NATURALLY COLOURED COTTON:

A SUSTAINABLE FIBER

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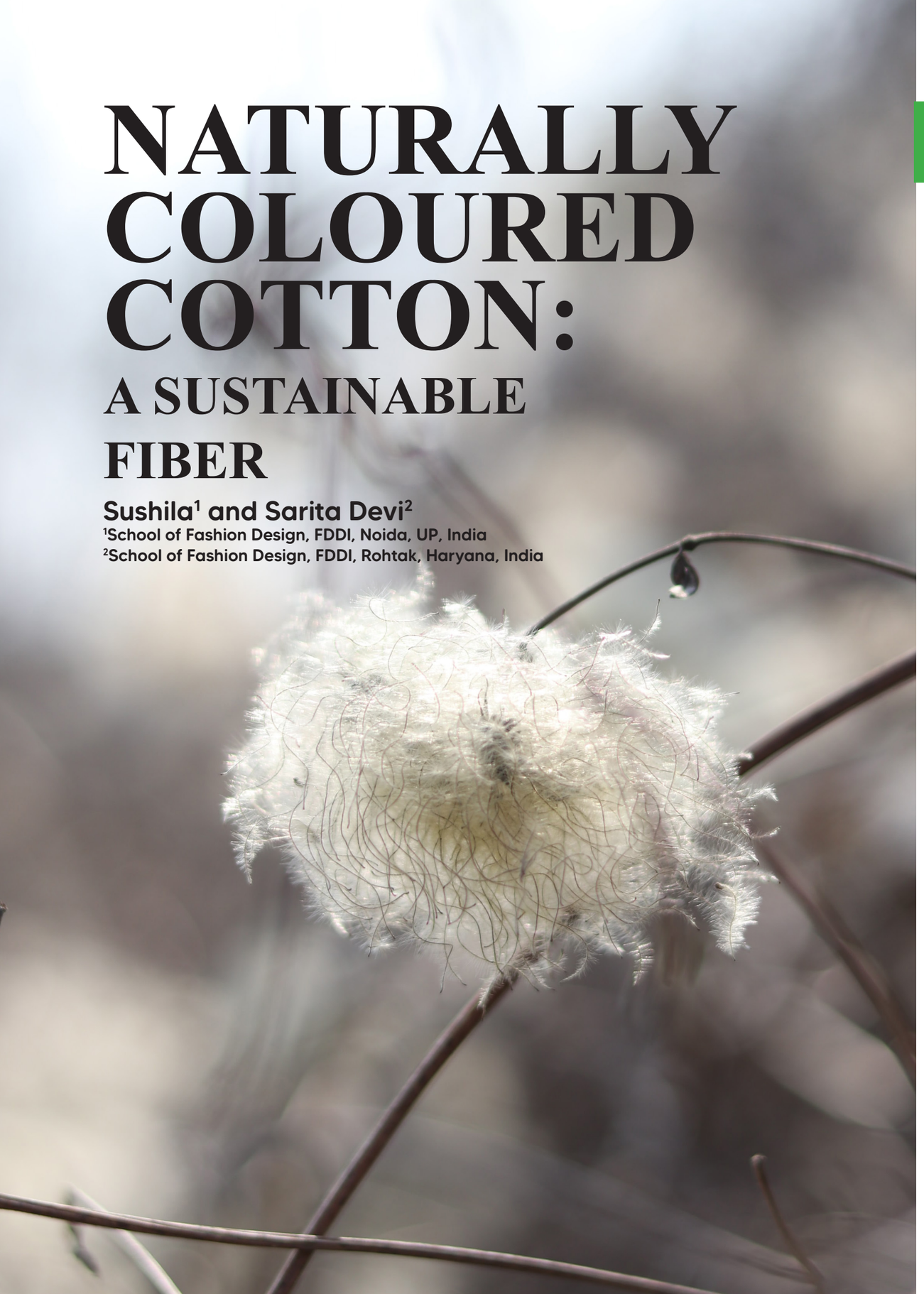

INTRODUCTION:

Cotton is naturally grown today in varieties of colors: beige, red, earth brown, chocolate brown, gray and green. The use of naturally colored cotton has been historically suppressed, mainly due to the industrial revolution. Back then, it was much cheaper to have uniformly white cotton as a raw source for mass-producing cloth and fabric items. Currently, modern markets have revived a trend in using naturally colored cotton for its noted relevance in reducing harmful environmental impacts.

Commercial white cotton is by far the most pesticide dependent crop in the world. Although it only occupies 3% of the world's farmland, it consumes more than 25% of the insecticides and 12% of the pesticides used worldwide. Fifty-five countries rely upon cotton for a significant percent of GDP. After dyeing, the chemical residues are thrown in nearby river contaminating water and soil. When the fabric is manufactured from naturally coloured lint, there is no need of artificial dyes. The World Bank estimates that almost 20% of industrial water pollution comes from textile dyeing and treatment. They have also identified 72 toxic chemicals in our water solely related to textile dyeing.

PRESENT STATUS OF COLOURED COTTON

Naturally coloured cottons are gaining importance in the recent years due to the integration of ecology, fashion and public's rising interest in environmental issues and environment-friendly production processes. However, there are few drawbacks with these fibres which make the consumer non-enthusiastic to go for naturally coloured cotton fabric. The fibres are too short and weak to be spun into finer counts and also there is a basic limitation of non-availability of desired shades and colors.

In India, about 40 coloured genotypes of upland cotton (*G. hirsutum*), mostly of various shades of brown and green colour have been developed. Brown cotton lines are at the forefront and expects that one of its varieties, DDCC-1, was proposed for release in 2021. Furthermore, DMB-225, a medium brown variety was developed in 2013, along with three other varieties. However, DMB225 was not released commercially on the grounds that it would contaminate white cotton, though its fibre quality was found highly suitable. By not using chemical dyes, as well as reducing the use of pesticides, the naturally colored cottons have become popular for being ecological and environmentally safe.

Types of lint colour: The lint colour of cotton under commercial cultivation is often white. In the cultivated species, brown and green colours are most common. Some of the genotypes in germplasm collection of USA and Russian Republics are reported to have coloured lint with shades of pink, red, blue, green and also black.

Naturally coloured cotton

SOURCES OF LINT COLOUR:

There are two important sources of coloured lint in cotton. These are-

(i) Germplasm Collections: In India, about 40 coloured genotypes of upland cotton (*G.hirsutum*), mostly of various shades of brown and green colour are available in the National Gene Bank of Cotton

(ii) Wild Species: Many of the wild species of genus *Gossypium*, including putative donors of present day tetraploid cotton i.e. *G.herbaceum* race *africanum* and *G.raimondii* have coloured lint. The brown colour in different shades is most common.

ADVANTAGES OF COLOURED COTTON:

By not using chemical dyes, as well as reducing the use of pesticides, the naturally colored cottons have become popular for being ecological and environmentally safe. The use of naturally coloured cotton helps in reducing environmental pollution caused by artificial dyes and risks to the health of farmers and communities. The dyeing process is omitted when naturally coloured lint is used for manufacturing of the fabric, reducing the cost of production.

CONCLUSION:

Cotton today is grown naturally in a variety of colours and does not require synthetic dyes during the dyeing process. The use of naturally colored cotton has been historically suppressed, mainly due to the industrial revolution. Furthermore, the color of fabrics made from naturally colored cotton does not become worn and fade away compared to synthetically dyed cotton fabrics.