# All that weather data – What do I do with it?

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As previously mentioned, modern digital devices are capable of collecting huge amounts of data in a very short space of time. At HortPlus, we are constantly asked "what do I do with all this data?" Too often people get into the habit of collecting data and not using it to its full extent. We call that "stamp collecting". Data, to be useful in a business sense needs to be transformed into actions. For example, if it is wet, do I need to spray? What you can do with the data falls into three broad categories. I will attempt to give an example of each but you will need to customise this for your own situation. Remember you can get direct access to these tools if you are a subscriber to Metwatch Online or a pipfruit grower.

## Direct comparison

An example of a direct comparison is shown in Figure 1. This data was extracted from a daily summary from the weather station at Havelock North. It shows the maximum and minimum temperature along with the average, total rainfall and a few other variables. Growers could use this data to base decisions on an in depth knowledge of their crop. For example, a sunburn threshold or frost susceptibility. To get the full picture on frosts you may also need to look at the hourly climate values as well. This will not only give the depth of the frost but also the duration. An important consideration when assessing the effect of the climate on your chosen crop.

## Comparative analysis

Figure 2 shows the growing degree day (GDD) accumulation for Havelock North over the last 4 years. This is a good example of comparative analysis. Others include chill units and rainfall accumulation. The GDD summarises the temperature patterns for an entire season. It is very similar to a cricketing run chart. In my experience, some people have a short climatic memory. A season can move from being very cold to very warm in a relatively short space of time. The GDD helps you decide what the season has been like as a whole. We can see from figure 2 that early 2007 was warm followed by a cold period up to the end of December. From February onwards, it was quite warm and ended up being equivalent or higher than the other 3 years. Growers could use this to plan their fruit thinning strategy for the year or decide on the possible harvest date for the year. The GDD has no specific meaning. You will need to decide yourself what each total means to you. To do this, you will need a good notebook containing notes about each season. For example, what happened in an unusually warm year. Is it likely to be repeated?

## Specific models

Figure 3 shows the Blackspot model for Riwaka. Apple growers will be very familiar with this but each crop has its own model that can be used. The model integrates temperature and leaf wetness to work out the chance of getting a significant infection event from the weather conditions. This can help a grower decide what to spray and when to spray. You will notice the hatched bit of the figure. This is forecast data. So not only can you decide after the event but beforehand what your strategy would be. Other examples for other crops include pear fireblight, grape botrytis, onion powdery mildew, peach brownrot and peach leafcurl. Many of these models have been validated in New Zealand by staff at HortResearch so they are well researched under New Zealand conditions.