DEVELOPMENT AND VALIDATION OF A METHOD FOR ANALYSIS OF GLYPHOSATE RESIDUES IN MADE TEA(*CAMELLIA SINENSIS*) USING LC-MS/MS TECHNIQUE

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By

SAMANTHY YOGENDRARAJAH

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Faculty of Animal Science and Export Agriculture

Uva Wellassa University of Sri Lanka

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ABSTRACT

Tea (*Camellia sinensis (L.) O. Kuntze*) is one of the most popular beverages all over the world. The tea industry has become a vital component in the Sri Lankan economy as tea became one of the major agricultural exporting commodities. Up to date, no method hasn't been succeeded in glyphosate residue analysis in black (made) tea in Sri Lanka. This study was conducted to find an accurate and precise method for Glyphosate residue analysis in black tea. A liquid chromatography - tandem mass spectrometry (LC-MS/ MS) method was developed to determine Glyphosate residues in black tea using XSelect PFP HSS column. The linearity of the detector response with a coefficient of determination (R^2) of more than 0.995 was demonstrated in the range of 0.1 to 50 mg/kg(ppm) for the analyte. Accuracy measured in terms of recovery were between 70%-120% and precision (Relative standard deviation or RSD % $\leq$ 20%) were evaluated at the fortification levels of low, mid and high in three replicates in black tea samples. This method has advantages such as simpler sample preparation and faster chromatographic analysis.

Keywords: Glyphosate residues, black(made) tea, LC-MS/MS, Residue analysis