

Water Content in Green Coffee: Comparison of Methodologies

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SUMMARY

The main objective of this study was to correlate methods for water content evaluation in green coffee based on oven drying to Karl Fischer titration (KFT). The methodologies evaluated were (i) ISO 6673 (16h drying at 105 °C) and (ii) the reference method employed by the Brazilian Agriculture Ministry (24 h drying at 105 °C) using both whole (BAMw) and ground (BAMg) coffee beans. Reference oven drying methodologies ISO 6673 and BAMw presented results statistically equivalent ($p > 0.05$) to those from KFT in the moisture content range that is of interest for green coffee commercialization (8-13% w/w). Both methodologies also correlated well (0.99 correlation coefficient) to KFT. However, for coffee samples that were submitted to drying procedures, significant differences between KFT and ISO 6673 and BAMw measurements were observed, with both oven drying methodologies providing higher moisture content values than KFT. Regarding the effect of grinding on method performance, lower average moisture contents were observed for all ground coffee samples (BAMg) compared to whole beans (BAMw). Nonetheless, significant differences ($p < 0.05$) only occurred for the samples that undergone drying (7-5% w/w moisture content range).