

Agri *focus*

LABORATORY SOLUTIONS FOR THE MODERN WORLD

WHAT'S NEW: Website Reporting

We have enhanced our website!



If you are one of our Forage or Soil customers or someone interested in forage statistical data, you have to check this out!

Feed & Forage Customers: Want to compare your forage results to other laboratory samples we're receiving?

Agronomy Customers: Interested in obtaining fertilizer recommendations for additional crops?

Now you can! Learn more by reading our Technology Spotlight article on page 5!

CROP SPOTLIGHT: Water! The Key To Quality & Yield



In order to deliver needed plant nutrients, adjustments are made throughout a plant growth cycle. Plant tissue data, visual symptoms and common sense assist the producer in making important decisions. When looking to ensure plant health, it is equally important to check the quality of the raw water utilized throughout the growing season.

The pH and alkalinity (measured as carbonates and bicarbonates) of raw water affect the adsorption of certain plant nutrients by the roots. Calcium (Ca) and Magnesium (Mg), for example, are 2 essential plant nutrients and are found in many water supplies. When present, these nutrients can provide a portion of what is needed by the plant. If these nutrients are sufficient enough in concentration in the water, they can reduce, and possibly eliminate, the need to add reagents that supply Ca and Mg. This could result in savings in chemical costs.

For example, water with 30 mg/L (ppm) of Calcium is frequently referred to as hard water. As a result of the high Calcium, the pH of the growing media will continue to rise resulting in an alkaline environment for the plant. When this occurs, Calcium Carbonates (CaCO_3) will form in the growing media, resulting in a compromised root system.

Additionally influencing the plant nutrient delivery strategy is the fact that water quality may change throughout the growing season. Water analysis is a useful tool for helping producers to be aware of how their water is influencing the quality and yield of their crop.

If there are questions regarding what to do regarding your raw water, give us a call! We are here to help assist where ever we can.

DEPARTMENT SPOTLIGHT: Plant Tissue Testing Tomato & Strawberry Crop Examples

The majority of consumed fruits and vegetables grown in the United States are wholesome and fresh. Plant nutrition and proper fertilization are important factors in maintaining healthy and productive plants. Yield and quality cannot be achieved to its maximum potential unless data is collected and analyzed. The end product, or what is taken to market or auction, is sold by the characteristics of that fruit or vegetable:

- Curb appeal: size, color, shape, absence of cracks
- Taste: sweetness, freshness
- Yield: pounds per acre

Planning ahead by being proactive is important when making agronomic decisions. Remember to:

- Test the plant medium (soil, soilless media) for its nutrient profile
- Test raw water source(s) throughout the growing season
- Test fertigation solutions to ensure accurate applications are delivered
- **Plant tissue test frequently throughout the growing season**

What a Plant Tissue Analysis provides:

- The nutrient status of the plant at the time of sampling
- Detects deficiencies not visually seen
- Detects nutrients that are approaching or are at toxic levels
- Used as a monitoring tool to track the health and vigor of a plant
- Allows for corrective measures noting fertilizer applications

PLANT TISSUE ANALYSIS & TOMATOES

Nitrogen (N) and potassium (K) are two of the most predominately looked at macro elements when it comes to tomato plant fertility. During the early stages of tomato development the requirement for potassium and nitrogen is virtually the same.

During the pre-fruit stage, nitrogen levels are important for determining the yield potential of fruit loads. After this stage, the requirement for potassium continually increases and the need for nitrogen actually stays the same or, depending on the crop, decreases.

At the full bloom stage, and thereafter into fruit set, tissue nutrient concentration for potassium is heavily influenced by the number of blossoms set (fruit load per plant). In short, it is important to adjust the delivery of potassium as early as pre-fruit.

