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NOVEL APPLICATIONS OF KASIM: HERITAGE MEETS HAUTE COUTURE

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ABSTRACT

This study explores the revitalization of Kasim, a traditional natural dye, through its application in modern fashion. Kasim, a dye historically integral to Indian crafts such as Kalamkari, Bagh, and Ajrakh, has been crafted over generations by fermenting jaggery and iron fillings. When applied to fabric pre-mordanted with myrobalan, it produces a distinct black hue, traditionally used for freehand painting and block printing of design outlines. To bring this age-old dye into contemporary relevance, the research developed new application techniques that simplify its use while enhancing its aesthetic possibilities. Various methods, including leaf printing and resist spraying, were tested to achieve sophisticated design effects suitable for haute couture. The study culminated in the design of a collection of kaftan kurtas, conceptualized using CAD software, with strategically placed prints on areas such as the shoulders, hemline, and neckline. This precise placement not only enhances the visual appeal of the garments but also aligns with current minimalist fashion trends, making Kasim both relevant and attractive to today's fashion consumers. The innovative designs generated in this research demonstrate the seamless integration of traditional dyes into modern fashion, offering a valuable pathway for designers and manufacturers to incorporate cultural heritage into contemporary products while meeting the expectations of modern markets.

Keywords: CAD Designing, Kasim, Natural Black Dye, Traditional Textiles

1. INTRODUCTION

In the past few decades, particularly with the establishment of the 17 Sustainable Development Goals (SDGs) by the United Nations in 2015, there has been a global sensitisation towards bringing in eco-friendly practices in different fields of life (United Nations (General Assembly), 2015, Resolution 70/1). This has progressively increased the research attempts to revive indigenous traditional techniques and materials that are biodegradable and sustainable.

Black is one of the more challenging colors to achieve with natural dyes (Pastoureau, n.d.). However, for centuries, traditional Indian craftsmen have skilfully utilized a fermented mixture of jaggery and iron scrap to create a natural black dye known as Kasim. The diverse ancient traditional craft centers across India have adeptly employed this dye for the decoration of textile materials in a grey-black to charcoal-black hue. This fermented black dye is referred to by different names such as, ***Kut***, ***Syahi***, ***Kaseem***, ***Kalo***, and ***Kassim Karam***, within various regional craft centers in India, reflecting the rich diversity and regional nuances inherent in these traditional practices (Ghosh, 2018; Ronald & Dunning, 2007;

Syahi, Syāhī: 2 Definitions, n.d.). This study explores the potential for contemporary applications of Kasim, aiming to revive and popularize this traditional dye.

1.1. TRADITIONAL MOTIFS MADE USING WITH KASIM

Kasim is primarily utilized for creating the black outlines in motifs within various traditional crafts, due to the distinct blackish hue it imparts. Depending on the artisan's preference, larger areas may also be printed black, as illustrated in Figure 1. These traditional crafts, such as Bagh, Bagru, and Ajrakh, are adorned through intricate hand block printing techniques applied across the entire fabric. In these crafts, the process begins with the meticulous pre-treatment and mordanting of the fabric, employing specialized techniques and natural materials, based on the extensive knowledge handed down through generations (K. Chouhan, 2019; Gadey & Gaikwad, 2021; Ronald & Dunning, 2007). Once the fabric is properly prepared, natural dyes are applied using blocks carved with motifs specific to each craft (Preetha R, n.d.). The sequence of color application varies by craft, but black is commonly used for outlining the design. In contrast, the crafts of Kalamkari (Srikalahasti) and Mata-ni-Pachedi employ freehand painting techniques, traditionally having application as the temple wall cloth. Here, the design is often sketched in charcoal first, followed by 'drawing' on the fabric using Kasim dye to create the black outlines. Other colors are also filled in with hand using a specialised pen or *kalam*.

a) b)

Figure 1 Traditional methods of Kasim application; a) Hand painting in Kalamkari, and b) Block printing in Ajrakh. From "Kalamkari work – Srikalahasti"

(Baral, S., et al., n.d.; The Tradition of Ajrakh Printing, 2022)

