

How much fertilizer are you throwing away?

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Ask a farmer what their yields were last fall and they can probably show you a yield map of their fields. At the very least, they can give you an average yield. But how many turfgrass managers know their annual clipping yield? I must admit, I wouldn't be able to tell you the yield of the research greens at UNL. It's just not something that we think about, but should we?

One advantage of measuring clipping yield, or volume, is that we can use it to estimate how much nutrient was removed during mowing during a season. That information can then help guide nitrogen fertilizer additions.

The math isn't that difficult. One gallons of clippings weighs roughly 0.33 pounds after the clippings are dried and the topdressing sand is removed. Creeping bentgrass tissue is roughly 4% nitrogen by weight. So, removal of 100 gallons of clippings from a putting green also removes roughly 1.3 lbs. of nitrogen from that green.

Example scenario:

- Manager decides to measure clipping volume daily from a 5,000 sqft putting green.
- The manager applied 1.5 lbs. N/1000 sqft over the whole season
- At the end of the year, 750 gallons of clippings were removed from that green
 - Divide by 5 to get the number of gallons per 1000 sqft = 150 gallons removal
 - Convert to lbs.: 150 gallons x 0.33 lbs. per gallon = 49.5 lbs.
 - Multiply by 4% to estimate N removal: 49.5 lbs./1000 sqft *0.04 = 2.0 lbs N/1000 sqft
- The manager only applied 1.5 lbs/1000 sqft, but removed 2.0 lbs/1000 sqft. That means the soil bank of nitrogen provided that additional fertilizer and that the amount of nitrogen in the soil had to go down. Think of it like a bank account; you withdrew \$200 but only deposited \$150, so the bank balance went down by \$50. This isn't sustainable fertilization.

Based on our years of PGR clipping yield research, we estimate mowing removes between 0.06 and 0.14 lbs. of nitrogen every week during mowing. That is the most significant source of N loss and drives fertilization requirements.

This is why we promote returning grass clippings wherever possible. Those clippings contain a significant amount of fertilizer. **Please** don't start collecting and removing your clippings to only measure yield. If you **have** to collect clippings (i.e. golf or sports turf), then recording how much volume you've removed over the entire season can help you estimate the amount of fertilizer you are throwing away.

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