Fighting Unproductive Areas with Awareness

The Situation
Many fields in ND that have uniform crop stands may also include white barren headlands along county-roads, drainage ditches and areas with poor growth. These areas have high salt and sodium issues that result in no or low germination and produce poor crops. Roughly, North Dakotans spend $79.90, $84.42, $130.03 and $160.38/acre as a direct cost to plant soybeans, spring wheat, canola and corn respectively. Planting these crops in the marginal areas results in net loss/acre for the farmers. This loss could be avoided by sampling and testing soils for salts and sodium issues and responding accordingly.

Extension Response
Soil sampling to assess levels of salts and sodium requires three-four feet deep samples. Soil labs will then analyze samples for Electrical Conductivity (for salts) and Sodium Adsorption Ratio (for sodium). Since crops greatly vary for their salt-tolerance, being aware of the actual EC levels will help landowners plant suitable crops on fields. Similarly, soils with high SAR will require application of an amendment like gypsum and may require planting a perennial salt-tolerant grass-mix. By adopting these practices on saline-sodic areas, landowners will save planting costs along with starting the remediation processes. The NDSU Soil Health team wrote a special publication, “Soil Testing Unproductive Areas”, which provided in-depth information regarding soil sampling, testing and the differences in the testing methods. The publication was used by providing the information to the extension agents, landowners and crop advisors during workshops, field tours and through social media. Increased awareness produced an increased flow of telephone calls, office visits and email communications by 125 landowners and other stakeholders. Fifteen landowners were also helped with soil sampling by the Langdon Research Extension Center Soil Health Specialists in a five-county area. Sampling was followed by explanation of the lab results and recommendation of remediation practices.

Impacts
After attending the soil health programs, 85% of the participants, described the importance to sample and analyze their unproductive areas for salt and sodium issues as “important to very important”, before investing in planting. Initially, they viewed it as little to moderately important.

Feedback
• “This information is a breath of fresh air”.
• “I feel more informed now and know what is best for my land”.
• “Learning how to overcome and manage the issues is a key”.

Public Value Statement
North Dakota’s greatest natural resource is its land and soil. By managing the amount of salt and sodium in the soil through improved farming practices, productive land will be available for future generations.

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