

Saline Soils and Alfalfa

Alfalfa Salt Tolerant Facts

1. All irrigated farms will eventually have to manage for salt problems. Irrigation water deposits salt and increases the salinity of the soil overtime, unless properly managed.
2. **Bullseye Alfalfa** has significantly better germination under salt stress than conventional alfalfa varieties. It has better germination levels than the National standardized salt resistant check varieties (University of Arizona data).
3. Most alfalfas start to show a yield loss at the concentration of salt (EC = 4 ds/m), (2560 mg/L total dissolved salts), and (44 million (mm) of Sodium Chloride).
4. Three Million acres of irrigated farmland in California is affected by salt (EC \geq 4)?
5. When a farmer irrigates his alfalfa with water from the California aqueduct, 1.2 tons/acre of salt is added to his farm ground each year. (California aqueduct water contains 0.3 tons of salt, per acre foot of water.)
6. High rainfall areas generally have less Salt Problems in their soils?
7. Irrigated farms using row or flood irrigation generally first see salt problems in the *Bottom of field (furthest from irrigation source)*.
8. Flood irrigation is preferred over sprinkler irrigation if salt is a problem.
9. A Saline Soil is one with an electrical conductivity (EC) of 4 ds/m or more.
10. Good quality irrigation water has less than 300 mg/L of totally dissolved salts (TDS). Poor irrigation water = 300-800 mg/L (TDS)
11. 1 EC is equal to 640 mg/L of TDS or 640 ppm of TDS
12. For each point above an EC of 4, the average yield loss in alfalfa due to salt is 7.3%.
13. Salt tolerant alfalfa (**Bullseye Alfalfa**) can increase the yield & persistence on marginal fields, However extreme saline soils will require an integrated management approach for long term success.