

Project Title -27	Detection and Standardisation of Sensitizing Disperse Dyes by Chromatographic Techniques
Principal Investigator	K.P. Janakiraman
Cost	Rs.13.34 lakhs
Date of Commencement	01.08.1999
Duration	24 Months
Date of Completion	Sep 2001
Abstract	This study is proposed to optimize chromatographic techniques, viz. HPTLC &HPLC for the detection of skin sensitizing Disperse dyes in textile fabric, since no standard methodology is available. Detection of banned dyes in commercial disperse dyes that are widely used and available in India
Highlights	<ul style="list-style-type: none"> ▪ The High Performance thin layer Chromatography and High Pressure Liquid Chromatography techniques with appropriate standardization give qualitative identification and quantitative estimation of banned disperse dyes from fabrics ▪ Two isocratic systems optimized for twin trough chamber are found to be suitable for the separation of the banned disperse dyes by HPTLC ▪ Two gradient solvent systems may be required in HPTLC only in cases where the safe dyes interferes with the banned dyes in isocratic systems ▪ Carbonization does not affect disperse dyes and this step is essential in the sample preparation stage to remove the interference of cotton dyes ▪ Dye extraction using chlorobenzene is effective in terms of cost, time and reproducibility ▪ It is possible to estimate the dye content of different dyestuff manufacturers ▪ HPTLC technique can be adopted as a screening method because of its speed, high sample through put, and confirmation by post chromatographic derivatization ▪ HPLC technique can be used for confirmation of HPTLC results and is a suitable technique for quantification of sensitizing disperse dyes, since its calibration range is wider ▪ Results of this study shows that the banned, unsafe, skin sensitizing disperse dyes are still being manufactured in India and being used by the processors
Area of applicability	Dyeing Industry
Target beneficiaries	Processing mills
Status	Completed