also complementing the work of brands throughout the category.

The FDOC’s retail and food service marketing initiatives are executed in partnerships with other brands in ways that are specifically designed to enhance OJ’s relevance to consumers, spotlighting the category’s health benefits and lifestyle utility.

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Califia Farms: A Case Study

Greg Steltenpohl
Califia Farms LP, Bakersfield, CA

Modern Citrus production has been driven by large scale players and manufacturing facilities. In 2011, Odwalla founder Greg Steltenpohl partnered with pioneering citrus grower Sun Pacific to found Califia Farms, a new vertically integrated processing, bottling, sales and marketing organization with 2 major brand platforms.

This program will highlight some of the challenges and rewards of entrepreneurial approaches to an industry dominated by large players.

Areas covered will be capital formation, speed to market, manufacturing strategy, distribution challenges and unique approaches to R&D and product development.

Integral to the presentation is understanding the importance of the new millennial consumer and their vastly different shopping profile.

This consumer is creating new demands on brand development and a new ‘long tail’ marketplace that is changing manufacturing environments as well.

Greg will discuss trends in specialty beverages, the role of lower calorie formulations, the importance of social media and how Califia is using ‘Localism’ as a unique selling and positioning advantage.

Key take-away from this session is insight into the modern entrepreneurial mindset as well as how to use strong branding principals to gain unique competitive advantage.

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Emotion and the Food Dialogue: Are We All on the Same Page?

David B. Schmidt
International Food Information Council (IFIC) & Foundation, Washington, DC

It seems that food issues and conversations about them have become personal for many and emotional for even more. We are bombarded with opinions about how food is produced via social and traditional media, TV celebrities, activists and advertising. What does consumer research tell us about the dynamics behind these perceptions? Who are US consumers most likely to trust for information about our food supply? And closer to the citrus industry, how would consumers feel if they could no longer have Florida orange juice, because the orange groves were devastated by a virus?

Consumer research commissioned by the International Food Information Council and IFIC Foundation in 2014 provides answers to these questions and other insights into the dynamics driving consumer preferences in today’s food environment. Schmidt will draw from the IFIC Foundation’s annual Food and Health survey and IFIC’s bi-annual Food Technology survey, both summarizing the views of 1,000 US consumers in a sample that reflects the US Census in terms of gender, age, race, region and other demographics.

Schmidt will also introduce the new IFIC Foundation FACTS (Food Advocates Communicating Through Science) Network and encourage you to sign-up at www.foodinsight.org/FACTS, so you can help keep your friends, family and colleagues better informed about today’s food issues.

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Food Safety Modernization Act (FSMA): FDA Proposed Animal Feed Rule
Florida Overview

Susan Caime Mardenborough
Florida Department of Agriculture and Consumer Services, Tallahassee, FL

In January, 2011, President Obama signed into law the Food Safety Modernization Act (FSMA). This legislation is inarguably the most impactful reform of the food safety system here in the United States in over 70 years. According to recent data from the Centers for Disease Control and Prevention, FDA has stated the impetus for this change stems from the approximate 48 million people (1 in 6 Americans), that fall ill from foodborne disease each year. The historic practice of protecting public health by reacting to foodborne outbreaks after they occur, to a system now of preventing outbreaks prior to occurrence, is the substantial driver of this mandate.

Consumers have the right to a safe, nutritious and abundant food supply. FSMA attempts to modernize the patchwork of food safety standards and processes for both domestic and foreign supply to the U.S., by applying risk-based and science-based principles. FDA has established seven primary rules to govern significant redirection in the food supply chain, from field to fork. Each one of these proposed rules has been comprehensively outlined by FDA and published in the Federal Register.

In this presentation we’re going to navigate through one of the seven principal rules, Current Good Manufacturing Practice and Hazard Analysis and Risk-Based Preventive Controls for Animal Food, most commonly referred to as the Animal Feed rule. We’ll examine why the rule has been proposed, who must comply with the rule, and highlight key components of the rule. Additionally, we’ll uncover why some commodity groups are concerned with certain requirements of the rule. Finally, we’ll survey the active measures the Florida Department of Agriculture and Consumer Services, on behalf of the Florida Commissioner of Agriculture, and statewide Florida agricultural stakeholders, have taken to ensure FDA fully understands the impact of the proposed Animal Feed rule and potential unintended consequences.

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FSMA Proposed Rule on Sanitary Transportation of Human and Animal Food

**CDR Stewart Watson, REHS**
Food and Drug Administration, Maitland, FL

About 48 million people (1 in 6 Americans) get sick, 128,000 are hospitalized, and 3,000 die each year from foodborne diseases, according to recent data from the Centers for Disease Control and Prevention. This is a significant public health burden that is largely preventable. The FDA Food Safety Modernization Act (FSMA) was signed into law by President Obama on January 4, 2011. It aims to ensure the U.S. food supply is safe by shifting the focus of federal regulators from responding to contamination to preventing it. The proposed rule on Sanitary Transportation of Human and Animal Food is one of several proposed rules that will establish the foundation of, and central framework for, the modern food safety system envisioned by Congress in the FDA Food Safety Modernization Act. This proposed rule establishes requirements for shippers, carriers by motor vehicle and rail vehicle, and receivers engaged in the transportation of food, including food for animals, to use sanitary transportation practices to ensure the safety of food.

