Supplementary Material for:

A simple and reliable calibration method for direct analysis of ground-roasted coffee by portable XRF: an accurate analytical tool for Total Diet Studies

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**Figure S1** - Calibration curve using CRM for P determination by pXRF (equipment 1 at 15 kV and 16.2 µA).

**Figure S2** - Calibration curve using CRM for P determination by pXRF (equipment 2 at 15 kV and 16.2 µA).

**Figure S3** - Calibration curve using CRM for K determination by pXRF (equipment 1 at 15 kV and 16.2 µA).

**Figure S4** - Calibration curve using CRM for K determination by pXRF (equipment 2 at 15 kV and 16.2 µA).

**Figure S5** - Calibration curve using CRM for Ca determination by pXRF (equipment 1 at 15 kV and 16.2 µA).

**Figure S6** - Calibration curve using CRM for Ca determination by pXRF (equipment 2 at 15 kV and 16.2 µA).

**Figure S7** - Calibration curve using CRM for Mg determination by pXRF (equipment 1 at 15 kV and 16.2 µA).

**Figure S8** - Calibration curve using CRM for Mg determination by pXRF (equipment 2 at 15 kV and 16.2 µA).
**Figure S9** - Calibration curve using CRM for P determination by pXRF (equipment 1 at 50 kV and 15.8 µA).

**Figure S10** - Calibration curve using CRM for P determination by pXRF (equipment 2 at 50 kV and 15.8 µA).

**Figure S11** - Calibration curve using CRM for K determination by pXRF (equipment 1 at 50 kV and 15.8 µA).

**Figure S12** - Calibration curve using CRM for K determination by pXRF (equipment 2 at 50 kV and 15.8 µA).

**Figure S13** - Calibration curve using CRM for Ca determination by pXRF (equipment 1 at 50 kV and 15.8 µA).

**Figure S14** - Calibration curve using CRM for Ca determination by pXRF (equipment 2 at 50 kV and 15.8 µA).

**Figure S15** - Calibration curve using CRM for Mg determination by pXRF (equipment 1 at 50 kV and 15.8 µA).

**Figure S16** - Calibration curve using CRM for Mg determination by pXRF (equipment 2 at 50 kV and 15.8 µA).
Figure S17 - Calibration curve using ICP OES data for P determination by pXRF (equipment 1 at 15 kV and 16.2 µA).

Figure S18 - Calibration curve using ICP OES data for P determination by pXRF (equipment 1 at 50 kV and 15.8 µA).

Figure S19 - Calibration curve using ICP OES data for P determination by pXRF (equipment 2 at 15 kV and 16.2 µA).

Figure S20 - Calibration curve using ICP OES data for P determination by pXRF (equipment 2 at 50 kV and 15.8 µA).

Figure S21 - Calibration curve using ICP OES data for K determination by pXRF (equipment 1 at 15 kV and 16.2 µA).

Figure S22 - Calibration curve using ICP OES data for K determination by pXRF (equipment 1 at 50 kV and 15.8 µA).

Figure S23 - Calibration curve using ICP OES data for K determination by pXRF (equipment 2 at 15 kV and 16.2 µA).

Figure S24 - Calibration curve using ICP OES data for K determination by pXRF (equipment 2 at 50 kV and 15.8 µA).