

Special Analysis Interpretation Sheet
Total Soluble Salts
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This test determines the total amount of soluble salts in your soil sample. Total soluble salts are determined through Electrical Conductivity (EC). EC is the amount of electrical current which will pass through a gap in an electrode. Pure water conducts electricity poorly. As the amount of salt in solution increases, the strength of electrical current passing the gap increases. This is briefly how total soluble salts are determined.

Interpretations of salt levels in soils for Louisiana are determined as follows:

Salt Level (parts per million)	Interpretation
0-300	Very low
301-600	Low
601-100	Medium
1001-1500	High
>1500	Very high

At very low salt levels, few if any crops will be damaged by salts. At low levels, very sensitive crops may be damaged. The danger of salt damage is increased if plants are very young with poorly established root systems or the soil is allowed to become very dry. At very high salt levels in the soil, most crops will suffer yield or growth reduction. Exceptions to this are salt tolerant crops like cotton and bermudagrass. The following table shows the relative salt tolerance of major crops.

Salt Level	Crop affected
Very low	none
Low*	rice, corn, annual flowers, clovers, peas, field beans, alfalfa
Medium	soybeans**, sorghum, tomatoes, cantaloupes
High	wheat
Very high	cotton, bermudagrass
*Danger for damage is greater if plants are small and soil is very dry.	
**Soybeans differ greatly in salt tolerance by variety.	

How do soils become salty?

1. Overfertilization with nitrogen and/or potassium.
2. Use of salty irrigation water. Test irrigation water to determine its suitability for use.
3. Some soils are naturally high in salt.

What can I do about salt problems in soils?

1. Plant salt tolerant plants.
2. Keep the soil moist. However, do not do this with salty irrigation water.
3. Apply gypsum at a rate of 1 ton/acre or 45 lbs/1000sq. ft.
This works best on sandy soils and is very erratic. It will do little good if the soil has compacted layers, dense clay layers or fragipans.
4. If this is a small garden, you may have little choices but to relocate the garden if salts are extremely high.