

Virtual Grower 3.0 Tutorial #7: The Output Menu and Calculating Costs

- (0:02) Welcome to Virtual Grower tutorials, an online series designed to help users navigate different aspects of the Virtual Grower software.
- (0:12) In this tutorial, we will calculate costs for the greenhouse we have been building in other tutorials and view the different formats for displaying information generated from your simulation. Under the File menu, select 'Load'. Choose your .gsf file and click 'Open'. Click on the 'Output' button under the Output section, located at the bottom left.
- (0:38) The default display presents the Greenhouse Setup screen. We have already assigned heating, lighting, and plant properties to our greenhouse and are now ready to move on to the next step. Click on 'Costs' at the top of the screen.
- (0:54) The long white field lists the greenhouses from which you can choose for your cost simulation. Check the box next the greenhouse that you will be simulating and press the 'Calculate Output' button. In just a second or two, your monthly and yearly energy costs are populated in the data table on the right.
- (1:13) The first column lists monthly heating costs, while the second column calculates heating cost per square foot or square meter of your greenhouse space. The third column records the typical monthly low temperature event from the weather database at your location. The next two columns describe your monthly lighting costs and costs per unit floor space of your greenhouse.
- (1:34) If you scroll to the bottom, you will see the yearly totals for your energy costs are also summarized. Your maximum BTU usage is listed, as well as the total area of your chosen greenhouse space.
- (1:46) Below the data table, a graph of your output is presented for helping you visualize your costs. Clicking once on this picture enlarges its view. While enlarged, you have the option of saving your graph as an image file by choosing the 'Save Graph' button. Choose 'Close' to minimize the picture. The Chart Type dropdown menu allows you to choose the graphical display of your data, as total costs represented by a pie chart or line charts detailing costs by hour or day over your chosen time period.
- (2:18) Depending on your needs, you may want to change the configuration of your output to glean different information from your simulation. The Output Type dropdown menu allows you the option to do so. Changing the output type to 'Costs Per Greenhouse' presents your data in a slightly different form. The columns of the data table stay the same, but costs are broken down by greenhouse structure and heating schedule, which is especially useful for simulations involving more than one greenhouse or a single greenhouse with more than one heating schedule. Scroll bars along the side and bottom allow you to navigate through the data table. The pie chart and line graph options break down costs into their subsequent groupings, either heating or lighting.

- (3:02) You can also find information on plant growth, based on your plant list. Change the output type to 'Plant Growth'. The data table contains several columns relating to your plants' development. First, all the plants selected in your plant list are listed by common and Latin name. Using your chosen environmental conditions, the software calculates the approximate time to flower and the weight of each plant type at flowering based on your chosen start time from the Output: Greenhouse Setup screen. The photoperiod for each plant is also supplied for you.
- (3:35) The final column, titled Notes, will contain information warning you if your chosen environmental conditions are less than ideal for propagating a selected species. Down below, bar graphs display the estimated weight and weeks to flower for each species.
- (3:51) You also have the option to export and save the information from your simulation. Click the 'Generate Report' button and choose a name and location for your file. Your report will be saved as a "rich text format" file, or .rtf, and can be opened in a word processing or spreadsheet program outside the Virtual Grower software.
- (4:14) This completes the Costs portion of the Output menu. Additional tutorials describe other segments in the Output section.
- (4:22) Any time you need more assistance, you can go to the Help menu. There, you will find our email address, USDA-ARS@utoledo.edu.