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I have great sympathy for growers. They have to be experts on a range of subjects. Tax, worker safety, agrichemical use, spray drift. The list goes on and on. Recognising this, the staff at HortPlus try hard to make difficult things easy to use. It is very easy to make something difficult hard to use but very hard to make something difficult easy to use. The two tools currently being tested will hopefully make your task easier.

The first tool is the Spray Plan Manager overspray system. An example output is shown in figure 1. In this example, a property is shown in yellow with the intended area to spray shown in red. Based on the forecast wind speed and direction, a prediction of possible overspray is given by the halo downwind from the sprayed area. The forecast wind speed in metres per second and the wind direction is shown by the red arrow. This prediction is based on the output from an airblast sprayer and calculates how long it takes for spray droplets to evaporate. It is hoped that by using this tool, growers shouldn't get spray on to non target areas and sensitive zone like schools, residential area and waterways. Growers can also add their own sensitive areas. An example is shown in figure 1 as a yellow dot.



Figure 1 : Overspray example



The tool will also take shelterbelts into account. We know that shelterbelts impede spray movement. If the spray is forecast to move through a shelterbelt, it will be reduced. Growers should also be able to experiment with shelterbelt placement and predict the effect. Potentially a valuable planning tool.

The weather forecasts for this are updated 7 times per day and there are 35 sites. This should cover all growers. Also the map system covers all properties and there are satellite pictures available thanks to Google.

The second tool is the tree crop irrigation calculator. HortPlus is in year 2 of a Sustainable Farming Fund project to develop an irrigation tool for growers use. Plant and Food Research are also involved in this project. The software is being tested by 10 growers this year and will be open for all growers after that. The idea behind the software is that a grower establishes an irrigation strategy for a crop. Maybe at one stage during the growing season a water stress needs to be applied to increase crop quality. Using this crop strategy, the soil moisture content is estimated by subtracting daily evapotranspiration corrected for each crop by a crop factor and adding rainfall and irrigation inputs. In essence this is a simple water budget. Dr Steve Green from Plant and Food Research has been verifying the crop factors with field work and helping with software design.

An example simulation of soil moisture is shown in figure 2. The upper thick black line represents the field capacity of the soil. Moisture applied by either rainfall or irrigation is quickly lost by drainage which is shown as the blue line above this. The irrigation strategy for the crop is shown by the thick green line. The goal of the grower is to maintain soil moisture between the thick black and green lines.

Growers can go to <http://www.cropirlog.co.nz/index.php?pageID=pet> and get ET data from the HortPlus weather station network in New Zealand. There are 67 stations to choose from covering all the major horticultural areas from Northland to Central Otago. The ET and rainfall information is updated daily. This site also has soil maps of New Zealand available courtesy of LandCare. See figure 3 for an example. These maps cover the whole country and are useful to estimate the field capacity or moisture holding capability of your property. This is a required value for the software to work effectively. Also to get additional information about the soil just click on it. Instructions on use of the map can be viewed by clicking on the ?

It is hoped this tool will help growers manage soil moisture more effectively. Access to water, already a big issue in some regions, is forecast to become harder particularly as primary production increases. Wise use of this scarce resource is vital.



As usual, if you have any problems, send us an email at support@hortplus.com. We would be happy to help. The map will not work with Internet Explorer version 6 but upgrading to the latest version is free and you also might like to have a look at other browsers. These are free as well.

A final note on weather forecasting. I have been watching our family cat for several years. If it is going to rain, he washes behind his ears. I call this a cat scan. I'm sure readers have other things they go by. For example in Hawkes Bay, the popular legend is that frosts are more severe when we have a full moon. Send us an email with your rule of thumb.