



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Geena Garabedian; Taylor Wright	Project Number S1114
Project Title Healing a Wounded Earth: Getting the Salt Out	
Abstract Objectives/Goals Salt accumulation in agricultural soils is threatening world-wide crop production. We believe a new approach in high saline soils using a natural chemical source Humate molecule will reduce salts in experimental saline soils as measured by Electrical Conductivity, EC, in mS/cm. Methods/Materials High saline salt soils occur when large amounts of salt (ions) accumulate in the root zone. Over 800 million acres of farmland worldwide is affected by saline-induced soils by farming activities. Crop losses result and leaching salts out has been the common method. We tested a new natural source chemical humate compound that when added into irrigation water, encapsulates the salts. Controls of soil with 500 ppm salt and no humate were compared with experimental soil with 500ppm salt and humate using a Hach 40d electrical conductivity (EC) tester. Results Treated soils showed a lower EC value and therefore less salt after treatment. Salts in experimentals were reduced from 500ppm to 300ppm. Conclusions/Discussion Humate applications may be a promising new method for chemically treating high saline cropland thus improving farm food supply and economic profits.	
Summary Statement We tested a new chemical compound to reduce harmful high salt in agricultural farmlands which may help significantly improve crop yields over time.	
Help Received Mark Dodd, Farm Advisor	