The motifs and patterns in traditional Indian crafts are deeply rooted in the natural world, drawing inspiration from the artisans' surroundings. These crafts often feature depictions of animals, flowers, birds, and daily activities, translating the beauty of nature into intricate designs. Common motifs include floral elements like the lotus, birds such as the peacock, and animals like the elephant. Other motifs include stylized vines, creepers, architectural designs, and natural symbols like the sun, stars, and the iconic paisley (or ambi). Geometric patterns such as diamonds, stripes, and dots are also frequently used. (S. Chouhan & Patil, 2019; Geographical Indications Journal No. 75, 2015; Geographical Indications Journal No. 131, 2020; Ronald & Dunning, 2007)

These motifs are typically arranged in repeating patterns that extend across the fabric's entire length. Stylized vines and geometric stripes often serve as borders, framing the main body of the design, which features a repeated placement of 'buti' or small, stylized floral motifs. Crafts that involve freehand painting, like Kalamkari (Srikalahasti) and Mata-ni-Pachedi, tend to focus on more elaborate depictions, particularly of deities and divine figures. These crafts are renowned for their detailed narrative panels, often portraying scenes from the epic tales of the Ramayana and Mahabharata (Jayakar, 1979; Rani, 2021; Singh & Gupta, 2024). A glimpse of the traditional designs made in these crafts has been given in Figure 2.


a)


b)

Figure 2. a) Bagh printed stole showing all-over traditional pattern; b) Kalamkari painting – Srikalahasti (Baral, S., et al., n.d.; Gambhir, n.d.)

The advancements in the garment manufacturing process led to mass production of textiles. Simultaneously, the consumer demand has also increased leading to the emergence of fast fashion trends (Niinimäki et al., 2020). Today's younger generation tends to favour minimalistic prints over traditional overall patterns, finding the charm and beauty in the slight imperfections of authentic handwork less appealing than older, more traditional enthusiasts do. While printed fabrics remain popular among designers, contemporary fashion increasingly emphasizes abstract patterns and strategically placed prints, rather than extensive overall designs. This shift in consumer preferences underscores the need to develop new design effects that preserve the relevance of traditional dyes and techniques. (S & Varghese, 2023)

1.2. TRADITIONAL METHOD OF APPLICATION OF KASIM

For the development of the black color, Kasim needs to be applied onto the fabric that has been pre-mordanted with a tannin-based mordant. Myrobalan or *Terminalia chebula* is a mordant that is the most widely used across the traditional crafts of India (Geographical Indications Journal No. 75, 2015; Mohanty et al., 1987). The development of color takes place within a minute on the mordanted fabric, and it shows excellent color fastness to washing and rubbing. However, since Kasim dye is of water-like consistency, the addition of a thickening agent often becomes imperative to its usage in hand painting and block printing techniques. To achieve the required viscosity, the dye is typically boiled with starch or mixed with gums, such as Gum Arabic or Guar Gum, through mechanical action. This process thickens the dye, ensuring it adheres properly to the printed or painted areas without spreading or bleeding into the fabric. (Baral, S., et al., n.d.; Geographical Indications Journal No. 131, 2020; Jayakar, 1979)

Figure 3. Myrobalan nuts for mordanting fabric (Baral, S., et al., n.d.)

However, as the thickened dye paste ages, it may negatively impact the color fastness properties of the resulting print. The compatibility between the dye, the selected thickening agent, and the fiber type is critical to achieving a sharp color and fast effect. Despite these challenges, the traditional methods of applying Kasim necessitate the addition of a

thickening agent to increase the dye's viscosity. This step remains essential to prevent the dye from spreading and to ensure precise application during hand painting and block printing.

1.3. OBJECTIVES OF THE STUDY

Kasim is a symbol of cultural heritage and identity, as it represents the ancient and diverse traditions and skills of the Indian craftsmen. It can offer a unique and distinctive aesthetic appeal to the modern fashion consumers, who are looking for more sustainable, eco-friendly, and authentic products. Kasim is also one of the few natural dyes that can produce a true and fast black colour, which is rare and desirable in the textile industry.

This research aims to revive and reinvigorate the use of Kasim by developing novel techniques for its application that can create contemporary design effects that are suitable for contemporary fashion, particularly within the realm of haute couture. Haute couture, characterized by its emphasis on exclusivity, intricate craftsmanship, and tailored precision, is well-suited to these new design effects. The uniqueness and artistry required in haute couture align with the creative potential of traditional dyes like Kasim, offering a fresh perspective that could integrate cultural heritage into modern, high-end fashion.

