

ASBC Approved Methods Brewers' Grains – 7

Calculation of percent total nitrogen (%N) of the sample is usually performed by the integrator of the instrument, using the formula shown below. The formula assumes that baseline correction is available and used by the integrator. If baseline correction is not available, then the area of the blank will not be used in the calculation.

$$N, \% \text{ as-is} = \frac{(A_s - A_b) \times RF}{W_{\text{sam}}}$$

$$\text{Protein, \% as-is} = \%N \text{ as-is} \times 6.25$$

$$\text{Protein, \% dry basis} = \frac{\% \text{ protein, as is} \times 100}{100 - \%M}$$

Protein By Combustion

<input type="text"/>	A_s = area counts of sample
<input type="text"/>	A_b = area counts of blank
<input type="text"/>	RF = response factor
<input type="text"/>	W_{sam} = sample weight
<input type="text"/>	M = moisture

Result

<input type="text"/>	N, % as-is
<input type="text"/>	Protein, % as-is
<input type="text"/>	Protein, % dry basis

$$N, \% \text{ as-is} = \frac{(1,021 - 35) \times (2.09 \times 10^{-4})}{0.2020} = 1.02$$

$$\text{Protein, \% as-is} = 1.02 \times 6.25 = 6.38$$

$$\text{Protein, \% dry basis} = \frac{6.38 \times 100}{100 - 82.1} = 35.64$$