



**Development of an Analytical Method for  
Determination of Highly Polar Pesticide Residues In  
some Food Products**

**Thesis Submitted**

**By**

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2011**

**In the Partial Fulfillment for the Requirement of the Master  
Degree in Chemistry**

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## **Abstract**

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**Title of the thesis:** Development of an Analytical Method for Determination of Highly Polar Pesticide Residues In some Food Products.

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A new simple, easy, fast and cheap modified QuEChERS procedure for the determination of diquat in potatoes using reversed phase liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS) in a total run time of 10 min was developed. Different sample preparation parameters (pH modifier type, sample size effect, and elevated temperature effect) have been tested and optimized. Potatoes sample was extracted with acetonitrile in presence of ammonium hydroxide at 80 °C. Phase separation was obtained by shaking the extract with magnesium sulfate and sodium chloride and analysis was done using liquid chromatography–tandem mass spectrometry. Matrix-matched standard calculations were applied to compensate for matrix induced suppression in LC-MS/MS determination. The precision and trueness of the method were determined from recovery experiments on five replicates of spiked blank

potatoes samples at 0.01, 0.05 and 0.1 mg/kg. The obtained recoveries ranged from 74 to 110% and their RSD values was <5% for all the concentrations.

**Key words:** QuEChERS, Diquat, Potato, Reversed phase liquid chromatography, LC-MS/MS.

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