Hobo Basics

These instructions assume you have HOBOware Pro loaded, although the basic HOBOware is very similar. To see if any upgrades are available from HOBO click Help – Check for Updates. The Hobo Help in general is pretty useful.

Launching Your Logger
- After hooking up the logger and starting Hobo, click Launch Device (1st icon top left). If your logger is still measuring temperatures, Hobo asks you if you are sure you want to launch the logger, since this will erase all previous data stored on the logger. Then the Launch Logger window pops up, which give you some info about the logger (including battery level), and allows you to name it (Description) and to set the logging interval and start time. To save battery strength, only tick the Temperature 10K Thermistor in the 'Channels to Log', not the battery voltage. You can see how long the logger can measure before it runs out of room (Logging Duration); try entering different Logging Intervals to see how the duration changes. A Logging Interval of 30 minutes seems reasonable. If you aren't going to get the logger into the vineyard for a couple of days, use the Delayed time in Launch Options. Click Launch, and the logger is armed and ready!

Downloading Data from Logger
- After hooking up the logger and starting Hobo, click Readout Device (2nd icon from left); don't stop the logger when asked (unless it's the end of the season). Hopefully you are doing this with a laptop near your vineyard, or at least not taking too much time in the house, to avoid any weird temperatures being recorded.

- You will be asked to save the data in a .hobo file; by default, this file will be named the same as the logger was named when it was launched, but of course you can call it anything you want. I usually add a date to the name. After a while you may collect quite a few .hobo files, so keep them all in 1 folder. If you download your data again in another month, it will include all the earlier data so at that point you can weed out earlier files if you want.

- Next, the plotting window pops up. The Temp series should be checked; you don't really need the 4 events. Click Process…. to get to the Growing Degree Day calculator. Set the Lower Development Threshold to 10C (if it comes up F by default, you can change your units from the main Hobo window in File – Preferences – Default Unit System). The Upper Development Threshold would not normally be relevant in our climate and can be left at 70C. Use the top calculation method (Average Method High/Low) which finds the daily high and low temperatures and calculates that day's Growing Degree Days according to GDD = (Tmax + (larger of 10, Tmin))/2 – 10. This is not the only way to calculate Degree Days, but it is pretty common and can easily be applied to data from other sources (published numbers, government weather stations, etc). Click Create New Series, then click Plot in the Plot Setup window.

- Voila! You should see a graph of temperature vs time and cumulative GDD vs time. There are various statistics available for each of these curves in the window to the left of the graph, and the data themselves are displayed in the blue and white striped area above the graph. Note that although there's a temperature reading every 30 minutes (or whatever you've set your interval to), the GDD for a particular day is posted at noon. Play around with the icons to see what you can do with the graph; the Zoom Tool (magnifying glass) is particularly useful; click and drag to draw a box, then click inside the box to zoom. You can then use the Pan Tool (hand) to move around the graphs. When in Select mode (click the Select Arrow Tool), you can click the right-hand mouse button on the graph to bring up menus. More on this below.

Plotting and Comparing Multiple Data Sets

- Lets say you have a bunch of .hobo files from various sources and want to compare two different data sets. To graph the first one, click the Open Datafile icon and find the .hobo file. Plot it as described above. Then, click the Open Datafile icon again and select and plot the other file. You now see two white tabs just under the icons, one for each of the two graphs. Click on each of them to see the two different data sets. You can open several more if you want.

- In one of the graphs, make sure you are in Select mode (the arrow icon), and select either the temperature or GDD curve by clicking close to the first or last point on the curve. You should see the graph become shaded in grey (may have to click a couple of times). With the cursor still near the first or last point, click the RH mouse button, and you'll see a menu pop up (illustrated below). Several things on this menu are very useful, and you'll want to get familiar with it. The top option in the menu, Series Properties, allows you to rename the selected temp or GDD curve, which is handy for keeping track of various curves if you are about to copy and paste some onto the same graph. To copy the selected curve to the other graph, click Copy Series in the menu, click the white tab to bring up the other graph, click the RH mouse button anywhere on the graph, and click Paste Series. You can use these steps to copy as many curves into one graph as you want. By selecting a curve and going to the RH mouse button menu, you can use different colours and line types for each curve to help keep track of them. You can use the usual zoom and pan tools to get a close look at how two sites compare.

- To save your graph with multiple data sets plotted together, click File – Save Project and type a name.

Exporting and Filtering Data

- To export your data to Excel, just click File – Export Points as Excel Text. Export to 1 file; the next window is where you name it. Hobo creates a .csv file, which opens in Excel. If you go ahead and export a basic graph containing a temperature curve and a GDD curve, you'll see 4 columns in Excel, with time and temperature in columns 2 and 3 every 30 minutes (or whatever you set your interval to), and the GDD value for each day posted at noon. If you only want the GDD data, select and right-click the temperature curve(s) and click 'remove', then export again. You can then easily calculate each month's accumulated GDD in Excel, to compare to other data sources.

- Sometimes you may want to just export the daily min and max temperatures, to compare in an Excel graph with Government daily min-max data, for example. To do this, select and right-click the temperature curve, and select Filter Series. You can calculate and plot the daily max, do it again for the daily min, and then remove the original temperature curve. If you now export, you will just get the min and max temps for each day.

Feel free to email me if you have any questions or insights to pass on.

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Keystone Oldfield PN LM

Series: "Temp" Properties…
Other Graph Items ▶

✔ Show Title
✔ Show Legend

Add Graph Label…
Show Graph at Full Scale
SmartScale Graph

Convert Series Units ▶
Mark Points
Filter Series…
Copy Series: Temp   Ctrl+C
Paste Series   Ctrl+V
Remove   Delete

Copy Graph to Clipboard

Select None
Remove Crosshair
Remove Subset Stats
Bring Series to Front
Send Series to Back

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