

## President's Corner: Welcome to STA Today!



*Darrell Maddox, President*

Welcome to the first edition of STA Today. This is one of several media we are redesigning to provide our clients with quality information about our established and *new* services, our technologies, our corporate objectives, our industry and any other pertinent information that may help you make informed decisions.

In order to serve our loyal customers better, STA has undergone significant changes and we are confident that

these changes will also help your business succeed. We have re-organized the company into three business units. *Seed Quality Services* continues to be our primary business with services for seed analysis, seed health and hybrid purity. These services are offered at both the Colorado and California facilities. Complementing our Seed Quality Services is our Colorado-based *Genomic Services*. Genomics offers cutting-edge services in molecular markers and mapping technology that enhance plant breeding and seed quality. Our *Plant Health Services* in California, offers Grapevine Health-Check™ disease diagnostics, resistance screening and other plant health diagnostics. Each business unit is focused on addressing specific customer

needs through research and superior customer service. Together, the business units form the foundation of STA's full-service, diagnostic testing program.

This newsletter will give our clients better access to the years of expertise provided by our seed professionals. STA Today will include information on workshops, meetings, conferences and other events that provide opportunities to meet face to face. We hope that you find the contents of STA Today informative and we look forward to your comments. Please do not hesitate to call us if you have suggestions for our newsletter.

*Darrell Maddox, President*

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## HealthCheck™ for Grapevines

*By Judit Monis, Ph.D.  
Manager, Plant Health Services*

**HealthCheck™ Panel A** is the most popular testing panel for the detection of grapevine viruses this season. Health-Check™ Panel A can detect viruses that cause leafroll: Grapevine leafroll associated virus (GLRaV) 1-7 and -9- including the Red Globe strain of GLRaV-2), rugose wood complex: Grapevine

virus A (GVA), Grapevine virus B (GVB), Grapevine virus D (GVD), and Grapevine Rupestris stem pitting associated virus (GRSPaV), and fleck: Grapevine fleck virus (GFkV).

Two main methodologies, ELISA (Enzyme-linked-immuno assay) and PCR (polymerase chain reaction), are used routinely in the lab for grapevine virus detection.

We use both methodologies in all sample tests to assure the accuracy of results. Using the correct sample methodology for testing is equally important because the concentration of virus varies throughout the vine. Please call the lab for more sampling information and sample submission instructions.



*Close up view of grapevine leafroll symptoms in the fall season*

## Coming Soon: Anita Castro-Sparks

STA Laboratories and its Seed Health Services Department, is pleased to announce the hiring of Anita Castro-Sparks to lead the Bacterial Fruit Blotch program at our California facility (starting in January, 2007). Anita is currently finishing her M.S. degree in Plant Pathology with Dr. Ron Walcott at the University of Georgia, with whom she has been working as a Research Technician since 2000. Anita has gained extensive experience with BFB, including the development and optimization of immuno-magnetic separation PCR detection, DNA finger-

printing using pulse field gel electrophoresis, RAPD, a maintaining greenhouse conditions for the development of BFB symptoms. Anita is also familiar with fungal diagnostics involving *Didymella bryoniae* and *Cylindrocladium parasiticum*. Anita brings valuable expertise to STA as we look forward to improving and expanding the current BFB and PCR testing program to be offered at both STA locations.



STA Scientists use cutting-edge technologies to deliver reliable test results.

## Changes in Seed Analysis Services

By Linda Barbosa, RST. Manager, Seed Analysis Services

The Seed Analysis Department of STA Labs has undergone some changes in the last few months. The primary change that may affect some seed analysis customers is the shifting of germination and physical purity testing of vegetable and bedding flowers to the California lab. Furthermore, customer service

## New Staff Introduction: Misty Kuryliw

STA Plant Health Services is pleased to announce the hiring of Misty Kuryliw. Misty has followed the sunshine from coast to coast, recently moving from Florida to California. Misty received an M.S. at the University of Florida in Plant Pathology while working with the Florida Department of Agriculture and Consumer Services. Her work focused on the development of plans for the diagnostics of select agents and innovative testing methods for high volume citrus canker testing. Misty has held positions at the United States Department of

Agriculture, California Department of Agriculture and the University of Florida at Gainesville. Overall, she has eight years experience with work in plant diagnostic labs as well as extensive experience with field diagnostics. She is excited to bring her broad knowledge and expertise in fungal, bacterial, and viral pathogens, as well as insect pests affecting many agronomic and horticultural crops to STA's Plant Health Services. Misty's responsibilities include supporting the disease resistance screening and disease diagnostics programs in grapevine, ornamental and vegetable crops.

and management will also be handled from our California location. We are confident that these changes will help our personnel to utilize our resources more efficiently allowing us to provide our clients with the best-possible service. Barbara Atkins, who you have come to trust over the years is still at our Colorado laboratory. You can be assured that dependable testing will continue at both our

Colorado and California locations. If you are unsure where to send your samples or have customer service issues, please contact Linda Barbosa at 408-846-9964 or by e-mail at [linda.barbosa@stalabs.com](mailto:linda.barbosa@stalabs.com). We, the Seed Analysis department, look forward to serving you in the coming year.

