

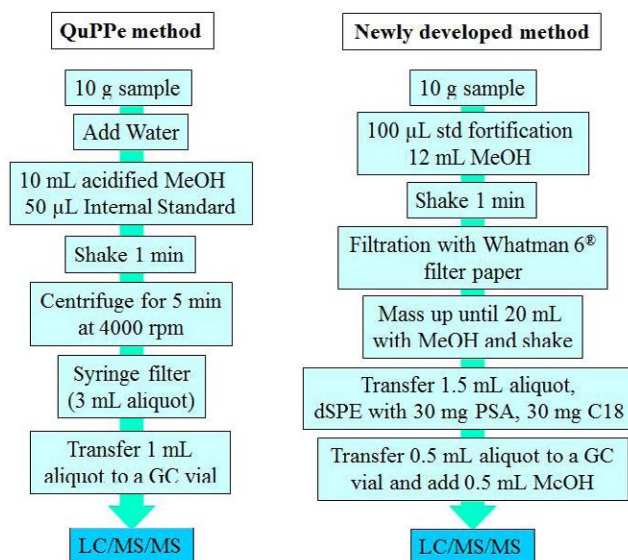
CHROMATOGRAPHY

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An effective methodology for analyzing dinotefuran and its metabolites in plum using liquid chromatography-tandem mass spectrometry

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A simple and effective method was developed for analyzing dinotefuran and its three metabolites, MNG, UF, and DN in plum using liquid chromatography-tandem mass spectrometry. Due to polarity and high water miscibility, dinotefuran and some of its metabolites were difficult to extract using acetonitrile and salt following QuEChERS sample preparation methodology. Therefore, sample was extracted with methanol, and purified with dispersive solid phase extraction procedure (d-SPE) using primary secondary amine (PSA) and C18 sorbent after filtration, and marked up. Due to the suppression effect from plum matrix, a matrix matched calibration curve was constructed for all of the analytes which provided good linearity with determination co-efficient $R^2 \geq 0.998$. Method was validated after fortification of two different standard concentrations (10 X LOQ and 50 X LOQ) into control plum matrices with three replicate for each of the concentration. Acceptable recovery was observed for each of the fortified analytes and was ranging between 83.01 and 110.18% with relative standard deviation (RSD) ≤ 8.91 . The method was successfully applied to field-incurred plum samples and dinotefuran and all of its metabolites were found as residues. The method can be extended to those polar compounds which have solvent and partitioning problems in any of the versions of QuEChERS.



Biography

Md Musfiqur Rahman is a Postdoctoral Research Fellow at Chonnam National University, South Korea. He is an author/co-author of 60 articles published in prestigious international journals with good impact factors. He is working on method development of pesticide/antibiotics and their metabolites residues in fruits, vegetable, and livestock product. His aim is to make methodology more simple and effective utilizing latest chromatographic technique.

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