A spectrophotometric determination of the pesticide *o*-phenylphenol at the ppb level

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In this work, we present a spectrophotometric method for determination of *o*-phenylphenol (OPP). OPP was extracted by acetonitrile, diethyl ether and n-pentane. After phase separation, the top organic phase was transferred and evaporated. Then the residue was dissolved and reacted with Berthelot reagent, which contained ammonium chloride, Sodium dichloroisocyanurate dehydrate and sodium nitroprusside in a borate buffer pH 10. The blue-green product was measured by a spectrophotometer. Under the optimized conditions, the calibration curve was linear over the range between 5-40 $\mu g \cdot L^{-1}$ with correlation coefficient r^2 = 0.9885. The calibration equation was $A=1.72x10^{-3}C+7.03x10^{-3}$. The detection limits was 1.6 $\mu g \cdot L^{-1}$ (3sd/m, n=12). The quantitation limit was 5.4 $\mu g \cdot L^{-1}$ (10sd/m, n=12). From these validated results, the proposed method can determine OPP at the ppb level. It was applied to determine contaminated OPP in real samples.

Keywords: *o*-phenylphenol; pesticide; spectrophotometry