



Concentration dependent dosimetric evaluation of Coriandrum Sativum dye solution under gamma irradiation

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Received on 22nd June and finalized on 3rd July 2013.

ABSTRACT

In the present study chemical dosimeters having aqueous solutions of Coriander leaves dye were irradiated by Cs-137 gamma source in the range (0-100)KGy. The standard aqueous solutions were scanned by UV/VIS spectrophotometer for the determination of maximum wave length (λ_{max}) and the absorbance (A). The plot between concentration C and A gave approximate linear relationship and hence verified Beer's Law. Out of all the dye concentrations it was found that $c1 = 35g L^{-1}$ gave ideal dosimetric behavior which proved that these dye solutions are strongly dependent on dye concentration. Useful dose range for this dye to be used as a chemical dosimeter was found to be 60kGy to 100kGY.

Keywords: Aqueous solutions, Coriander leaves dye, chemical dosimetry, gamma irradiation, Optical density (OD).
