

News Column

by Greg McClure, KSU-Riley County Extension Agriculture Agent
110 Courthouse Plaza
Manhattan, KS 66502

For Release 07/16/18
Phone: 785/537-6350
Fax: 785/537-6353

NUTRIENTS IN WHEAT STUBBLE

Having three kids who will be in high school this coming year has caused me to reflect on my high school years and wonder what I was like at that age. I don't have to wonder long though; I really haven't changed much. I was sort of nerdy then, and I proudly still wear that title today.

My kids are all more outgoing than I was in high school, and they are involved in different activities, yet I see similarities in their lives and mine. Two of my kids are band geeks and, while I wasn't in band, the geek label probably would have fit.

One of my girls is a cheerleader and a dancer. It's a real stretch to find similarities there, but we are alike in that we both spend our time cheering instead of competing in athletics.

I was never much of an athlete. Instead, I spent my extra time involved in 4-H and FFA. I loved my animals so much that I even rode the bus home so I could get there sooner to do my pig chores. I could have ridden home with Mom after 5:00, but I could get to the farm by 4:15 if I rode the bus, so that's what I did.

In the classroom, I was one of just a handful in our class who took four years of math. Or, maybe it was two hands full. I recall there being four boys in our senior match class. There must have been at least that many girls too.

The point of all of this is that I have always liked math. If you read this column regularly, you may have noticed that I sometimes get carried away proving my point with numbers.

This week's math lesson takes us to your wheat field where your 50 bushel per acre wheat yield probably produced about 5,000 pounds of wheat straw. Those 5,000 pounds of straw contain about 27 pounds of nitrogen, 7.5 pounds of phosphorus, 37.5 pounds of potassium, and 5 pounds of sulfur.

To put a value on the nutrients in 5,000 pounds of wheat straw, I used 32 cents per pound for N, 34 cents per pound for P_2O_5 , 32 cents per pound for K_2O , and 42 cents per pound for S. For those who may have forgotten their chemistry and fertilizer lessons, N is nitrogen, P_2O_5 is phosphorus, K_2O is potassium, and S is sulfur.

Feel free to check my math, but I calculated the value of the nutrients in 5,000 pounds of straw to be \$25.29. Converting to a per ton basis, that's about \$10.12 per ton of straw.

If you baled straw from your wheat fields, you wouldn't have removed all 5,000 pounds, so the per acre value of nutrients removed will vary, depending on cutting height. The per ton value won't change though, so you can estimate the amount of nutrients removed by counting bales and weighing a few of them to get an average weight.

There are a couple of areas in the state where producers still burn wheat stubble. When wheat stubble is burned, phosphorus and potassium will remain in the ash and will stay on the field. However, about 1/3 to 1/2 of nitrogen and sulfur will combust and leave the field.

Continuing with today's math assignment, we can calculate that about 10-13 pounds of nitrogen and 2 to 2.5 pounds of sulfur would go up in smoke if you burned the stubble from a field that yielded 50 bushels of wheat per acre. The fertilizer value of those lost nutrients is between \$4.04 and \$5.21 per acre.

While I am opposed to burning wheat stubble, I am not opposed to baling straw and adding anhydrous ammonia to turn it into quality cow feed. Ammoniating wheat straw will be

the topic of this column in two weeks. If you have questions before then, please call.

If you have questions, you can reach me at the Riley County Extension Office at 785/537-6350. Or, you can send e-mail to gmcclure@ksu.edu.

K-State Research and Extension is an equal opportunity provider and employer.