

News Column

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

For Release 07/11/22
Phone: 785/537-6350
Fax: 785/537-6353

Wheat Straw Value

My great aunt Elsie once told me she would entertain herself by doing addition and multiplication tables in her mind. She was in her 80s and I was a teenager at the time.

Consequently, I thought she was really strange.

Aunt Elsie was married to my uncle Theron, my grandfather's brother. Theron's middle initial was W and he often went by the moniker, T. W. Jackson.

I was far too old before I learned that Theron's middle name was William. For the longest time I thought T. W. Jackson was a shortened version of what people called him when he wasn't around,...Tight Wad Jackson.

T. W. and Elsie Jackson were a good match. He was a big, heavy man, and a bit gruff. She was a tiny, thin women and a bit sour. What they shared was an ability to hang onto money. Word on the street was that the estate was worth \$8 million when she died about 35 years ago.

She probably had the amount of the estate added up in her head.

I don't sit around doing multiplication tables in my head, but I do kind of like math. Unlike a couple of my children, I keep track of how much money is in my checking account, and I reconcile by check register with my bank statement every month.

I'm the guy who has the restaurant bill totaled in my head before the check arrives, and I can figure a 20% tip without looking at the "suggested" amount on the ticket. And, I'll be honest here. I used to figure a 10% tip,...before my daughter started waiting tables....

Any opportunity to do a little math is an opportunity for some fun. So, when I started looking up some numbers to calculate the value of the nutrients in a ton of wheat straw, my day suddenly got better.

We often talk about the value of crop residue for preventing soil erosion, reducing evaporation, preventing soil crusting, and improving water infiltration, but those qualities are a bit difficult to quantify in dollars and cents. Residue may be more valuable for those reasons than for the nutrients it contains, but today let's focus on the nutrients in wheat straw.

Each ton of wheat straw contains about 11 pounds of nitrogen, 3 pounds of phosphorus, and 15 pounds of potassium. If we take those nutrients off by baling and removing the wheat straw, we need to replace them with an equal amount of commercial fertilizer.

So, let's look at the value of those nutrients as commercial fertilizer. Fertilizer prices are high this year, so this year's nutrient value will be much higher than it would have been a year ago. We'll do the math with N at \$1 per pound, and P_2O_5 and K_2O each costing \$0.75 per pound.

This is pretty easy math. Eleven pounds of N would cost \$11. Three pounds of P_2O_5 would cost \$2.25, and 15 pounds of K_2O would cost \$11.25. The total value of the nutrients in a ton of wheat straw comes to \$24.50.

With just a little more math we can calculate the value of all the residue left behind after wheat harvest. Wheat will produce about 102 pounds of residue per bushel of grain yield. Therefore, a 50 bushel per acre wheat crop should leave roughly 5,000 pounds of residue per acre on the field.

Now we just take \$24.50 times 2 ½ tons per acre, and the estimated value of the nutrients in the residue after harvesting a 50 bushel per acre wheat crop is \$61.25.

I'm tired of math now, so I'll stop here,...and go balance my checkbook.

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.