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Comparison of kjeldahl and dumas methods for determining protein contents of soybean products

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Abstract

The Kjeldahl and Dumas methods for quantifying nitrogen content were compared using nine soybean products having protein contents ranging from 0.5 to 90%. In addition to comparing day-to-day variability of the Dumas method, differences between and variabilities of two Kjeldahl systems and Kjeldahl operators were also evaluated. The Kjeldahl method gave slightly, but significantly, lower values than did the Dumas method. Both the Kjeldahl and Dumas methods had equivalent variabilities (same SD about the means). The ratios between the means for the Kjeldahl and Dumas (K/D) protein values ranged from 0.66 to 1.03. The conversion equation $y=-0.00536+0.97188x$ ($R^2=0.9997$) was developed and validated to convert from Dumas to kjeldahl protein concentrations.

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