## Protein Electrophoresis: Clarification of Terms

By Dan LaFlamme, Ph.D., Hybrid Purity Manager

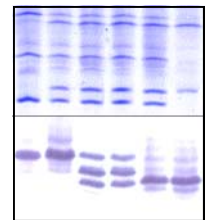
Protein electrophoresis has become commonplace in the seed testing laboratory. When used to determine hybrid purity it is quick, reliable and cost-effective. There are a number of variations to the technique which can often make it difficult to understand. This article is intended to explain key aspects of electrophoresis testing.

All forms of protein electrophoresis testing involve two

steps. In the first step, proteins from seed or plant tissue are extracted into a solution and separated from each other using an electric field. In **starch gel electrophoresis**, the proteins pass through a gel matrix made of potato starch. Highly charged molecules move more-quickly than weakly charged proteins. With **isoelectric focusing** (IEF) the proteins are separated in a thin gel matrix made of agarose or acrylamide. The pH of the gel varies throughout the gel causing the charge on the proteins to

change as well. Eventually, proteins move to a point where there is no net charge and they migrate no further. Each of these techniques separates protein molecules but a second step is necessary to visualize the proteins. There are two common visualization methods. **Total protein stains** simply colorize the proteins using dyes or a metallic silver stain. The proteins appear as colored lines or "bands" in the gel. **isozyme staining**, the second method, relies on the fact that certain proteins

(enzymes) are able to participate in specific chemical reactions. By providing the enzyme with color-producing chemicals, the enzyme is able to reveal its location in the gel by producing a color change.



Top: Total Protein Stain. Bottom: ADH Isozyme

Call to find out how STA's electrophoresis services can be part of your team.

## STA Integrates Molecular Marker Technology Services

STA Laboratories is pleased to officially introduce you to our molecular marker services, offered in the Genomics business unit. Keeping with our overall mission to provide a full-range of services, over the past two years we have been building our molecular marker services and expanding our capabilities. These services are designed to help plant breeders in the selection process and map important traits and enhance seed quality assurance systems. Markers are available for most crops including corn, soybean, tomato, pepper, brassicas, watermelon, onion and bean. New mark-

ers are being added to our library on a regular basis and as always, STA can structure a program to assure the markers you need are developed rapidly for a nominal cost. Articles will be presented in future issues of this newsletter discussing molecular marker services and applications in greater detail.

STA Genomics is managed by Russell D. Rasmussen,



*Russell D. Rasmussen, Ph.D.*

Ph.D., who earned his doctorate in plant breeding at the University of Minnesota and prior to joining STA was responsible for developing and managing a DNA testing lab. Russell's upbringing on a farm and love of agriculture combined with his education in plant breeding helps him understand your unique program and gain the most value from molecular markers.

## YOU CAN FIND STA STAFF AT THE

### FOLLOWING MEETINGS:

- APSA meetings in Kuala Lumpur, Malaysia Nov 12-15 (J. Mizicko).
- ISHI meeting in Kyoto, Japan Nov 28-Dec 2 (K. Webb & L. Carpenter).
- ASTA Corn-Sorghum Meeting in Chicago, IL Dec 6-8 (R. Rasmussen & J. Mizicko).
- ASTA Flower & Veg. Meeting in Tucson, AZ. Feb. 3-6 (J. Mizicko & D. Maddox).
- 2006 Pierce's Disease Research Symposium in San Diego, CA. November 27-29, 2006 (J. Monis)

## At Your Service; STA's Seed Health Staff

*By Kimberly Webb, Ph.D.  
Manager, Seed Health Services.*

Over the past year the Seed Health Services Department has had many exciting changes. In order to improve our commitment to our customers in providing quality, accurate and reliable seed health testing, we have decided to establish distinct testing programs at each facility. The primary goal of this re-organization was to ensure quality assurance for our testing protocols and implement clear oversight of the tests being performed. Because of these exciting changes we have many new faces in leadership positions and would like to take this opportunity to introduce them at this time.

**Louise Carpenter**, CA Bacteria/Mycology Program: Louise attended the University of California at Davis, and received a Bachelor of Science in Soil & Water Science. She has worked in the seed industry for 25 years (and 8 years at STA) performing various seed health related testing.

**Anna Eglund**, CA Virology Program: Anna attended the University of California at Santa Cruz earning a Bachelor of Arts degree in Biology. Anna has worked in the seed industry for over nine years and has been with STA Laboratories for nearly six years.

**Victoria Hallowell**, CO Mycology Program: Vikki

has 25 years in the Food Production industry focused on Quality Assurance and Control. She has been with STA Laboratories for 3 years. For the past two years, Vikki has specialized in the Mycology Program although she also has experience in Bacteriology.

**Jackie Jessup**, CO Bacteria Program: Jackie has a M.S. degree in Plant Physiology and 20 years laboratory experience including plant physiology, plant culture and biotechnology. She has been with STA Laboratories for 3 years.

**Cindy Engle**, CO Virology Program: Cindy has been with STA Laboratories for 3 years working in various testing programs including the

Mycology and Bacterial Fruit Blotch Programs. Because of her experience she has recently taken on leadership of the Colorado Virology program.

**Christopher Overman**, CO BFB/PCR Program: Chris graduated from the University of California Santa Barbara with a BS in Cell and Developmental Biology. Chris joined STA Laboratories in 2003 working for and eventually leading the BFB program in California. In the summer of 2006 Chris transferred from California to the Colorado facility of STA Laboratories to fill the position of BFB/PCR program supervisor.



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