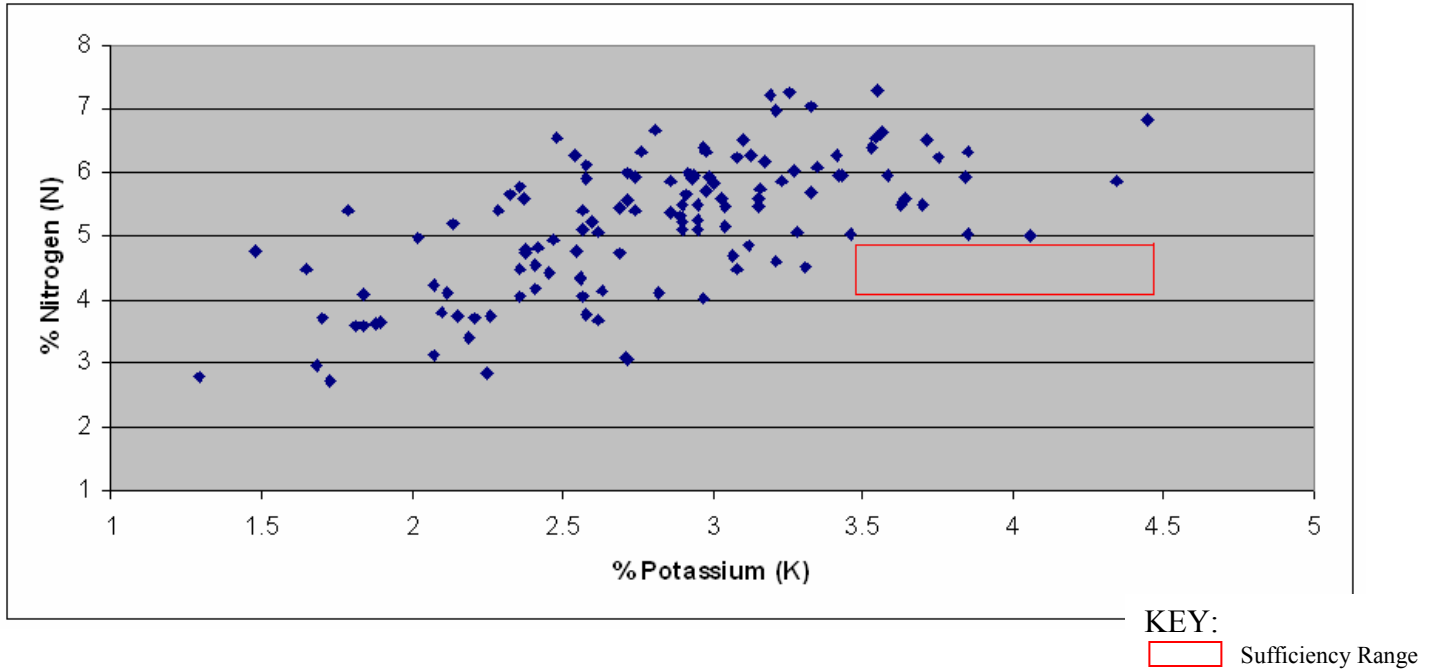
The pre-fruit scatter plot tells us that during the early stages of tomato plant development both nitrogen and potassium levels are somewhat deficient (Figure 1). As the plant matures during the pre-fruit growth stage it is important to plant tissue test in order to adjust the delivery rate of essential plant nutrients.



To see all the nutrients a complete plant tissue analysis offers, [CLICK HERE](#) to see a sample report!

