



Soil Salinity

Salinity. The problem...

Soil salinity is a major constraint in food production and is one of the most significant problems in Australian agriculture. The most common form in Australia arises from two sources, a rise in the water table so that surface evaporation causes the concentration of salt in the normal root zone of crops to increase and from the use of irrigation water with a high salt content. The use of plants with a high salt tolerance has only been partially successful and genetic engineering to produce salt tolerant plants has not resulted in any significant development as yet.

Liquid seaweeds. A possible partial solution...

Extensive trials both overseas and in Australia have shown that application of liquid seaweed, particularly in the early stage of growth of cereals can give very beneficial results. Furthermore foliar spraying at later stages of growth can also be advantageous. Saline soils are generally only used to grow crops of low to moderate value per acre. The cost of liquid seaweed to reduce the effects of salinity has previously been prohibitive, but with the advent of better technology and a local processing industry the situation is rapidly changing.

Foliar spraying or root drench?

In the typical Australian situation, in the early stages of growth the soil moisture is high and the salt content moderate. This leads to establishment of the crop. However, as the season progresses the soil moisture decreases and the salinity rises. This causes stunting of root development and the plant shows signs of nutrient deficiency together with signs of salinity stress. The microbial activity in the soil is relatively high when the salinity is low to moderate but decreases as salinity increases. The difficulty of absorption of nutrients from the soil increases significantly as the soil salinity increases. Therefore, early in the season, plants can benefit significantly from foliar or soil application. However, as the soil salinity increases foliar application, of liquid seaweed fertilizer should be undertaken. Foliar application is not affected by soil salinity to any great extent, and in times of salinity problems is much more effective than soil application.

Application rates

Dilute product 1 part to at least 10 parts water. Apply 5-7L/ha in early season and one or two applications of 5-7L/ha in mid to late season. For typical cereal, pulse crops or pasture, apply **GOLD 600**, **GOLD 100** or **NB3** as a soil drench or **PREMIUM** as a foliar spray early in the season (cereals or pulse crops 10cm high). Apply **GOLD 100**, **SUPERFINE** or **PREMIUM** as a foliar spray mid to late season. If irrigating with slightly saline water, use the best quality water available for foliar spraying.

Benefits

The seaweed reduces the effect of reactive oxygen species, (ROS), formed during photosynthesis, enabling the plant to partially overcome the effects of salinity. **PREMIUM** feeds the plant through the foliage enabling the plant to maintain a good nutritional status necessary for growth.

Limitations

In high degrees of salinity no plants will grow. In order to be economically feasible it is essential that the plants become established in the early growth stage by using liquid seaweed fertilizer.

Salinity is normally a more serious problem after a period of very high moisture levels, so after a significant flood, (once the land has dried), it may not be possible to raise an economic crop on marginally saline soil if the land dries out.

If you would like to discuss this topic further, or gain more information then please contact the Fair Dinkum Fertilizers office on the details below.



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	GOLD 600	GOLD 100	NB3	SUPERFINE	SUPERFINE PREMIUM
Nitrogen (N)					5.7%
Phosphorus (P)					1.0%
Potassium (K)	3.4%	3.4%	3.4%	3.5%	5.6%
Sulphur (S)	0.8%	0.8%	0.8%	0.9%	6000 ppm
Copper (Cu)					555 ppm
Zinc (Zn)					555 ppm
Manganese (Mn)					105 ppm
Molybdenum (Mo)					10 ppm
Boron (B)					60 ppm
Sprayer Type	Coarse	Fine	Coarse	Fine	Fine
Comments	Alkaline.	Alkaline. Filtered to 100 micron	Alkaline.	Slightly acidic. Filtered to 100 micron	Almost neutral. Filtered to 100 micron



Fair Dinkum Fertilizers
manufacturers of quality seaweed products