To further this vision, the design effects were conceptualized for a line of kaftan kurtas, utilizing placement printing techniques. These were developed using Computer-Aided Design (CAD) software, that allows precise and creative placement of prints in a way that can enhance the garment's aesthetic appeal. CAD also ensures exact measurements and proportions, enabling the designer to explore numerous design options on the same block. Moreover, CAD is resource efficient and reduces the environmental impact of the design process. (Hao & Ni, 2022; Hwang & Zhang, 2020; Wagaye et al., 2023)

2. METHODOLOGY

2.1. PREPARATION OF KASIM

Kasim dye solution was prepared by fermenting a 75g mixture of jaggery and iron scrap (in the ratio 2:1) in 250ml water. The jaggery used in this study was sourced from the jaggery shop in Mehrauli, Delhi, while the iron scrap was procured from a scrap dealer in Safdarjung Enclave, Delhi. The mixture was allowed to ferment naturally for 20 days, with the process taking place at an average peak temperature of 38°C and an average relative humidity of 75%. The fermentation process is illustrated in Figure 4. Upon maturation, the dye liquor was sieved and used for creating the design effects on textile material.

Figure 4. Preparation of Kasim

2.2. PREPARATION OF FABRIC

Kasim has traditionally been applied to cotton and silk fabrics, as natural fibers generally exhibit a higher affinity for natural dyes compared to synthetic ones. For this study, 100% cotton cambric fabric with a thread count of 126x131 was sourced from INA Market, Delhi, and utilized to create the design effects. The fabric underwent scouring with a 3g/l detergent solution to eliminate sizing and impurities. Following this, the fabric was pre-mordanted using myrobalan powder, sourced from Isha Agro Pvt. Ltd. The scoured fabric was treated with 10% owf myrobalan powder through the exhaust dyeing technique for 30 minutes at a simmer. After mordanting, the fabric was dried and subsequently used for creating design effects with Kasim dye. (Figure 5)

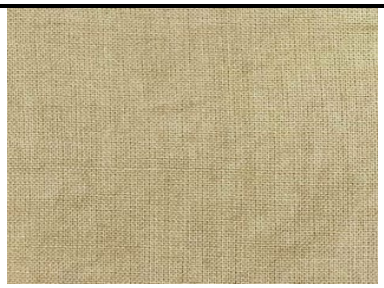


Figure 5. Cotton fabric pre-mordanted with myrobalan

2.3. NOVEL TECHNIQUES FOR CREATING DESIGN EFFECTS

When Kasim is applied to pre-mordanted fabric, a black hue instantly develops. This characteristic allowed the watery Kasim dye to be applied directly to the fabric without the need for thickening agents. To ensure that its liquid consistency did not compromise the design quality, various techniques were experimented with to create aesthetically pleasing design effects. (Badoe et al., 2015; Nafady, 2021) The techniques employed included:

1) Leaf printing
2) Spraying
3) Thread pulling
4) Brush strokes

2.4. ENVISIONING THE DESIGN EFFECTS ON CAD

In this study, various design effects were envisioned for an haute couture line of kaftan kurtas using CorelDRAW Graphics Suite 2024 software (Wang, 2020). The prints were strategically placed on key areas of the garments, such as the neckline, center front, hemline, and flare, to draw attention and enhance the overall aesthetic. Additionally, larger motifs were considered for placement on the chest area to create a focal point. The Kasim dye was also explored as a means to accentuate decorative elements like buttons along the center front, further adding to the garment's visual appeal.

3. RESULTS AND DISCUSSION

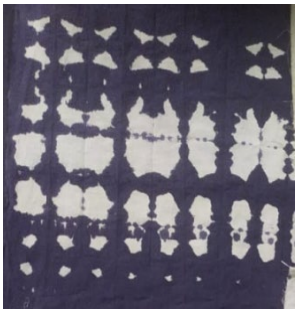
ANALYSIS OF THE NOVEL TECHNIQUES TO CREATE DESIGN EFFECTS USING KASIM

The novel techniques were successfully used for creation of abstract designs. A few samples were further embellished by means of embroidery with a red coloured anchor thread, to bring out the contrast in the black on beige theme. Sequins and buttons can also be used for the embellishment. This has been depicted in the Figure 6.

