NATIONAL LANDCARE PROGRAM

Dryland Salinity Information Sheet No. 9

PRIMARY INDUSTRIES SOUTH AUSTRALIA
SUSTAINABLE RESOURCES

A rapid field test for soil salinity

WHY TEST SOIL SALINITY?

Salinity affects crops and pastures by reducing establishment, vigour and yield. The severity of soil salinity determines which plants can be grown successfully. If salinity is suspected, take soil samples both inside and outside the area in question, and compare the results.

SOIL SAMPLING

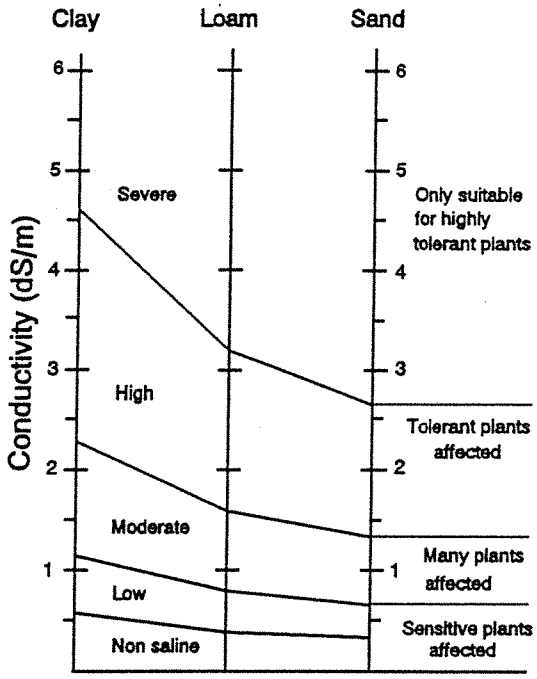
1. Take soil samples in late summer to early autumn when the concentration of salt in the top soil is highest.
2. Define salinity zones based on type and presence (or absence) of vegetative cover.
3. Take at least ten samples from each zone. Sample down to 10cm but discard the top 0.5cm if a salt crust has formed. Bulk soil samples from the same salinity zone and mix thoroughly. Use a tube sampler in preference to a spade. In some cases a subsoil sample is also beneficial.
4. Remove stones, sticks and plant material, and break down clods.
5. Place soil sample on a tray to dry. Alternatively soil can be dried in a microwave oven.
6. Record date and location soil sampled, and condition and type of plant cover of the site.

RAPID FIELD TEST

Thoroughly mix the dry soil sample.

1. Obtain a bottle or small jar with graduated markings. An old baby bottle is ideal.
2. Place soil in the bottle up to the 100ml mark, and tap gently to settle the soil.
3. Add rainwater (**NOT tapwater**) up to the 600ml mark.
4. Place the cap on the bottle and shake for one minute.
5. Allow soil for settle for about another minute.
6. Measure the conductivity of the clearer fluid at the top of the settled mixture using a conductivity meter. Units are expressed as deci-siemens per metre (dS/m). Ensure the meter has been correctly calibrated before use.
7. Use the following chart to determine the degree of soil salinity. Choose the appropriate soil texture column for your soil (eg clay, loam or sand). Locate the soil salinity test value in this column. The approximate severity of the salinity is indicated by non saline, low, moderate, high or severe. This interpretation chart is for the rapid field salinity test only.

Interpretation for the rapid salinity test



K Wetherby (1990) conversion factors used.

For guidelines on which crop and pasture plants can be grown on various degrees of soil salinity see the Dryland Salinity Information Sheet No 8 *"Assessment of saline soils"*.

The rapid field salinity test should be used as a guide only. If growing plants with low tolerance, salinity should be checked by a recognised soil testing laboratory.

For further information contact Tim Herrmann, Saltland Agronomist, Primary Industries SA, Phone (08) 303 9335, or your local Primary Industries SA office.

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