

# NATURAL JAMUN INK PREPARATION FOR SCREEN PRINTING ON PAPER

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**ABSTRACT:** An attempt of natural jamun ink preparation for screen printing on paper is made in this paper. Steps followed for ink preparation are simple. Constituents used for ink preparation are natural. Natural inks prepared from plants, fruits, vegetables, minerals, microbes are used mainly for printing on textile. Using natural inks have various benefits like skin-friendly, less pollution generation, eco-friendly, bio-degradable, non-toxic etc. Prepared jamun ink is safe to eat and is non-toxic. Using natural inks for paper is an alternate to synthetic inks which are harmful to human health. Prepared ink gives good colour strength when printed on paper.

**Keywords:** jamun, colourant, natural ink, paper

## I. INTRODUCTION

Nature has so many beautiful colours. We have used one such colour from nature i.e. purple from jamun for natural ink preparation for screen printing on paper. Colouring component present in black current is anthocyanin. For ink preparation simple aqueous method is used. It is a traditional method for extracting colour from natural resources. In this method, colour containing compound if dry broken down into small pieces or in powdered form by grinding and soaked with water in vessel for some time to loosen the cell structure. If colour containing compound is in wet form then it is chopped down to fine pieces or grinded to fine paste. Then these broken down pieces are boiled in water to get the colouring component dissolved in water. This solution is filtered to separate colouring solution and non-colouring remnant. Both can be used easily to impart colour to different things. There are some disadvantages associated with this extraction method like slow process for extracting colour, high temperature requirement, large volume of water requirement, heat sensitive colouring substances gets reduced at high temperature, low dye yield, only water soluble colouring components can be extracted. Components of prepared ink are shown in table 1.

Table 1. Components of prepared ink

Sr. No.	Components of Ink	Jamun Ink
1.	Solvent	Water
2.	Resin	Gum acacia
3.	Pigment	Anthocyanin
4.	Additive	Salt, arrow root powder

## STEPS FOLLOWED FOR NATURAL JAMUN INK PREPARATION

- 250 gm of jamun pulp is grinded with 200ml of water for 2 minutes. Now this paste is boiled at 70°C for 30 minutes so that harmful bacteria and enzymes present in the sap becomes inactive.
- During this boiling process the colouring component anthocyanin present in jamun dissolved properly in water and gives purple colour.
- Sap is filtered using muslin cloth and boiled again to bring the final concentration to 100 ml.
- Now 1 tbsp of salt as preservative, 1½ tbsp of arrow root powder for viscosity, 1 tbsp of gum acacia paste as resin are added in the sap and sap is boiled till the consistency of ink changes.
- Now the prepared ink is used for printing on paper using screen. Print obtained is shown in figure 1. Prepared ink gives good colour strength of purple colour.

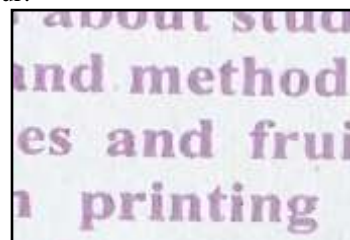


Figure 1

## DATA ANALYSIS

Print was evaluated on various parameters which are shown in table 1.

Sr. No.	Parameters	Harad Powder Ink
1.	Sunlight exposure for 7 days	Stable
2.	Rub resistance test	Stable (upto 1000 rounds)
3.	Peel-off test	Stable
4.	UV exposure for 6 hours	Stable
5.	Stability at low temperature	Stable
6.	Permanency of colour in normal day-light conditions	Stable

7.	Drying time	3-5 sec.
8.	Colour of printed ink	Purple

## II. RESULT AND DISCUSSION

Natural jamun Ink gives good colour strength of purple colour when printed on paper. Ink used is easy to prepare, economical and gives good print quality. After evaluation of printed ink, it was found that ink is stable with respect to various tests of rub-resistance, peel-off, sun exposure, UV exposure, permanency of colour in normal day-light conditions.

## III. CONCLUSION

Following are the conclusion from this research work:

- Jamun Ink is feasible for printing on paper using screen printing.
- Life of ink is from 50-60 days.
- Simple manufacturing process.
- Prepared ink is eco-friendly and easy to decompose.

This can be concluded that prepared purple jamun ink can be a good alternate to synthetic inks. More research is required in this field to standardize the method for ink preparation from jamun.

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