

Questions for Committee:

1. Is it worth the effort to interview growers for anecdotal information (see notes below)?
2. Growers have data on soil salinity (concentrations of certain minerals, pH and EC) but the data would have to be gathered, entered into a database and analyzed if the Committee wants quantified data.
3. Growers also have information on costs of soil amendments used to address salinity issues (gypsum for soils and acid for irrigation water). If the Committee wants it quantified this data would also have to be gathered, entered into a database and analyzed.
4. Growers also have information available on crop production from year to year that also may be of interest to the Committee.
5. If the Committee decides to continue with Grower interviews I suggest adding the following questions to the survey:
 1. Do you test the quality of your irrigation water?
 2. Do you conduct soil tests?
 3. Have you noticed a decline in soil quality over the years due to salinity?
 4. Are you willing to share water quality and soil test data with the LSJRC?
 5. Has salinity affected crop production?
 6. Has salinity affected the value of your property?
 7. Would you be willing to share crop production data with the LSJRC?
 8. Do you use amendments or other means to offset salinity?
 9. If so, which amendments/methods?
 10. Would you be willing to share cost data with the LSJRC?

General notes:

- Interviewees felt that the questions were clear, and appropriate

WSID notes

- Groundwater EC runs about 1400
- SJR EC this year has been as high as 1600
- EC data has been measured consistently for SJR water, not for Delta Mendota or ground water
- WSID does not use DMC water to blend for salinity reasons, it is too expensive. Only uses DMC water for quantity purposes
- When DMC water was less expensive WSID did more blending

Twin Oaks ID (also a farm manager) notes:

- Amendment recommendations for crops are based on soil tests
- Water quantity information is not measured, it is estimated using pump size, lift distance, and run-time.

- Cropping patterns are mostly determined by the Churches agricultural plan, not local constraints
- SJ River level decides how much ground water to pump due to pumping costs when river is low
- Twin Oaks does not test source water quality but observations indicate that the river is saltier this year than in the past.
- Observations also indicate that groundwater is saltier than San Joaquin River water
- Grower conducts soil tests for all fields each year to decide what amendments and fertilizers to put on
- Gypsum has been difficult to get this fall and thus he will have to wait until spring to apply it

Grower Notes

- In drought years salinity related water quality problems in San Joaquin River water start showing up as early as June 1st and last until the end of October
- In average precipitation years salinity related water quality problems last from the middle of July until the 1st of October
- West Stanislaus Irrigation District intakes are upstream of the Tuolumne and downstream of large tile drain system on the eastside that discharges low quality water
- Intakes downstream of the Tuolumne and Stanislaus are less of a problem
- How big the problem is depends on how close to the river is the land. There are 6 laterals between the DMC and the river and for land that receives water from the bottom 3 laterals the grower will no longer plant permanent crops.
- This year ground water quality was better than surface water
- Ground water use dependent on cost and availability of surface water sources and is used more during drought years
- Recovery of permanent crops and soil is dependent on precipitation and snowpack
- Overhead sprinklers on hot windy days can defoliate crops due to salt residues accumulating on leaves
- Almonds life span may be cut by a 1/3rd and annual production may be cut in half
- There are increased costs for purchasing and applying sulfuric acid, gypsum, leaching water and management time
- Quantities applied is dependent on soil tests (EC and pH values) and crop goals/needs (these decisions/calculations usually made by crop advisors/agronomists)
- Walnuts are much more sensitive than almonds
- Can grow lower value crops such as canning tomatoes, alfalfa, and barley
- Cantaloupes are moderately sensitive
- More salt sensitive root stalks are being developed for almonds and grapes
- The grower is willing to share salinity related cost information, crop production results and soil test data with the Committee
- There has been overall long-term degradation of soils due to accumulation of salts and boron
- Value of property that cannot support permanent crops is substantially less