**Leaf It Alone?**

**Introduction**

Congratulations! You have designed a study, built elevated litter traps, maintained the traps, and now collected the leaf litter and dried it!

As a reminder, our overall goal for this study is to estimate the amount of nitrogen (N) contained in leaf litter, estimate the costs associated with replacing this N with fertilizers should the leaf material be removed, and finally to compare our campus data with other ecosystems in other regions.

Follow the directions below to complete the study:

*1. Sort the Litter*

Sort the litter collected in your litter trap into the following piles:

* Leaves (to be sorted by species next)
* Fruit, twigs, bark

Sort the leaf pile by species:

* The dominant species in our sampling area are:
  1. Black walnut (*Juglans nigra*):



* 1. Sugar maple (*Acer saccharum*):



* 1. American beech (*Fagus grandifolia*):
  2. American basswood (*Tilia americana*):

2. *Mass the materials within each pile*

1. *Estimate the total N content (in grams) of the samples* 
   * Multiply the mass of each species’ leaves by the corresponding N content (%) obtained from:
     + Ostrofsky, ML. 1997. Relationship between chemical characteristics of autumn-shed leaves and aquatic processing rates. Journal of North American Benthological Society 16 (4): 750-759

The total N content of my leaf litter trap is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g/trap

=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_g/m2

The average N content across all leaf litter traps is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g/trap

=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g/m2

1. *Estimate the cost of replacing the N content of the leaves with fertilizer should the leaves be removed*
   * If the cost of a 12 kg container of 20-0-0 fertilizer (N-P-K; means 20% N by weight) is $23 at Tractor Supply, what is the cost per gram of N? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ $/g N
   * Our study area is \_\_\_\_\_\_\_\_\_\_ m2
   * What is the cost to replace N lost if leaves are removed from our study area?

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* + Our campus area is \_\_\_\_\_\_\_\_\_\_m2
  + What is the cost to replace N lost if leaves are removed from across campus?

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