



Soil Testing Summary Write-up for Goertz Ranch 2 SW Pasture

- **Rancher Name (can be kept confidential if desired):** Harvey Goertz
- **Location:** South of Elk Mountain; Southwest corner
- **Date of Soil Tests:** May 6th, 2020
- **Agricultural Use(s)** (e.g. dryland hay, alfalfa, grazing, etc.): dryland hay; grazing
- **Challenges and Conservation Objectives (as presented by producer):** Portions of the fields have been under producing pasture grasses. There is concern that soil health is a factor in this.
- **Summary of Comprehensive Soil Test Results:** Test results showed fertile soils; the soil fertility score integrates nutrient status with the soil health score. This correlates closely with sustainability of crop production. The soil health score was slightly low for the region indicating lower, key biological traits. A high overall fertility score and a low soil health score indicate a heavy fertilized soil that is not being optimized for biology. CO₂ respiration is 67.8 ppm and SLAN amino-N is 96 ppm, this indicates the probability that soils will respond to increasing Nitrogen is moderate. The Phosphorus storage is above normal while the Swiss CO₂-Equilibrium P is low. The soluble (or available) Nitrogen is 5 ppm which is low while the estimate biological N is 68 ppm and total potential Nitrogen is 77 ppm which are considered optimal. The soil bulk density is 1.01 which is optimal. Bulk density is affected by geologic parent material, sand, silt and clay. It is influenced by humus and microbe rate. The VAST aggregate stability score is 32 which is medium. Aggregate stability depends on amount of sand vs. silt vs. clay as well as organic matter. The organic matter rating is 4.53 which is considered relatively high. The water-soluble Carbon and the water-soluble C:N ratio are optimal. The ratio of K (Potassium) to Ca + Mg (Calcium and Magnesium) is optimal which is an important score for animal grazing health. Soil pH is 6.65. Most plants are not affected by soil pH unless it is very high or very low.



- **Technical Interpretation by NRCS Relative to Conservation Objectives:** Phosphorus and Potassium are quite high; above optimal storage-P may indicate accumulations from excessive P in fertilizer or manures, called “legacy P”. It may also be from parent soil materials. However, the Equilibrium P is considered low which indicates that Phosphorus available to plants is low meaning that they may benefit from some fertilizer application. Soluble Nitrate is low which indicated that soils will likely respond to Nitrogen application. All other scores are medium or optimal and no limiting factor has been identified.

- **Recommended Practices:** The producer currently grazes horses and cattle in this field. There is concern about planting a high legume concentration in regard to bloating in the cattle and overly high nutrient intake in the horses. At this time the soil health test indicates that the field may show higher yields if a fertilizer is applied following CSU guidelines. Though, there are no limiting factors so the producer may want to hold off on this for now. In order to optimize the other portions of the pasture, cross fencing may be installed for a rotational grazing operation to increase yields and allow for nutrient cycling.

- **Practices Put in Place:**

- **Follow up:**
 - **Date:**
 - **What is working:**
 - **What is needed:**