

Eurofins STA Today

February 2009



Variability in Germination Tests

By Linda Barbosa

There are occasions when a customer may note variability between germination tests. These may be between tests from the same lab or different labs. There may be differences between a label, especially if several months old, and a current lab test. There are several possible causes for this variability. First, let us look at the background of seed testing. Most tests in the United States are preformed following the AOSA rules. These rules were developed from years of experience in seed testing and research. Until recently these were established by government and university labs. The goal of the AOSA rules is to standardize seed tests to ensure uniformity among testing laboratories providing accurate information to the owners of the seed.

Sampling: Independent labs count on the customer to provide a sample that has been drawn correctly from the bulk. A composite sample must be drawn from several locations within the container or containers, and then divided down to a representative sample. No lot is perfectly uniform and variability can be found between samples, especially if the samples are not well-mixed composites of the lot. This is often the most frequent cause of differences in germination between samples. Clients should refer to the AOSA rules for correct sampling procedures for all seed quality tests.

Live Products: Seeds are live products that are dynamic and change with conditions and this may also account for differences between laboratory germination tests. AOSA rules have tolerance tables that take these facts into account and provide directions for determining an allowable deviation between tests.

Thus, tests on the same sample that vary a few to several points may actually be within allowable deviation.

Age of the Seed Lot: Producers and dealers will track the history of lots to note unexpected differences and/or gradual declines. It is not unusual to see a low germ if a company is checking the quality of an older lot. However, an outside testing lab does not have access to this history information and therefore is dependant on the company to inform them if a recent germination is a dramatic change from the history of the lot. With this information, repeat tests can be done to verify the current condition of the lot.

Sample Conditions: The conditions under which a sample is stored or shipped can also greatly influence the germination. Two samples that are properly obtained from a lot at the same time can give radically different germinations if they are stored or shipped under greatly varying conditions.

Test Conditions: Variability of test conditions can also affect the germination result. Although germination labs follow AOSA rules in setting up test conditions, slight deviations in the test conditions can cause additional stress on seeds, which can affect the germination result. It is possible that the test can be planted too wet, too dry, or put into the wrong temperature. Labs are expected to monitor their germinator temperatures, planting conditions and employee methods in an effort to reduce these variables and maintain consistent quality between tests.

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President's Corner



Darrell Maddox, President

Beyond Your Testing Results

The professional staff of Eurofins STA Laboratories (ESTA) often speak of our "visible expertise" goal—a value that we believe sets us apart from our competition. All service laboratories are driven to provide reliable and accurate test results in a timely manner and this is always a primary goal of ESTA. But we believe that our value is what we offer beyond your testing results! Each division of ESTA is run by a recognized expert who is here to help you make genetic, seed quality or plant health decisions. Our managers use their experience and your testing data to look for ways to improve your product and your programs. Whether it be designing strategic genetic applications, providing the latest in research data and control information on seed borne diseases, diagnosing your customer's field diseases, reviewing seed quality programs; or on-site training of vineyard managers, they are always looking for ways to help you succeed. Sometimes, you may simply need a neutral third party to edit internal or customer documents or just to bounce some ideas off of. ESTA can fill that role, too! Whatever your need, our ESTA experts are

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Variability Continued

Selection of test protocol: The AOSA rules offer protocol options for the same crop. The lab selects the protocol they feel will provide the best option for maximum germination. The rules may allow a test to be performed in a rolled paper towel or if dormancy is suspected on top of a blotter with light provided. Some protocols offer the option of prechilling and applying KNO₃ to the planting media to overcome suspected dormancy. A company may decide to test all of their lots using the same method so that a comparison can be made across all lots. There also may be a choice of equally valid temperatures that can be used in the test. Some labs may disinfect untreated seed with a fungicide while others may not.

Eurofins STA Labs strives to provide our clients with consistent and reliable results through continual training of our employees and active participation in comparative testing with other labs. There will always be variability in results between labs but our goal is to assure our clients that we constantly strive to ensure that our test conditions and test evaluators are consistent test to test, and day to day.

