



Brown Cotton – Home Coming

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ABSTRACT

Pakistan had a well-developed cottage industry that perished under modernisation. Recently Fox Fibers revived the use of natural coloured organic cotton. Brown cotton seed samples were collected from a local ginnery. It had short staple (14-15 mm), and low yield. This material also had poor resistance against cotton leaf curl virus and insects. Eight shades in brown colour have been differentiated ranging from darkest (Pink) to lightest. In order to improve the yield, fiber quality, and resistance to disease and insects, hybridization work was undertaken. Rough and okra leaf characters have been incorporated to lend comparative tolerance to insects. The hybrid material is in F₃. Green colour seed was collected from a local grower. The green colour is not stable but efforts are being made to stabilize it. D'Jura green an introduction from USA and local green were crossed producing dark colours between deep green and dark blue. It will be sown in F₃ this year.

Introduction

Before the advent of chemical colours and dyes, brown lint was commonly used for manufacturing cloth in villages. The lint was derived both from *G. arboreum* and *G. hirsutum* types. The use of natural brown coloured cotton dwindled and faded away due to low yield, less demand and migration of craftsmen to the cities. The use of natural coloured cotton is increasing slowly in the west due to its novelty. The natural coloured lint being scarce, commands a higher price than white lint. Fox (1987) has been a pioneer in reviving the interest in natural coloured lint. Some farmers in the USA are growing brown and green coloured cotton. There is evidence of maroon, mauve, chocolate brown, blue, purple, pink, green, brown, tan and red coloured cloth found in Peruvian ruins (Fox 1987). Green colour is not fast and fades in sunlight. Grey coloured cotton is grown in some parts of "Pothwar" in Pakistan.

Dyeing and finishing processes in the textile industry are very water intensive. The treatment and the disposal of dye and finishing solutions are a source of environmental pollution. Any effort to decrease or eliminate the process of dyeing

and finishing by the use of coloured cotton will not only be less expensive but also cause less environmental pollution. The use of coloured cotton being unique and attractive has the potential to become a part of the cotton fabric and apparel market, but there are limitations since coloured cotton is usually shorter in staple length and weaker in strength.

The washing of natural colours is quite different from that of synthetic dyes. Dyed fabrics fade with each washing while natural colour improves its fastness. Experiments have shown that washing fabric from coloured cotton even 30 times only intensified its colour.

Material and Methods

Five years ago bulk samples of natural brown coloured seed cotton were collected from a local ginnery, green coloured seed was collected from a local grower and D'Jura green was introduced from Texas A & M. USA. The bulk samples of both the colours were grown. Different shades of brown colour were noticed in the field and each shade was picked, ginned and processed separately. Both USA and local greens have similar fiber characteristics.

The coloured lint was classified into eight different shades from darkest brown to very light colour. All the colours had poor yield and inferior fiber quality and they were highly prone to sucking insects and Cotton Leaf Curl Virus. In subsequent years, crosses were attempted to improve these deficiencies. To a certain extent yield and quality have been improved through continuous selection.

Programme of Research Work

1. Collection of germplasm locally from fields and ginneries and from foreign countries.
2. Separation of different shades of brown cotton.
3. Improvement of yield, fiber quality and resistance to insects and disease.
4. Development of different colours through hybridization.
5. Stabilize green colour

Conclusions

Local green crossed with D' Jura green produced more intense colour between green and blue. The dark brown crossed with green produced fascinating hues of different colours as the shades intermingled with each other. Efforts have also been made to produce okra leaf plants with coloured lint that are resistant to Cotton Leaf Curl Virus.

References

- Brookhart, B. (1991): The colour of money - PART II. Farm Journal.
- Brookhart, B. (1991a): Cotton's little red hen. Farm Journal.
- Endrizzi, J.E., E.L. Turcotte and R.J. Kohel. (1991): Qualitative Genetics, Cytology and Cytogenetics. In: Cotton. R.J. Kohel and C.F. Lewis (Ed.) Agonomy Monograph 24. ASA, CSSA, SSSA. Madison, Wisconsin. 81-120.
- Fox, S. (1987): In search of coloured cotton. Spin Off 48-50.
- Johnson, C. (1993): Colour them intrigues. Farm Journal.
- Kohel, R.J. and T.R. Richmond (1971): Genetic analysis of fiber colour variants in cotton. Crop Science 15:793-797.
- Kohel, R.J. (1985): Genetic analysis of fiber colour variants in cotton. Crop Science 15:793-797
- Vreeland, J.M. Jnr. (1982): Coloured cotton – Return of the native. IRDC Reports 10(2):4-5.