

Table 3. Nitrogen credit for legume straw (residue) breakdown.

Residue	N credit
(tons)	(lb/acre)
0	0
0.5	3
1	6
1.5	9
2	12
3	18
4	24

Note: One ton of legume residue is produced from 1,000 pounds of lentil or pea grain produced.

Table 4. Mineralizable N release rates for northern Idaho soils.

Organic matter content	N released during growing season
(%)	(lb/acre)
Less than 2	25
2 to 3	45
3 to 4	60
More than 4	75

—Northern Idaho soils release mineralizable N (N contained in organic matter) in proportion to their organic matter contents (Table 4). Low levels of mineralizable N are released from soils on severely eroded clay knobs and hilltops, soils in cutover timberlands, soils in areas of low precipitation, soils with low water-holding capacities, and soils with low organic matter contents.

—You can evaluate the amount of inorganic N in the soil most effectively with a soil test. Take soil samples from the crop's entire rooting depth because nitrate-nitrogen ($\text{NO}_3\text{-N}$) is mobile in soil. Spring canola is capable of efficiently removing N to a depth of 3 feet or more unless its roots are blocked by a restricting layer.

Soil test values include both $\text{NO}_3\text{-N}$ and ammonium-nitrogen ($\text{NH}_4\text{-N}$) in the first foot of the soil profile. $\text{NO}_3\text{-N}$ should be sampled in 1-foot increments to the crop's effective rooting depth. To convert soil test $\text{NO}_3\text{-N}$ and $\text{NH}_4\text{-N}$ values in parts per million (ppm) to pounds N per acre, add the N values in ppm for each foot increment of sampling depth and multiply by 3.5 (Table 5).

Table 5. Calculation to convert N soil test results in parts per million to pounds per acre.

Depth	Soil test results	
	$\text{NO}_3\text{-N}$	NH_4

N and K (as K_2

organic matter mineralization
fertilization rates are often slightly
tillage systems.

Further reading

BUL 704, *Soil Sampling*, \$2.00

CIS 1085, *Essential Plant Micronutrients of Idaho*, \$3.00

CIS 1088, *Essential Plant Micronutrients of Idaho*, \$3.00

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