

Moisture Determination in Green Coffee – A Method Comparison

C.T. REH, A. GERBER, J. PRODOLLIET, G. VUATAZ

Nestlé Research Center, Vers-chez-les-Blanc, CH-1000 Lausanne 26, Switzerland

SUMMARY

Green coffee behaves very differently at high and low moisture content with a number of unwanted consequences like microbial growth, mycotoxin formation, altered sensorial quality of end product, instable production conditions and unclear trade issues. Generally a moisture content ranging between 8.0-12.5% is considered to be adequate to avoid the mentioned issues. ISO has therefore issued a number of standards for reference, routine and rapid methods. Nevertheless, on-going discussions on how effective the methods are capable to principally determine the moisture content lead to modifications of the official approach. This work was therefore focused on clarifying the specificity and accuracy of several available methods. We could demonstrate that only ISO 1446 (2001) exclusively measures water but leaves some residual water content difficult to extract from the dried coffee matrix. For all drying oven based methods we observe degradation of the product contributing to the overall weight loss. We used near infrared spectroscopy to establish the degree of degradation and the completeness of the drying process. Repeatability was found excellent for all methods despite degradation and incomplete drying which should negatively affect accuracy.