The water-like consistency of Kasim initially proved to be challenging as it would quickly get absorbed and flush out into the fabric. Therefore, it was important to control the quantity of dye taken up for stamping or making brush strokes. Once the excess dye liquor is shed off, designs could be effectively created as intended.

The spraying technique proved especially efficient. The sprayed over effect could be combined with resisting using other objects, to result in a granular randomly printed effect. This method can specifically be used owing to the watery consistency of Kasim. These aesthetically appealing design effects also showed excellent color fastness.

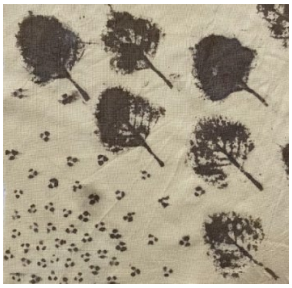
Thread dipped in kasim solution was pressed on the fabric and pulled to create this effect.



Tie and dye – fan folding and clipping technique

Dipping different small objects like rubber bands and cord yarns in kasim solution and consequently stamping on fabric

Dry brush strokes to give a rugged check appearance



Leaves of different shapes used for stamping on the fabric

Covering certain areas of the fabric and spraying kasim solution onto it to develop the black hue of exposed area.

Figure 6 Design effects created using novel techniques (a to f)

3.2. ENVISIONING THE DESIGN EFFECTS ON CAD USING PLACEMENT PRINTING TECHNIQUE

A selection of design effects was strategically applied to specific areas to envision an haute couture line of kaftan kurtas, utilizing the CorelDRAW Graphics Suite 2024 software. This approach provided a visual representation of how Kasim can be integrated into contemporary fashion, blending modern aesthetics with heritage value, as illustrated in Figure 7. The classic black and white (or beige) color combination not only offers a highly sought-after aesthetic but also carries cultural significance. The targeted placement of prints enhanced the overall design, aligning with contemporary minimalistic trends. (Edward et al., 2024; Tkalec et al., 2024)

These design effects can be applied to the garment in two distinct ways: either as detachable patches or directly onto the fabric. In the latter case, the garment fabric would first be pre-mordanted before the desired designs are applied. This process results in a base fabric color of light beige rather than pure white, creating an elegant beige and black combination.

Figure 7. Kaftan kurta line as envisioned using CAD

4. CONCLUSION
OUTCOMES OF THE STUDY

This research has opened avenues for contemporary applications of the heritage dye Kasim. The key outcomes of this work have been listed below:

1) The study brings in new techniques for application of Kasim which enabled easy creation of abstract and contemporary designs. Contrary to the traditional hand painting and block printing methods, simple application procedures were employed, which do not require high level of precision or expertise, while consuming much

lesser time. Moreover, the methods allowed freedom of designing without the requirement of additional steps of addition of thickening agents or fixation of the dye. Thus, the proposed methods saved on time as well as cost.

2) In addition to saving time and cost, the elimination of thickener also allowed for the colour fastness to remain unaffected.
3) By using these novel methods, aesthetically pleasing abstract designs can be formed without the requirement of expensive designing tools like blocks and screens.
4) The consumer preferences are moving from an all-over traditional pattern, that is often predetermined and same for several pieces, towards minimalistic abstract forms. Additionally, unlike mass produced garments, haute couture involves production of a limited number of unique pieces. This becomes possible with the customised placement printing method using the traditional dye Kasim (Adeloye & Yazar, 2022).

The study acts as the first step towards the possibility of inclusion of Kasim into the mainstream haute couture designing with abstract forms, by simultaneously uplifting and reviving the traditional Indian knowledge system (IKS). Stepping ahead from the traditional applications, this study opens avenues for contemporary applications of Kasim to create unique designs that are aesthetically pleasing as well as durable. This aligns with the global need of the day – bringing sustainability into the textile industry. Additionally, the craftsmen can also make use of these simpler methods to offer contemporary alternatives to consumers and sustain their businesses and prevent this invaluable natural dye from languishing.

4.2. FUTURE SCOPE OF STUDY

The current work can be taken further, wherein additional simplification of the application process and its integration into the existing commercial textile printing setups can be studied. This can help broaden the application of kasim in contemporary fashion. Furthermore, studies on the market acceptance of these novel designs can help provide further direction and commercialisation.

CONFLICT OF INTERESTS

None.

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