

**A LITTLE BIT COUNTRY  
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**Wheat Show Proclaimed a Success**

The 59<sup>th</sup> National Hard Spring Wheat Show is history. Being heavily involved, along with over 20 other farm producers, agri-businesses, and NDSU Co-workers, I may be a bit biased in proclaiming the event a total success starting with the Bread Fair which focused on teaching area 5<sup>th</sup> grade students how to make bread. The instruction started by showing the students where the flour comes from and some of the steps in processing wheat into white and whole wheat flours. At first it appeared a daunting task to get the attention of nearly 350 5<sup>th</sup> graders. I soon realized that Heather Wisness, NDSU Family Nutrition Agent serving Williams and McKenzie Counties, has a special skill-set that captivates the eyes and ears of young people.

Through the use of special audio and visual materials, this very large group of energetic youth, were able to witness, step-by-step, how flour, yeast, water, honey, dry milk and salt were mixed to form the dough. Each had an opportunity to learn how the dough was kneaded. After the nearly two hour learning experience, everyone took home a pan of dough for baking.

This was the 29<sup>th</sup> consecutive year for the Bread Fair. Using a conservative annual participation of 300 we can accurately say over 8,700 students from this area have not only learned the basics of bread making, but are also aware of why wheat is important and how flour is made.

**Healthy Soil**

All of the educational sessions during the Wheat Show were well attended but Jim Hoorman of Ohio State University served to captivate the audience with his presentations on soil health. He started by telling us healthy and sick soils each have things in common. He described healthy soils as having: 1) live plants growing year around to absorb energy and 2) healthy microbial populations which process 90 percent of the energy in soils whereas sick soils

tend to have compaction problems, high bulk density, poor water infiltration, poor water holding capacity, bare soils, and low organic matter.

Hoorman stressed the importance of roots and their contribution to organic matter. They are crucial for moisture and nutrient uptake for the plant and are the pipeline of life for both the plant and microorganisms in the soil. He stated that the majority of organic matter comes from roots. But, to achieve root growth we must promote vegetative (above ground) growth. This can be accomplished by mimicking natural vegetation through continuous cropping and the use of cover crops.

Hoorman cited a comparison of organic matter content of conventionally tilled and long term no-till soils in Ohio. He showed conventionally tilled soils in Ohio as having 1-3 percent organic matter with a plow layer of 8-10 inches and microbial life dominated by bacteria. I found the organic matter level to be quite similar if not a little high in comparison to soil samples area growers submitted to NDSU for nutrient testing. My office no longer receives a copy of the NDSU test results so I cannot make a modern-day comparison since we have shifted to continuous cropping systems. Back in the 80's and early 90's almost all of the soil test reports showed organic matter to be in the 1.5 to 2.5 percent range on cropland.

Soil organic matter levels on long-term no-till soils in Ohio is now reported to be at the 4-6 percent levels. This is approaching levels which we find in North Dakota native soils. Hoorman reports other benefits on these soils including high residue on the surface, macropores throughout the soil profile, and the microbial life is no longer dominated by bacteria but now includes plenty of fungi.

There is much more to Hoorman's recipe to increasing soil health. For more details go to our website at [www.ag.ndsu.edu/williamscountyextension](http://www.ag.ndsu.edu/williamscountyextension). On the left side of the page, click 59<sup>th</sup> Annual Hard Spring Wheat Show and scroll to the bottom of the page for direct links to Hoorman's publications.