

Columbia Conservation District

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Board Chair: Clay Hutchens



State Legislative District #16
Congressional District #5

2014 Feature Accomplishment: Researching relationship between reduced tillage and soil pH



Separating the soil sample for stratified depth analysis

RESOURCE CHALLENGE No-till/direct seed systems used by county producers have tremendously reduced soil erosion and sediment impacts to salmon recovery efforts. This alternative to conventional tillage reduces soil disturbance by creating seedbeds and planting seeds in one field pass. However, intense soil sampling indicates that reduced tillage may have created a stratified soil pH problem through continued injection of ammonium-based nitrogen. Lab

analysis shows soil pH levels have decreased to as low as 4.2 in the seed zone (0-6"). Research indicates that soil pH levels below 5.2 reduces available soil nutrients by 50 percent.

PROJECT SUMMARY AND RESULTS This is year 2 of a multiyear, intense soil sampling program. The goal is to identify the severity of low soil pH and available nutrients, providing baseline data on soil health conditions. This project involves 36 producers, 76 field sites, 10 quality control sites, 2 labs performing sample analysis, and 2 graduate students (FTE.078). Stratified sampling and analysis has identified pH levels of 4.22-8.11 in the seed zone (0-6"). The use of agriculture lime to improve pH levels and soil nutrients is a possible solution, allowing producers to continue use of no-till/direct seed systems, improving conservation and sustainable agricultural alternatives.

KEY PARTNERS: Private landowners; WA State Conservation Commission; WSU Extension



Producer Spring Tour viewing lime application test plots post seed emergence

Other Accomplishments



Installing efficient irrigation system to return saved water (.2287 cubic feet per second) for instream use in Touchet River Watershed



Tucannon instream large wood habitat enhancement



Art and Jean Sunderland honored as lifetime natural resource enhancement pioneers

More Work to Do!

- Provide cost share to 36 producers addressing low pH/nutrient availability on production agriculture fields.
- Provide technical assistance to landowners who have been contacted by WA Department of Ecology regarding livestock-influenced water quality concerns.
- Install 2-4 salmonid habitat projects addressing Endangered Species Act (ESA) recovery efforts in the Tucannon River Subbasin.
- Provide technical assistance to producers requesting Irrigation Efficiency assessments.