

Extraction of Waste Flowers

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Abstract— India, flowers are used for offering to Deities in temples and are thus available in huge quantities as temple waste. Rose and marigold flowers mostly used for offering to God and decoration purpose, thus flowers are available in every season and economical compared to other flowers. The natural dye extracted with water and collected different colour using mordant.

Keywords— Waste rose and marigold flowers, dry, Extraction, mordant.

I. INTRODUCTION

India, a diverse cultural heritage, having assorted ways of celebrating cultural festivals / events, uses different types of flowers, of which an abundant amount of flowers are used for offering to God and decoration purpose. A survey report reveals, that near about 40% of total flowers production is unsold and waste every day. These different flowers waste can be used for extraction of colourful dyes, which can be use in textile Industry. Waste flowers of temples are easily available and economical to use for dye. Dyeing of marigold and rose are non toxic, no allergic to human health and also available in abundant.

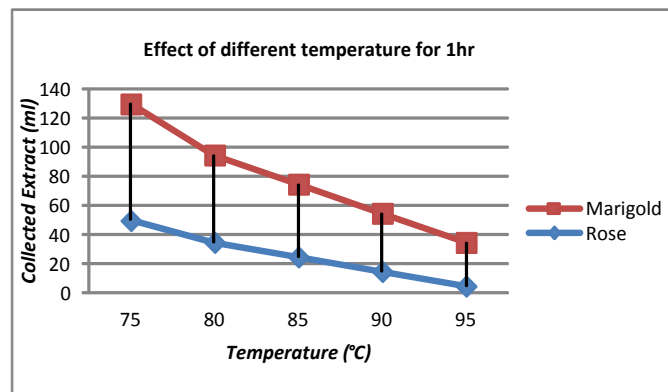
The total waste generated in Aurangabad city alone has been estimated to be 50kg per day. Most of these flowers are either dumped by the side of river or allowed to naturally decay, resulting in water pollution as well as environmental pollution. We have made use of the waste flowers and utilized its colorant for dyeing purpose which can be use in small scale industry.

II. MATERIALS AND METHOD

Collection of flowers: Waste flowers are collected from temples in Aurangabad city. These flowers petals were dried in room temperature. Average temperatures in Aurangabad 25 °C.

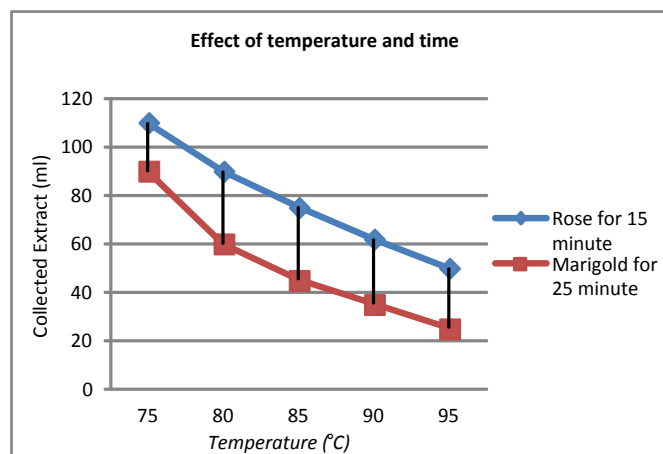
III. EXTRACTION OF COLOUR

Dried flowers petals weight 20 gm were taken and dissolved in 140 ml distilled water. Heat it gradually to 95°C, maintain this temperature for 15min to yield a rose dye extract and for 25 min to yield marigold dye extract , to be used for dyeing . Now, this extracted dye solution (10 ml) was diluted with distilled water (40 ml).



Graph -1

Graph-1, observed collected most quantity of extract at temperature 75°C for 1hr, but not good colour quality. Temperature at 80°C -85°C collected good quality colour, Samples shows good result from flower dye. The extraction is favoured at high temperature 90°C - 95°C, but at higher temperature, there is problem of charring of dye and collected extract in minimum quantity.



Graph -2





Graph-2, Observed time for Rose 15 minute and 25 minute for Marigold petals for extraction at temperature 75°C to 90°C, collected low quality colour at maximum quantity. Temperature at 95°C observed collected extract good quality for dye to cloth.

IV. MORDANTING

Mordant copper sulphate (CuSO_4), Ferrous sulphate (FeSO_4), Sodium carbonate (Na_2CO_3) and Alum [$\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$] with the ratio 0.25 per litter extract colour by maintain temperature 80°C .

Laboratory experiment, table-1 show that use of mordant can produce different colours on fabrics dyed with its flower extract.

TABLE I. COLORIMETRIC VALUES

Flower + Mordant	Colour Shade	Colour Model (R,G,B)
Rose + Copper Sulphate		129,116,59
Rose + Ferrous Sulphate		20,0,0
Rose + Sodium Carbonate		112,167,43
Rose + Alum		124,84,105





Flower + Mordant	Colour Shade	Colour Model (R,G,B)
Marigold + Copper Sulphate		208,184,10
Marigold + Ferrous Sulphate		83,97,21
Marigold + Sodium Carbonate		147,130,7
Marigold + Alum		226,229,101

Table-1 shows received colour shade on dyeing with different mordants for Rose and Marigold flower.

V. RESULT AND DISCUSSION

Collect maximum colour quantity of extraction at low temperature 75°C to 85°C with low quality and collect minimum quantity of extract colour at high temperature 90°C to 95°C with good quality colour.

Minimum time required to collect good quality colour (time for flowers petals colourless) observed required time for rose 15 minute and 25 minute for marigold petals at temperature 90°C .

VI. CONCLUSION

The presented work shows, different flowers can be used as dye. We can get different shades of colour using different mordant. This colour has no side effect on skin and it has no harmful effect on environment also. Waste marigold and rose flowers of Temples are almost easily available in every season.

VII. FUTURE SCOPE

- Natural dye can be use for dyeing to different types of cloth.
- Natural flowers colour can be use for making colourful candles.

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