

Soil Acidity on the Palouse – Digging Deeper

8:00AM-5:30PM, January 4th, 2018 Banyans on the Ridge –at the Pavilion
To register: <http://extension.wsu.edu/palouse-soil-acidity/>



Soil Acidity Beyond Lime and Aluminum Toxicity: Soil Phosphorus and Soil Health – Dr. Tabitha Brown of the Latah Soil and Water Conservation District and WSU

Tabitha Brown, in collaboration with the University of Idaho and Latah County growers, has been conducting on-farm research in liming acidic soils. She will discuss her findings on how liming effect soil aggregate stability and extractable soil phosphorous. She will compare traditional soil P extraction method typically used for Palouse soils with Haney extraction method promoted by NRCS. The Haney method was thought to be a better estimation on P sufficiency level because the test mimics root zone P chemistry. Tabitha will also briefly discuss the causes of soil acidity in Palouse are and lime management strategies.



Soil Acidity in the Palouse; What, Why, and How – Dr. Paul Carter: Extension Specialist for Columbia County

Presentation will include survey data collected in Columbia County and various other locations in the Palouse, why we have an acidity problem, and how we are going to continue farming in the future. Research results will be presented that include the use of lime applications and additional micronutrients based on the soil test results. These will include evidence of soil pH changes and wheat yield responses.



Soil and Crop Response to Liming in Northern Idaho On-farm Testing – Doug Finkelnburg: Extension Specialist for Nez Perce County & Assistant Professor at UI

Soil and agronomic responses to liming a direct seeded field in an annually cropped dryland system will be discussed. Implications for increased broadleaf and grassy weed herbicide options and crop rotation choices in the treatments with strong pH corrections vs the untreated soils will be explored.



Management Strategies Can Alleviate the Acceleration of Soil Acidification – Dr. Haiying Tao: WSU Crops and Soils Associate Professor and Nutrient Management Specialist

Nitrogen-induced soil acidification is a growing concern in wheat producing states. The soil acidification alters soil chemistry, fertility, and soil microbes, which has major effects on soil health, crop productivity, and cropping systems. The impact of acidification by N fertilization is related to both that application rate and form of N fertilizer. Although liming and soil amendments can be used to alleviate soil acidity. Applying N at the right rate, right form, right timing, and right location is a key to slow down the acidification.



Using Soil Buffer Tests to Predict Lime Requirement – Carol McFarland: WSU Department of Crops and Soil

Different soils can require very different quantities of lime to raise soil pH. Buffer Tests is a quick method that soil test labs use for recommendation for how much lime to apply. This presentation will provide an overview of how buffer tests work, and how the different tests perform on Palouse soils. The audience will come away with an increased understanding of how to use this information on their soil test reports to better understand lime requirements on their soils.

Lime Calculator: In this hands-on mini-workshop, we will provide an overview of how to use the online lime calculator provided by WSU Extension as a decision support tool (attendees are encouraged to bring tablets, laptops, or smartphones to fully participate in this workshop).



Lime Materials and Application: Dr. Dave Huggins USDA-ARS

In an interactive format, Dr. Huggins will discuss options for choosing lime materials for Palouse soils, as well as considerations such as particle size and percent calcium carbonate. Discussion will also include methods of application in no-till systems.

Panel Discussion on the Effects of Soil Acidity with:



Dr. Tara Sullivan, Assistant Professor of Soil Microbiology at WSU.

Dr. Sullivan's research focusing on the **microbial communities** in low pH, high Aluminum soils in the Palouse.



Dr. Kurt Schroeder, Assistant Professor of Cropping Systems from University of Idaho.

Dr. Schroeder has a broad knowledge in liming in the growers' field, crop performance in low pH soils, and how low soil pH effect **soil born disease**.



Dr. Drew Lyon, Professor and Endowed Chair of Small Grains Extension and Research, Weed Science at WSU.

Dr. Lyon has in-depth knowledge in the effects of soil pH on **herbicide resistance and efficacy**.



The Economics of Low pH Soils – Dr. Kate Painter: Extension Educator for the University of Idaho in Bonner's Ferry

Dr. Painter will use data from the research of Dr. Paul Carter and Dr. Kurt Schroeder to unpack the economic landscape of soil acidity on the Palouse. The talk will discuss the trade-offs between liming or not, as well as material choice, application rate, and how to frame the investment for liming in terms of farm capital.