At Eurofins STA Labs we will replant all questionable tests immediately at the request of the client. If we notice a problem in the test conditions we will replant automatically at no charge to the client. If a result is unexpectedly low, our procedure is to contact the customer and discuss the results with them. At that point a decision can be made to retest the sample, obtain a new sample and test it, or not to retest at all.



Above Photo: Symptoms caused by GRSPaV- Syrah in a California vineyard

Grapevine Rupestris Stem Pitting Associated Virus - Syrah Strain

By Judit Monis, Ph. D

There is scant information on the prevalence of Grapevine Rupestris stem pitting associated virus (GRSPaV)- Syrah in California. In addition, the effects of the virus in infected vineyards are unknown. In Australia, where GRSPaV-Syrah has been acknowledged as a serious problem, a study reports that this strain can cause swollen and cracked graft unions, leaf reddening, and vine decline in grafted vines. Furthermore, the Syrah strain is present in other grapevine varieties as well.

Grapevine Rupestris stem pitting

associated virus (GRSPaV) causes a disease that affects grapevines throughout the world. There are several different variations (i.e., variants or strains) of the virus. The most common strain causes a mild disease exhibiting stem pitting symptoms. In Italy, certain strains of GRSPaV cause grapevine vein necrosis symptoms (also considered a mild disease). GRSPaV- Syrah is a particular strain of the virus that was initially isolated from a Californian Syrah grapevine field selection. The original vine displayed weak growth, red canopy, and enlarged trunk

above the graft union.

A test detecting the GRSPaV-Syrah strain is included in our most popular test: Grapevine HealthCheck™ Panel A. Since we implemented the test, our lab has been gathering information from vines that are infected with this virus and hope to be able to provide more information in the coming years. Please call our lab if you notice particular symptoms in your vineyard associated with the presence of this virus.

Beyond Your Testing Continued

there to help beyond the test results.

With our merger into the Eurofins network, now more than ever, ESTA has expert resources to help with your GM stewardship questions, method validation and audit programs, food safety concerns and much more!

We believe these attributes are part of our superior customer service goal, our customized testing philosophy and our mission to help you succeed. We encourage you to take advantage of the services we offer beyond the test results. At ESTA, no question is out of the question!

Come See Us at Upcoming Events

- **NCPN Governing Body (Tier 1) Meeting: March 25-26, 2009 in Washington, DC (Judit Monis)**
- **CSA Meeting: March 1-3 in San Francisco, CA (John Mizicko, Darrell Maddox)**

**Eurofins STA Laboratories
Welcomes Asgar
Shirmohamadali, DNA
Laboratory Manager**



Eurofins STA Laboratories, Inc. announces the appointment of Mr. Asgar Shirmohamadali as Manager of our DNA Laboratory in Longmont, Colorado. Mr. Shir (prefers the shortened form) will direct and manage all operations associated with the DNA Laboratory. "We are very excited to have Mr. Shir join the Eurofins STA staff," says Gene Hookstra, Division Manager for Genetic Services. "Asgar brings over 20 years of plant breeding, genetics and applied molecular marker knowledge. He understands how to use molecular markers for product improvement and is proficient with all the latest innovations in DNA testing. His 'hands-on' knowledge will help us expand our current genetic services to agriculture and the seed industry. Eurofins STA Labs continues to help our customer's success by bringing recognized experts, such as Mr. Shir, on board."

Mr. Shir started his career more than twenty year ago receiving his B.Sc. and M.Sc. in Plant Genetics from Tehran University in Iran. During this period he worked with collecting and assessing wheat germplasm accessions, the development of rice varieties and evaluating corn hybrids for specific and general combining ability.

He completed a second M.Sc.

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Electronic Newsletter Coming Soon!

Eurofins STA is going green! In an effort to proactively save natural resources, we will begin sending our newsletter electronically. Starting with our next issue, the information you value will be conveniently emailed to your inbox and viewable on our website. Sign up to begin receiving our electronic newsletter today!

If you already receive our newsletter via email, there is no need to sign up again. If you do not, no problem. Just register at <http://www.eurofinsus.com/stagreen.html>.