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Tel: 407.475.4756/407.618.6473; Email: stewart.watson@fda.hhs.gov
Slurry Ice Solution: The Food Industry Revolution

Motti Einhorn
CEO, IceGen, Inc., Markham, Ontario

Ice slurry is a mixture of small ice crystals intermixed with a liquid solution of a soluble material such as sugar or salt to lower the freeze point of the mixture. This allows for a portion of the liquid to freeze, storing energy in the frozen droplets. The material, which is pumpable then can be used as a cooling medium, such as for chilling fish as used in its early applications or as a circulated refrigerant. If a pumpable food product is chilled in the same manner, the material can be deep chilled and slushed, or partially frozen very quickly and efficiently.

For the juice and beverage industry, this provides many unique opportunities for improved products, longer distribution chains and energy savings. IceGen Inc., located in Toronto, Canada, provides a full capacity range of ice slurry systems to produce slurry ice at rates applicable to a wide range of industries. Motti Einhorn, President of IceGen Inc. will discuss with ICBC attendees several different applications to be considered for the juice and beverage industry. You will come away realizing that this technology can be a significant game changer for the industry.

Success with the Sochi Olympics – “Sochi snow-making topped up by Canadian technology”!

In addition to the applications to be discussed, the system is also used for producing snow in above freezing environments. Learn how IceGen participated in bringing you a white 2014 Winter Olympics. Below are some links where you are able to view the success IceGen Inc. experienced with the Sochi Olympics.

http://www.ctvnews.ca/sochi/meet-the-canadian-company-that-s-bringing-snow-to-sochi-1.1692084
http://video.theloop.ca/watch/keeping-sochi-winter-white/3219989046001?sort=date&page=1#.UwOJ6V7Fb_N
http://iiski.org/sochi-snow-making-topped-up-by-canadian-tech/

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Validation and Verification Basics for a HACCP System

Stephen Guidry
SGS Technical Auditor, Brookings, SD

HACCP has become a way of life not only in the USA but worldwide as well. Why? The answer is simple. Regardless of the industry involved or programs required by law, a properly implemented HACCP based safety program reduces your risk of producing an unsafe product. This applies equally to products intended for both human and animal consumption.

Many employees whose daily functions are governed by HACCP principals may not fully understand the requirements of each of the steps of HACCP. Their understanding is often limited to basic HACCP training and adherence to preset SOPs. For many, their version of HACCP is Hard Agonizing Confusing Complicated Paperwork. In short, they know they have to perform a function in a particular manner, record certain details, but often do not understand why. For those in charge of designing, implementing, and maintaining a HACCP, a much broader knowledge of the basic principals is required.

Throughout my years of auditing, I have often found confusion at many levels within plants regarding the requirements of two key elements of HACCP: Verification and Validation. Each step plays a very important but different role within a HACCP plan. A complete understanding of the differences is especially important for those in charge of design and maintenance of the plan.

This presentation will not address HACCP as a whole but will focus on an entry level understanding of Verification and Validation requirements for a typical HACCP plan. It is intended to help the attendee understand the very important differences between the two elements and what is required to fulfill these elements within your plan.

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Nichole Berkenhoff, SGS Audit Manager; Email: Nichole_Berkenhoff@sgs.com
Validation for Juice Processing Technologies

Randy Worobo  
Cornell University, Geneva, NY

As part of the Juice HACCP regulation, the 5 log reduction performance standard must be met to ensure the safety of juices. The juice industry has seen rapid growth in unique juice blends, and the popularity of non-thermal processing methods being used for the “raw” juice market sector. Due to the uniqueness of the juice blends, and the lack of published information on processing parameters with high pressure processing methods, validation studies for each type of juice blend are usually required to satisfy FDA requirements. In order for the validation studies to be recognized by FDA, the validation studies need to include important variables pertaining to juice physiochemical properties, pertinent pathogens or acceptable surrogates, and juice handling conditions. Currently, the FDA is encouraging the creation of a “safe harbor” of pathogen inactivation studies for high pressure processed juices, to allow for standardized processing parameters that take into account the variability of the juice properties, as well as the process variables. This talk will provide an overview of validation study parameters and discussing the requirements for demonstrating the process effectiveness to fulfill the FDA Juice HACCP 5 log reduction performance standard.

