



Clean up Determination of Paraquat Residue in Oil Matrix Method

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ABSTRACT

The experiment was to evaluate the feasibility of the method in determination of paraquat residue in palm oil and palm oil product. The method involved three steps: extraction of residue from the oil, clean up procedure using one type of resin, amberlite and spectrophotometric determination of the purified material. Using amberlite with glucose, the percentage recoveries were greater than 90% for 0.01 $\mu\text{g ml}^{-1}$ level of concentration. The method with the use of Amberlite resin in the clean up step can give better recoveries of the analyze. Beer's law is obeyed over the concentration range of 0.5 – 15 μg of paraquat per 25 mL of the final solution (0.02 – 0.6 ppm) at 600 nm. The molar absorptivity and Sandell's sensitivity were found to be $2.2 \times 10^4 \pm 100 \text{ l mol}^{-1} \text{ cm}^{-1}$ and $0.004 \mu\text{g cm}^{-2}$ respectively. The method is highly reproducible and has been applied to determination of paraquat in environmental samples.

Keywords: Paraquat, Amberlite, Spectrophotometry, Palm oil, Glucose and environmental samples etc.