**Seed Health Services Hires New
Assistant Manager**

By John Mizicko

The Seed Health Services department (a department within Seed Quality Services) has hired a new Assistant Manager/Senior Scientist whose job will be to focus on the science of seed health and improving seed health testing techniques. This will be the person that will become the "face" for the seed health science within Eurofins STA Laboratories. Please join us in welcoming Dr. Narceo Bajet to our staff. Narceo (he goes by

Nars) has a wealth of experience in both traditional and molecular plant pathology. He received both his BS and MS degrees from the University of the Philippines Los Baños and his PhD from the University of Illinois at Urbana-Champaign.

Nars comes to Eurofins STA Laboratories from a microbiologist position with a food testing company with the primary task of analyzing fresh produce, meat

products and other environmental samples for human pathogens. In this position he also was tasked with ensuring delivery of quality service to clients, conducting internal technical proficiency audits and reviewing/improving internal testing protocols. Prior to that, Nars worked as a research plant pathologist with the USDA-ARS in Wapato, Washington; was a

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New Seed Manager Continued

field supervisor for Del Monte Fresh Produce in Kunia, Hawaii; and served as a Postdoctoral Fellow/Associate Scientist with CIMMYT in Mexico and IRRI in the Philippines. He has also spent time as a Professor at the University of the Philippine in Los Baños teaching Plant Pathology/Crop Protection.

In his position with Eurofins STA Laboratories he will directly manage the seed health staff at the Colorado facility and will interact closely with the seed health staff at the California facility. Nars will

take the lead within the Seed Health Services department for test validations, protocol improvements, setting up comparative testing with other seed health professionals world wide and ensuring a strong quality management program for the department.

All of us at Eurofins STA Laboratories are excited to have someone with Nars' experience and training joining our team. His addition to the company will further support our efforts to provide you, our clients, with "The Eurofins STA Advantage." Nars officially joined Eurofins STA on February 2, 2009 and is located at the Colorado facility.

Asgar Continued

in Genetics from the University of California at Davis in 1997 where he added another dimension to his conventional plant breeding background which was the application of molecular markers in plant breeding working with tomato and dry beans.

Upon graduation Asgar took a position as manager of a DNA laboratory in the private sector. His initial responsibilities were to design and create a functional DNA Laboratory. During this period he managed molecular marker applications in multiple crops and had cross functional responsibilities with Quality Assurance, Production and protection of Intellectual Property. He was also active in collaborating within the seed industry, universities and other government agencies which could assist in product improvement.

STA Laboratories, Inc. was founded in 1987 and became Eurofins STA Laboratories in September of 2008 and is the only independent provider of a full range of diagnostic services to the seed and plant industries. Featuring three professionally staffed business units our mission is to help our clients succeed and make confident, informed product decisions by providing accurate and timely testing services with results you can trust

Introducing the Eurofins US Food Division

In the last issue, we announced our merger with Eurofins Scientific. Here is a glance at our food testing partners in the US:

Eurofins Agri-Feed Laboratory: 3507 Delaware Avenue, Des Moines, IA 50313 Tel: 515-265-1461

Recognized as a Center of Excellence for Nutrition, the Des Moines laboratory specializes in analyzing feed, commodities, pet food and dietary supplements for lipids, proximates, vitamins, amino acids and minerals for nutrition.

Eurofins GeneScan: 2315 N. Causeway Blvd, Metairie, LA 70001 Tel: 504-297-4330

Recognized as a Center of Excellence for GMO detection, the Metairie laboratory specializes in analyzing grain, feed, pet food, meat and bone meal and finished products for biotech events, allergens (PCR and ELISA) and plant or animal species detection.

Eurofins Nutraceutical Laboratory: 1365 Redwood Way, Petaluma, CA 94954 Tel: 707-792-7300

Recognized as a Center of Excellence for method applications for dietary supplements, the Petaluma laboratory specializes in analyzing botanical, herbal, phyto-chemical, sports nutrition, and dietary supplement products.

Eurofins Central Analytical Laboratories: 2315 N. Causeway Blvd, Metairie, LA 70001 Tel: 504-297-3400

Recognized as a Center of Excellence for Chemical Residues, the Metairie laboratory specializes in analyzing food, meat, seafood, cereals, oilseeds for pesticides, veterinary dry residues, solvent residues and heavy metals.



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