

13th International Conference on

Agriculture & Horticulture

September 10-12, 2018 | Zürich, Switzerland

Amending acidic soils for sustainable wheat production

Paul Glen Carter

Washington State University, USA

Soils in the Inland Pacific Northwest region have been gradually declining in quality as the result of applications of nitrogen fertilizers, regardless of the nitrogen form. Soil test reports evaluated in the 1980's and 90's indicated this decline. Recent surveys have provided more extensive data that the pH decline is continuing. Soil test reports indicate that nearly 90% of soils have declined to below 5.2 pH (strong to very strongly acid) in the surface layer of the soil profile. As a result of the recent survey, research plots (minimum tillage) were established with lime (CaCO_3) treatments to raise the soil pH. Lab reports indicated nutrient deficiencies of Copper (Cu), Zinc (Zn), and Boron (B) which were supplemented. Farmer fields in the region, where micro-nutrients are normally applied, have shown rapid response to liming; soils lacking micro-nutrients were less responsive. Lime was applied in the spring (Plot "T") and fall (Plot "P") of 2014 with micro-nutrients applied in the fall of 2015. Plot P was seeded with soft white winter wheat in fall 2015 and Plot T was seeded with soft white spring wheat in spring 2016. Plots were harvested August 23, 2016. Plot P and T both recorded yield increases, 7% and 17.6% respectively, for strips treated with lime and nutrients compared to un-treated strips.

cart@wsu.edu