

Water Quality Enhancement Activity– KS-WQL10 Plant an Annual Grass-type Cover Crop That Will Scavenge Residual Nitrogen

Kansas Criteria for National Water Quality Enhancement Activity – WQL10

The following method can be used to estimate the amount of nitrogen (N) to be credited to the next crop:

To estimate yield, take cuttings from several areas in the field. Dry and weigh them. Use a yardstick or metal frame (of known dimensions or 1 ft x 2 ft, which equals 2 square feet works well) and clip the plants at ground level within the known area. Dry them in the sun for a few consecutive days, or use an oven at about 140° F for 24 to 48 hours until they are “crunchy” dry. Use the following equation to determine per-acre (ac) yield of dry matter:

$$\text{Yield (lb.)/Acre} = \frac{\text{Total weight of dried samples (lb.)}}{\text{\# square feet you sampled}} \times \frac{43,560 \text{ sq. ft.}}{1 \text{ Acre}}$$

While actual sampling is more accurate, you can estimate your yield from the height of your green manure crop and its percent ground cover. Use these estimators: Cereal rye weighs approximately 2,000 lb/ac of dry matter at an 8-inch height and 100 percent ground cover. For each additional inch, add 150 lbs and multiply by (percent ground cover/100). For most small grains and other annual grasses, start with 2,000 lb/ac at 6 inches and 100 percent ground cover. Add 300 lbs for each additional inch and multiply by (percent ground cover/100).

The following rule of thumb can be used to estimate total N contained within the dry matter. Most cover crop grasses contain 2 to 3 percent N before flowering and 1.5 to 2.5 percent after flowering.

$$\text{Total N in cover crop in (lb/ac)} = \text{yield (lb/ac)} \times \frac{\% \text{ N}}{100}$$

Keep in mind that these are *rough estimates* to give you a quick guide for the productivity of your cover crop. To know the exact percent N in your plant tissue, you would have to send it to a lab for analysis.

To estimate the amount of N that will be available for your current crop, take the estimated total N in the cover crop time 30 percent to be used as credited N.