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Bio Security Assessment for Food Defense

William Covert
Honeywell / ADI Global, Elk Grove Village, IL

About 48 million people (1 in 6 Americans) get sick, 128,000 are hospitalized, and 3,000 die each year from food born diseases, according to recent data from the Centers for Disease Control and Prevention. This is a significant public health burden that is largely preventable.

The FDA Food Safety Modernization Act (FSMA), signed into law by President Obama on Jan. 4, enables FDA to better protect public health by strengthening the food safety system. It enables FDA to focus more on preventing food safety problems rather than relying primarily on reacting to problems after they occur. The law also provides FDA with new enforcement authorities designed to achieve higher rates of compliance with prevention- and risk-based food safety standards and to better respond to and contain problems when they do occur. The law also gives FDA important new tools to hold imported foods to the same standards as domestic foods and directs FDA to build an integrated national food safety system in partnership with state and local authorities.

Building a new food safety system based on prevention will take time, and FDA is creating a process for getting this work done. Congress has established specific implementation dates in the legislation. Some authorities will go into effect quickly, such as FDA’s new authority to order companies to recall food, and others require FDA to prepare and issue regulations and guidance documents. The funding the Agency gets each year, which affects staffing and vital operations, will also affect how quickly FDA can put this legislation into effect. FDA is committed to implementing the requirements through an open process with opportunity for input from all stakeholders.

Prevention – Bio Security Assessments’:

For the first time, FDA will have a legislative mandate to require comprehensive, science-based preventive controls which require Bio Security Assessments to ensure safety across the food supply.

- Mandatory preventive controls for food facilities
  Food facilities are required to implement a written preventive controls plan. This involves: evaluating the hazards that could affect food safety, specifying what preventive steps, or controls, will be put in place to significantly minimize or prevent the hazards, specifying how the facility will monitor these controls to ensure they are working, maintaining routine records of the monitoring, and specifying what actions the facility will take to correct problems that arise.

- Mandatory produce safety standards
  FDA must establish science-based, minimum standards for the safe production and harvesting of fruits and vegetables. Those standards must consider naturally occurring hazards, as well as those that may be introduced either unintentionally or intentionally, and must address soil amendments (materials added to the soil such as compost), hygiene, packaging, temperature controls, animals in the growing area and water.

- Authority to prevent intentional contamination
  FDA must issue regulations to protect against the intentional adulteration of food, including the establishment of science-based mitigation strategies to prepare and protect the food supply chain at specific vulnerable points.

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Sanitation and the Food Safety/HACCP Program

Degby Newslow
President, D.L. Newslow and Associates, Inc., Orlando, FL

An effective sanitation program eliminates or reduces many hazards while having a direct influence on identifying critical control points. Sanitation is a significant prerequisite program to an effective food safety/HACCP Program. Over the years we have become more and more dependent on automation. Although automation has come a long way in providing consistent programs that can be controlled and provide records demonstrating system performance, it is important that we don’t forget the basic principles of cleaning and sanitation (time, temperature, velocity, and concentration).

Also, in today’s world of structured food safety management programs such as the GFSI approved schemes, we are asking for a more structured approach and verification that our food contact services are hazard free. This mandates more attention to sanitary design of both processing equipment and sanitation equipment. Our programs are also requiring more detail and experimental data on the chemicals that we use for sanitation.

This presentation will provide an overview on the science of cleaning and sanitation and its application to specific food sectors and its role as a prerequisite program to the food safety/HACCP programs. It will also provide key points related to sanitary design of equipment and non food items focusing on credible sources such as various websites, 3A Sanitary Design, HACCP International and NSF equipment approval programs that aid the food/safety HACCP Team in their investigation and justification related to existing and potential hazards. Having credible sources is critical to an effective program including common noncompliances identified during internal and external audits.

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Thermal Treatment of Grove for the Control of HLB

Reza Ehsani  
University of Florida, CREC, Lake Alfred, FL

The spread of Huanglongbing (HLB) disease, also known as citrus greening, threatens the longevity of citrus production in Florida. Citrus production in Florida has dropped from 240 million boxes ten years ago to 115 million boxes this year. HLB is the major factor causing this yield reduction. Heat treatment could be a short term solution to prolong the production life of HLB infected citrus trees. Thermal treatment of trees or “thermotherapy” has been used for decades in many crops to kill microorganisms and insects. Several published works have shown that thermotherapy under a controlled greenhouse environment can reduce HLB bacteria in seedlings and promote healthy growth. Researchers and growers have taken this concept to the field on a small scale. By covering single trees with translucent plastic, tree canopies can be exposed to elevated temperatures. However, the results have been mixed, mainly because the lack of control over the amount and duration of heat treatment using only solarization. This presentation summarizes an on-going research project on the application of short time heat treatment using steam as a supplemental source of heat. Heat in the range of 50°C (122 °F) to 60°C (140 °F) and duration of 30 seconds to five minutes have been tested. The results of heat treatment will be discussed in this presentation.

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