

# Vegetable -Matter-of- Facts

Farm Services Victoria - Horticulture

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Crop Water Use - Evapotranspiration(ET)

## Crop Water Use for Vegetables

### Understanding Evapotranspiration for Irrigation

- Evapotranspiration (ET) data will help you meet crop water demand
- ET data helps determine a crop's water use

Evapotranspiration (ET) is the process of water moving to the atmosphere through plant use (transpiration) and evaporation from the earth's surface.

ET can be used by growers to determine how much water is lost in a paddock and therefore needs

to be replaced through irrigation.

There is a network of weather stations all over Victoria. The local Evapotranspiration figure (ET) is calculated from information gathered by these weather station. The information can help farmers with irrigation decisions.

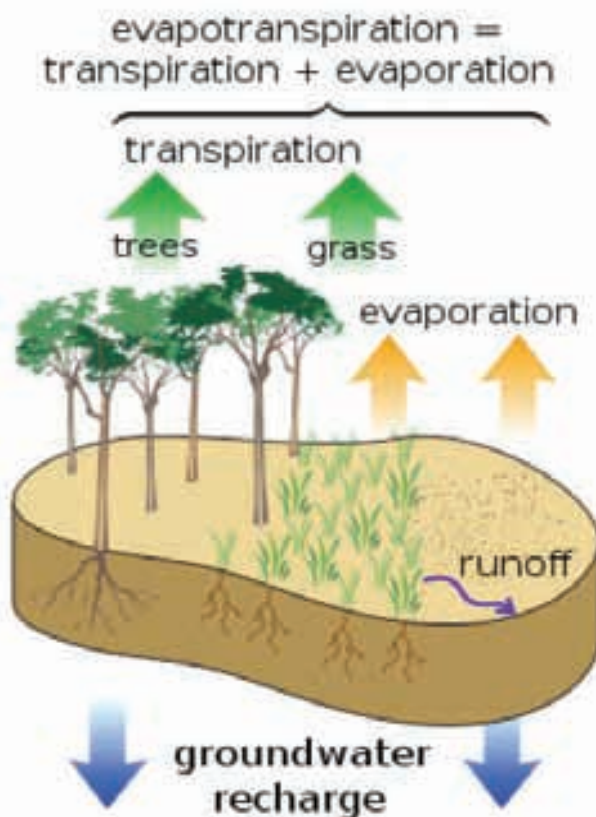
Use ET to work out how much water is left in the soil and then decide how much water to apply to crops:

This is done using the formula below.

**Crop water use (mm) = crop coefficient x Evapotranspiration(ET)**

The crop coefficient relates to the crop's water use at a particular developmental stage. Vegetable crop coefficients, in general, only vary from 0.9 to 1.1 so a **crop coefficient of 1.0** is used.

Therefore, for vegetables the crop water use and ET is the same. This estimate will need to be adapted for each farm situation.



Evapotranspiration Diagram (Source: Wikipedia)

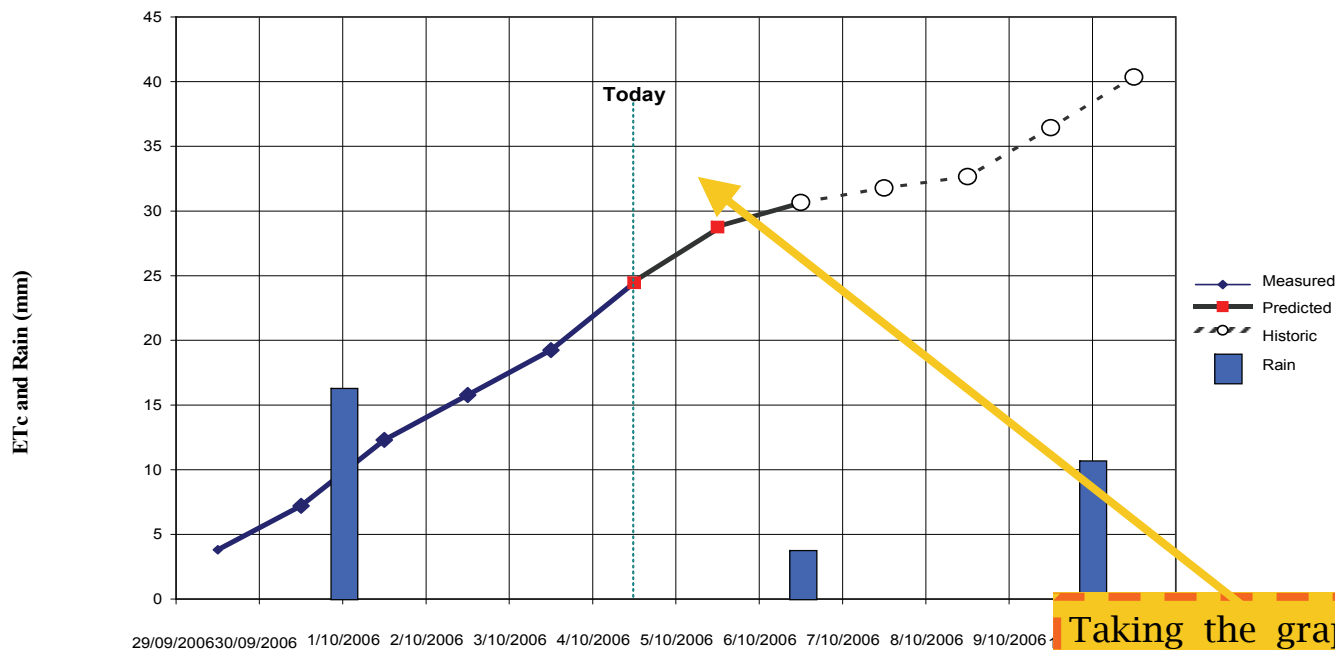
ET information is available from a number of sources such as the local paper, websites and can even be sent directly to you. Contact your local DPI Office for information on where to find ET figures for your area.

The amount of water required to replenish the soil is calculated based on ET. The graph below (a fax that can be sent to growers in some areas), indicates the amount of water required for the next few days using a general trend line that has been created from data from the previous days. This is then used to work out when and how long to irrigate the crop so that the correct amount of water is applied at the next irrigation.

**Note: That this figure is an estimate of the minimum needed and will need to be adapted for each farm taking into account soil types, production and irrigation system crop stage and leaching that may be required.**

### EVAPOTRANSPIRATION DATA SUPPLIED BY DPI

Representation of two week cumulative *turf* water use and rainfall, in *Somerville*.



Taking the graph into account to replace the water lost from the 29/9 to 5/10, we would need to apply 24mm, less the amount of rain 16 mm, so a total of 8mm of irrigation is needed.

Table showing recorded climate data for the *Somerville* region during the past 7 days

Date	Somerville							
	Temp		ETc	ETo	Humidity		Wind	Rain
	min	max	(mm)	(mm)	min	max	dir	(mm)
29/09	2	26	8.2	9.1	14	87	NW	2
30/09	3	28	4.6	5.1	35	80	NE	0
01/10	5	29	5.6	6.1	45	85	ENE	0
02/10	2	25	3.5	3.9	60	90	WNE	8
03/10	1.1	26	5.7	6.3	50	85	SE	0
04/10	3	27	6.3	6.9	55	92	ESE	0
05/10	4	31	8.9	9.8	35	68	N	0

Check us out and view our other fact sheets:  
<http://www.dpi.vic.gov.au/vegcheque>

For more information please contact your local VegCheque Officer.

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