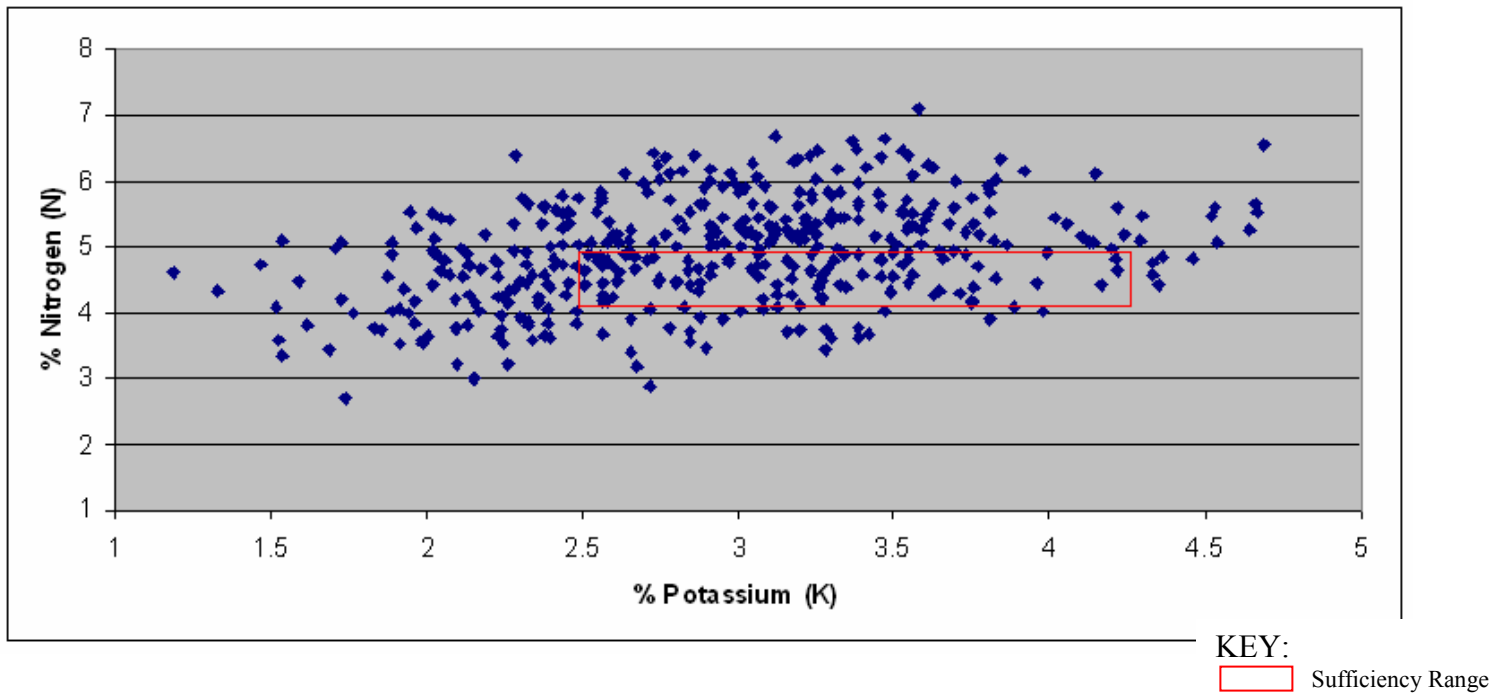
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Figure 1: Percent Nitrogen to Percent Potassium nutrient ratio for pre-fruiting tomatoes analyzed at Agri Analysis Inc from January through June, 2011 (n = 125).



The fruiting scatter plot tells us that plant nutrient adjustments are underway (Figure 2). Notice the number of plots that reside within the sufficiency box.

Figure 2: Percent Nitrogen to Percent Potassium nutrient ratio for fruiting tomatoes analyzed at Agri Analysis Inc from January through June, 2011 (n = 410).



Nutrient ratios change significantly throughout the tomato growth cycles and are influenced by environmental factors such as temperature, light and humidity. Therefore, plant nutrition plays a critical role in determining the fruit yield and quality. If monitored on a regular basis and adjustments are made accordingly cost savings and the prevention of fertilizer wastage can be realized.

Continued on page 4...

PLANT TISSUE ANALYSIS & STRAWBERRIES



The strawberry plant is a perennial and so we need to understand that all four seasons of the year are important. Here are some steps to take throughout the year:

FALL

- Soil test in the early fall. Soil samples are necessary in order to correct any imbalances.
- Always apply nitrogen September – October; nitrogen stimulates root development and flower initiation
- Record all fertilizer applications! Normal nitrogen applications are 30-40 pounds per acre.

WINTER

- Review all important information regarding crop performance. Remember that yield determination is dependent on the age of the plant. Typically the maximum age for a strawberry plant is 4 years, after which yield will begin to decrease.
- Seek out advice from a qualified plant nutritionist to develop plan for the spring.
- Always stay informed by attending educational meetings

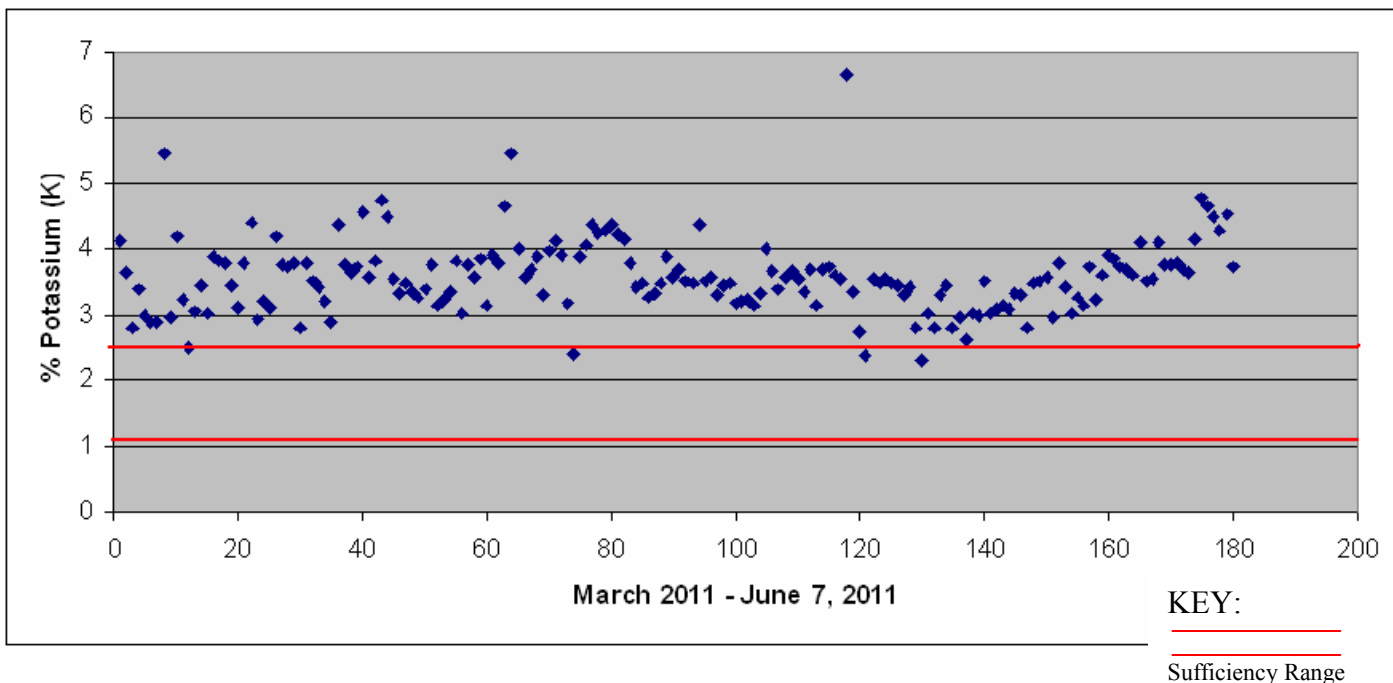
SPRING

- Because strawberry plants break dormancy early spring, the usage of nitrate nitrogen uptake dramatically increases. By applying recommended fertilizer applications during the fall the plants are vigorous and healthy when dormancy is broken.
- The first tissue sample should be taken at this point. The report will indicate whether the plant is receiving the needed nutrients.
- Determine the frequency of tissue testing by reviewing your plan that was established during the winter.
- Possible tissue testing should coincide with: (1) early spring vegetative stage; (2) blossom set; (3) Fruit set; (4) Fruit harvesting or ripen; (5) Post fruit harvest.

