

# MEASURE AND MANAGE

## On-Line Greenhouse Guidelines and A/B Tank Mix Calculator

By Dale Cowan  
[dcowan@agtest.com](mailto:dcowan@agtest.com)  
Agri-Food Laboratories CCA.On

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The most recent addition the Agri-Food Laboratories Reports On-Line System is our Greenhouse Guidelines and A/B Tank Mix Calculator. This exclusively web-based system is available to all customers who chose the analytical services of Agri-Food Laboratories. You can now access all of your reports at your convenience, day or night with this on-line service.

To obtain your unique username and password for the Reports On-Line system, simply send us your email address with your submission form and samples. All of the reports you have will remain on line, and each time you log on, you will be able to see all of your reports (or search by date, etc.) and select the desired report to either view or print.

Once you have selected a water sample or solution report a link to “**Greenhouse Guidelines**” will be displayed. This will take you directly to the **Greenhouse Guidelines and A/B Tank Mix Calculator** part of our website.

To use the Calculator follow these steps:

- Select the sample you wish to use.
- Select the crop (a number of flower and vegetable crops are available)
- Check Tank Size and Dilution Factor
- Add text in the “Prepared for:” and “Prepared by:” dialogue box.
- Click **NEXT**

### Nutrient Balance Table

**Target Values:** Values which can be edited by clicking on **Edit Target Values** (in the table title)

**Water Analysis:** The results of your chosen water sample (cannot be edited)

**From Ingredients:** Blank until **Suggest Rates** (more info below) has been selected

**Balance:** the difference between target values and water nutrients, it is color coded; green = balanced, yellow = surplus over, red = deficient (in relation to target values)

**Deficient:** the summary line that identifies deficient nutrient levels

**Estimated Solution:** the resulting balance after **Suggest Rates** has been selected

Immediately below on the left side of the Nutrient Balance table is the Estimated pH of the water, Estimated EC of the water and Estimated EC of the solution.

Below that is the **View Ion Balance** Summary. When you select this it will display the Ion Balance of both the water sample and the final solution.

### **Ingredient Summary Table**

Along the top of the table are options; **Edit Ingredients/Rates, Suggest Rates and Clear Rates**

#### **Edit Ingredients/Rates**

When chosen, you will be able select or deselect ingredients from a list by checking the box beside the product you wish to use or un-checking the box to discontinue using an ingredient. You can also set a maximum rate to use, or set the actual rate (of product) that you want to use.

#### **Suggest Rates**

After selecting crop, editing the Target Values, editing/selecting ingredients, click on **Suggest Rates**. This will attempt to balance the nutrients required by using the target values, the water test values and ingredients. The Ingredient Summary Table and the Nutrient Balance Table will change to reflect the addition of the suggested nutrients. The resultant Nutrient Balance table will have changed colour and will now display the resultant balances (green), deficits (red) and surpluses (yellow). The Ingredient Summary table will display which products are used and the contribution from each product towards the different nutrients.

### **Stock Tank Summary**

The Stock Tank Summary will display the products and rates for each Tank A, B, and C. If there is no C tank, follow the subscripts that instruct you how to allocate the acids between tanks A and B.

### **Clear Rates**

To run another crop or scenario click on **Clear Rates**. This clears the work space and allows for a new set of guidelines to be calculated

### **Output**

There is a printer-friendly version of the recommendation available.

### **Re-circulating Water**

Integrating the use of re-circulating water into the feed system is being done more and more. The best way to submit this sample along with the raw water is to indicate the percentage or ratio of re-circulated to raw water you wish to use. For example: on the re-circulating bottle write 40% on the raw water write 60%. We will combine the 2 samples

in 40/60 volumetric basis and analyze the mix and report it as 'Water 40/60'. This would then be the report you would select to use in the Greenhouse Guidelines and A/B Tank Calculator.

### **Additional Information**

To share information with a consultant you have a number of choices. You can email the report to him or if you indicate a copy to be sent to someone else (provide email address) we can set up a web account for that person linked to yours.

As an example, if you use the services of Wayne Brown with OMAF, you may wish to have him run the calculator program and customize the target rates. We would set up Wayne with access to your account .When he logs on to his account he will see all of your sample information and will be able to run the AB calculator and send the results to you directly. The ability to email the results in PDF format is currently under development.

Remember the person you share this program with has access to all of your Agri-Food data. If you wish to stop third party access to your data please notify the lab and we will block the access.

The target rates that are calculated are provided as guides only. Management of a greenhouse production system is a dynamic, fluid and nurturing process and as such it is impossible to integrate every conceivable combination that may affect plant performance. Due to the complexity of greenhouse systems, we have built in flexibility for the user. It is necessary for the user to understand the importance of final pH and EC measurements and feeding rates in their own operations.

The final solution pH can be changed by adjusting the Bicarbonate level. A bicarbonate level of 25 ppm in the Target Area results in a pH of approximately 5.6, a Target of 50 will result in a pH closer 6.1. The EC of the initial water sample will have an impact on the final solution EC, choose water with a low EC.

We believe the Greenhouse Guidelines and A/B Tank Calculator will add more value to your Agri-Food Laboratories Analytical Reports.

If you have any questions or comments they can be directed to Dale Cowan or Papken Bedirian at [lab@agtest.com](mailto:lab@agtest.com)