

Salinity Converter

Electrical Conductivity (EC units)	Parts Per Million (PPM)
20000	12800
15000	9600
10000	6400
8000	5120
5000	3200
2000	1280
1000	640
500	320
200	128
100	64
50	32
0	0

CAUTION:

Always determine the units your salinity meter measures before using this information.

Also check your returned salinity sample letter from Goulburn-Murray Water so that you are using consistent units - it will ensure you get your conversion right every time.

SALINITY

Extreme

High

Medium

Low

Remember that EC units are expressed in micro-siemens/cm at 25°C ($\mu\text{S}/\text{cm}$) and that:

1000 EC = 1000 $\mu\text{S}/\text{cm}$ = 640 ppm = 1 dS/m

For further information contact:

Department of Primary Industries, TATURA (03) 5833 5222

Groundwater Extension Officers can provide advice on locating groundwater through the Farm Exploratory Drilling Scheme (FEDS), the management of groundwater and its use for irrigated agriculture, domestic and stock drinking water (eg. Groundwater quality impacts on productivity and stock health).

References:

Boland AM, Ziehri A and Beaumont J (2002). *Guide to Best Practice in Water Management; Orchard Crops*. Department of Natural Resources and Environment (DNRE) and the Murray-Darling Basin Commission (MDBC).

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action
Salinity & Water
AUSTRALIA

Water salinity tolerance of different crops and stock

In the Shepparton Irrigation Region



Victoria
The Place To Be

Department of Sustainability and Environment

Department of Primary Industries

Use of this guide—what you need to know

Groundwater is a widely distributed natural resource which is of vital importance in managing salinity and where possible, supplementing irrigation water and providing stock and domestic water supplies. Much of the groundwater pumped in the Shepparton Irrigation Region requires mixing with surface water supplies. The Goulburn-Broken Regional Catchment Strategy recommends that to protect soil health and maintain clover based pasture production, groundwater be reused for irrigation at no more than 800 EC (500 ppm).

Other recycled water sources such as drainage diversion and reuse systems can also contain elevated salinity levels. This requires close monitoring of water quality depending on its intended use.

The figures in the following tables contain information on the various salinity tolerances of forage species, fruit, vegetables and animals to applied irrigation and drinking water salinity. They are to be used as a guide only. More specific information on salinity tolerances is available from your nearest Department of Primary Industries. The most important point to recognise is that although plants may be tolerant to higher salinity water, productivity starts to decline at higher salinity. Soil health is also at increased risk.

This is a general guide to **ONE** aspect of water quality. It is possible for situations to occur that lead to higher or lower salt tolerance levels in plants and animals. Note that other elements in water can become toxic as salt levels increase. This also plays a part in limiting water use.

Always have your water routinely tested

Salt tolerance of several forage species and effects of applied irrigation water

Species	Applied irrigation water (EC)	Comments
Sensitive plants Clovers (white, red, cluster, suckling and subterranean)	Up to 800	Suitable for use with all crops. Above 800 EC sensitive plants will suffer some yield loss.
Moderately-sensitive plants Balansa clover, Persian clover, strawberry clover and lucerne	800 - 1500	Sensitive plants have increasingly reduced growth. Moderately sensitive plants should suffer little or no yield decline.
Moderately-tolerant plants Berseem clover, sorghum, tall fescue, phalaris, perennial ryegrass, cocksfoot, wheat and paspalum	1500 - 3000	Moderately sensitive plants will suffer increasing yield loss. Moderately-tolerant plants should suffer little yield loss with good management at the lower end of this range. At the upper end, some yield loss occurs.
Tolerant plants Tall wheatgrass, puccinellia, bermuda grass, barley (grain)	3000 - 5000	Moderately tolerant plants will suffer increasing yield decline. Only tolerant plants should be grown with very good irrigation/soil management. Towards the top end of this range some yield decline will occur for some of the tolerant plants.

Salt tolerance of fruit varieties to applied irrigation water

Up to 500 EC	500-900 EC	900 EC and above
Passionfruit Strawberry Apple Peach Grape Pear Lemon	Plum Apricot Quince Raspberry Orange	Olive Fig Cantaloupe

Salt tolerance of vegetables varieties to applied irrigation water

Up to 800 EC	800 - 2300 EC	2300 - 5500 EC
Lettuce Carrot Sweet corn Potatoes Celery Onion	Cabbage Cauliflower Broccoli Tomato	Spinach Asparagus

Salt tolerance of stock to drinking water

Poultry	Production decline begins	3,100 EC
	Maximum	6,250 EC
Pigs	Production decline begins	3,100 EC
	Maximum	6,250 EC
Horses	Production decline begins	6,250 EC
	Maximum	10,900 EC
Dairy cattle (lactating)	Production decline begins	4,700 EC
	Maximum	9,300 EC
Beef cattle	Production decline begins	6,250 EC
	Maximum	15,600 EC
Lactating ewes, weaners	Production decline begins	6,000 EC
	Maximum	10,000 EC
Sheep, dry feed	Production decline begins	9,300 EC
	Maximum	21,800 EC