SUMMER

- Monitor plant behavior for disease and any visual problems
- This spring, a very high percentage of the strawberry tissue samples submitted to Agri Analysis Inc demonstrated adequate potassium levels for attaining maximum fruit yield and quality (Figure 3).
- However, if you suspect potassium deficiency there are some symptoms to look for this summer!
 - Strawberry plants with potassium deficiency will have older leaves that are burned along the edges, known as scorch.
 - Secondly, fruit will not develop a full color and will instead be pulpy and lack flavor.
 - In addition, few runners are associated with potassium deficient plants and those that do form are thin and spindle.

Figure 3: Percent potassium in strawberry plant tissue samples received from March through June 7, 2011 (n=180).



TECHNOLOGY SPOTLIGHT: Website Reporting



Jeff Foster, owner and CFO of Agri Analysis Inc, has developed a new web reporting feature using MYSQL and PHP. We are happy to announce that phase 1 has been released with additional reporting phases planned. This new application uses the latest web based technology and its capabilities will provide our customers with added benefits as we move into the future together.

For those of you using our **Recordkeeper** software, you will find this new process much easier to handle because we will be maintaining the database. You will simply log into the reporting system and view or print your reports.

FEED & FORAGE CUSTOMERS

Forage customers will be able to view a report by workorder. Simply log in and “*Select to view your Forage sample.*” A list of forage samples will be displayed for you to select the sample to view or print. You may also “*Select to view your Forage samples by farmer*” and a list of your clients / farmers will be displayed. Once you select your farmer the *Forage Analysis Client Report* will be displayed showing a summary result of all the farmer’s samples.

Want to compare your forage results to other laboratory samples we’re receiving?

If you would like to see how all other laboratory samples are reporting, we have created a complimentary service to our customers where they can select our “*Statistical Reports.*” Once you select this area, you may select sample type (Corn Silage or Mixed Hay or another) and the time period. Select “*View Report*” and you will get a result summary of the many different nutrients.

AGRONOMY CUSTOMERS

Soil customers will be able to view a report by sample number. Simply log in and “*Select to view your Soil sample.*” A list of soil samples will be displayed for you to select the sample to view or print. You may also “*Select to view your Soil Results by farmer*” and a list of your clients / farmers will be displayed. Once you select your farmer the *Soil Analysis Client Report* will be displayed showing a summary result of all the farmer’s samples. For those interested in obtaining recommendations for additional crops you can “*Select for additional Soil recommendations*”. A list of soil samples will be displayed for you to select a sample to obtain additional soil recommendation.

What’s Ahead?

The plan is to continue to develop this reporting feature by adding Plant Tissue, Manure and Water report features. We also foresee adding additional features to the Forage and Soil areas.

If you have a reporting idea or need, send Jeff an e-mail and he will add your request to a future phase: jefff@agrianalysis.com

Select the sample and the laboratory report will be displayed. At the bottom, you will find 3 areas for you to select another crop. Using the drop down menu, select a crop and enter your yield goal. The additional recommendations will be calculated and stored for you to view or print.

Continued on page 6...

TECHNOLOGY SPOTLIGHT continued...

TRY IT OUT!

To explore the “NEW Customer Reporting” feature, simply navigate your Internet browser to <http://www.agrianalysis.com>! On the top main menu bar, Select “**NEW** Customer Reporting” and you will be directed to a reporting menu.

To Log in and view or print your reports [Click here!](#) A login screen will be displayed. Enter the Customer Code of “demo” in the selection box and a password of “demo” and click on the “Login” button. This will take you to the available Customer reports selection area. Jump around the reporting features and tell me what you like and dislike by sending me an email.

To view Forage Statistical reports [Click Here!](#) Enter your search criteria with the drop down menus and select “View Report” to view the results.

GET YOUR OWN PASSWORD!

Partner with us and purchase a Web Reporting subscription!

The annual subscription cost is \$200 and you will receive your own password and access to your reports. You will also receive priority on the implementation of your reporting ideas and needs. Together, we can help each other save time and money by using this technology. To request a password send an email to Jeff@agrianalysis.com and he will send you a password and an invoice.

**SIGN UP BY JULY 31, 2011 AND RECEIVE 25% OFF
YOUR FIRST YEAR ANNUAL SUBSCRIPTION!**

