Assessment of DFG-S19 Method for the Determination of Common Pesticides in Wine Samples

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Residual pesticide analysis is used mainly for monitoring food and the environment and for ‘in house’ quality control of foods of vegetal origin. Multi residue methods are described in the literature for pesticide analysis (1-3). Pesticide residues analysis is generally carried out following several steps, e.g. extraction with organic solvent followed by liquid, liquid partitioning (LLE), clean up by column chromatography or gel permeation chromatography (GPC), concentration and final chromatographic separation and determination. German DFG-S19 method is widely accepted for residual pesticide determination in food stuff. The main steps of this procedure are; LLE, Cleaning-up the extract solution by GPC and Column Chromatography on a small silica gel column (SPE). In the standard techniques used in sample preparation procedure most steps are tedious, time consuming, labor intensive and they consume large amount of solvents.

In this study, considering a limited number of pesticides is searched in Turkish wine samples, some steps were omitted to simplify the overall process. Five sample preparation technique developed for this purpose and comparison was made to evaluate their performances. Our study includes the chromatographic studies of selected six common pesticides used for pest controlling in grapevine namely, Iprodione (IP), Chlorpyrifos (CP), Penconazole (PNC), Procymidone (PRO), Brompropylate (BP) and Lambda (LB). The validation parameters of the designed methods were compared by using LOD, LOQ, Recovery % and RSD % values.

References