

NUTRIENT REMOVAL



2024 certainly did not set any yield records. At best it could be described as an uneven year, with only a few pockets of good production. For the most part, producers in east central Alberta were dealing with yields well below what they have come to expect over the last few years. With these lower yields comes a lot of discussion around how increased nutrient carryover will impact 2025 fertilizer plans. Given the imbalance between input and commodity prices right now, it's tempting to cut a few corners on costs going into next year. And it's a reasonable expectation that the fertilizer bill could be a good place to start looking. However, crop nutrition is too important to just guess how much, or even if, fertilizer rates should be adjusted next year. And there is really no need for this decision to be a stab in the dark, as there are a couple of excellent tools available to help figure this out.

The most accurate method of course is soil testing. Ideally, soil testing is done every year at the same time to establish a year to year measurement of season ending nutrient levels. If you haven't done any soil testing this fall, I would urge you to at least do a few fields in the spring to confirm your nutrient plan. Another available (and free) tool is to measure nutrient removal based on crop yield. If your average wheat yield is 65 bushels/acre and your wheat yielded 40 bushels this year, it's easy enough to calculate the 2024 nutrient removal compared to the normal removal for each field/farm, and use the removal rates as a rough guideline to help adjust next year's input plan.

There are several online tools available to assist in calculating nutrient removal, but by far my favourite one is that offered by the University of Saskatchewan. They recently undertook a massive 3 year survey of nutrient removal rates of Prairie crops. These updated calculations are based on the latest varieties, which often have a better nutrient use efficiency than older varieties. As you can see by the example, the table also includes micronutrient removal, which is often not available on other calculators. Keep in mind that the tool only calculates nutrients removed with the seed, so if you bale straw, removal rates may be much higher. Also, a crop's nutrient uptake rate can be impacted by environmental conditions during the growing season, so while the numbers generated will be close, they only represent the midpoint of a range of possible removal rates. They do not constitute a recommendation.

The screenshot shows the 'Crop Type' selection menu on the left with 'Canola' chosen. The main area displays 'Selected Crop: Canola' and a large '30' representing the yield, with a text input field below it also containing '30'. A note says 'Adjust the yield to your nutrient removal rate'. On the right, a table titled 'NUTRIENT REMOVAL (lb/acre)' lists the following values:

Nutrient	Removal Rate (lb/acre)
N	56
P ₂ O ₅	23
K ₂ O	11
S	7
B	0.017
Cu	0.007
Zn	0.055

The calculator is available at <https://prairienutrientcalculator.info/> and is an excellent first step to getting a handle on how much of each nutrient left your fields this fall.

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