

# Estimation of pesticide residues in table grapes by using gas and liquid chromatography coupled with mass spectrometry

■ S.P. Yadav<sup>1\*</sup>, B.K. Singh<sup>2</sup>, Rakesh Pandey<sup>2</sup>, A.K. Singh<sup>2</sup>, M.K. Mishra<sup>2</sup> and S.K. Singh<sup>2</sup>

<sup>1</sup>National Horticultural Research and Development Foundation, **Nasik (M.S.) India**

<sup>2</sup>Department of Entomology, Banda University of Agriculture and Technology, **Banda (U.P.) India**

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## ABSTRACT

The grapes are being exported in increasing quantities from Maharashtra to European countries and a lot of pesticide inputs are being used by the growers. A total number of 578 grape samples collected from Nasik district during December, 2013 to April, 2014 and analyzed for 167 numbers of multi-class pesticide (Organophosphate, Triazine, Pyrimidine, Triazole, Imidazole, Benzimidazole, Nicotinoid, Substituted thiourea, Strobiluron, Dinitroaniline, Morpholine) residue levels using Liquid Chromatography-Mass spectrometry/Mass spectrometry (LC-MS/MS) and Gas Chromatography-Mass spectrometry/Mass spectrometry (GC-MS/MS) by using validated methods. Only four samples were free from pesticide residues and rest were contaminated with 1-13 numbers of pesticides residue. During the study different classes of total 41 number of agro-chemicals had been detected and 116 number of samples were failed with residues of 4-Bromo-2-Chlorophenol, Abamectin, Carbendazim, Chlormequat Chloride, Chloropyrifos, Dinocap, Forchlorfenuron, Hexaconazole, Flusilazole, Profenophos, Spinosad, Thiacloprid, Triazophos, Fipronil and Acephate by exceeding their European Union MRLs.

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\*Corresponding author: