

Artistic Finishes for Home Textile Materials

Alessandro, Caseareo
School of Textile Engineering
University of Manchester, Italian

Abstract

Fragrance ultimate of textile materials has been greatly lengthened and used in recent years. Fragrance destroying can be done effectively using exhaust method than any other methods. If the fabric is treated with fragrance agents which exhibitions higher durability of functionality is estimated. Fragrance destroying can be done by means of lavender aroma with non-ionic binder. This paper observes the effects of fragrance finished aloe-vera and cotton fabrics. Lastly both the fragranced completed fabrics were made into wall hangings and the environment of the room was estimated by comparing various factors. In this exploration, factors such as fabric performance, stability of the fragrance and laundering properties of the treated fabrics were considered. The fragrance finished fabrics can be used in home textile submissions such as wall hangings, table covers, carpets and sofa covers.

Keywords- Fragrance Finishes, Cotton Fabric, Aloe-Vera Fabric, Lavender.

I. INTRODUCTION

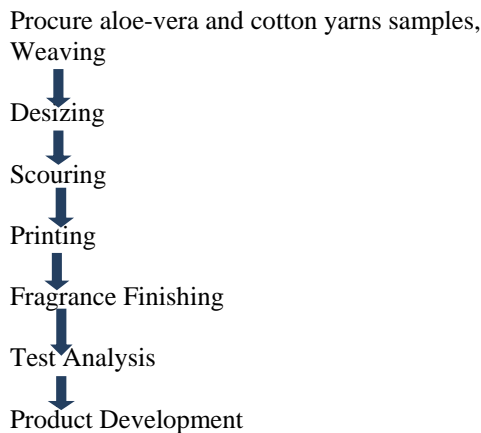
Fragrance finishing of textiles is one of the procedures which improve the value of the product by adding several odours to it. The world marketplace is continuously changing and so the demand of consumers is also amplified. Everyone requests for continuous change that is something different and unique. This increase in demand, as well as tremendous competition in the market, opens up opportunities for value addition to all forms of textile materials. The effective change has to be implemented in the market. By this extensive analysis, fragrance finishing is considered as emerging area and which has tumble-down the textile industry with lively value additional finish by integrating dissimilar fragrances into fabrics, leading to the construction of fragranced fabrics. The uses of fragrance complete textile materials were diverse. By taking lavender odour as exceptional for wall hangings, the odor of lavender was treated with cotton and aloe-vera fabrics. This demonstrated a good way to meet important emotional and emotional needs, as well as those of a pure and sensorial nature. Interior textiles such as sheets, quilt-covers, curtains, carpets and bed gowns are appropriate for the attachment of lavender, rose and sandal fragrances, which are good for fatigue and eradicate tiredness.

II. MATERIALS

Ordinarily cotton fabrics can be used for fragrance designated for fragrance finishing and the evaluation of various factors were completed. Consequently both the fibres were plant fibres, grown spontaneously and the materials are free from chemical

substances. Thus 100% cotton and aloe-vera fabric is taken as the raw material for this fragrance finishing process.

A. Process for Fragrance Finishing



B. Weaving

In the weaving process, the fabric is woven by plain texture with 60 ends per inch (EPI), 48 Picks per inch (PPI) and the yarn count used is 20s Ne that is 100 % cotton and aloe-vera yarn.

C. Desizing

Both the cotton and aloe-vera fabrics are preserved with desizing process for removing starch size. The fabric is padded with malt extract enzyme (3-5%) at 60°C by using 1:20 material to liquor ratio with pH 6-7. Finally the material is washed, squeezed and dried.

D. Scouring

After desizing the fabrics are preserved with scouring process for remove the natural and added layerscurrent in fabric such as natural oils, wax, pectin’s, proteins, mineral matters, dirt etc. The fabric is treated with NaOH (2-3gm/l) and (2-3gm/l) non-ionic surfactant at 100°C for two hours by using 1: 20 material to liquor ratio with 12 pH. Finally the material is washed, squeezed and dried to get better permeability.

E. Printing

The fabrics are printed with pigment colors by using direct style roller production machine. And the fabrics were dried at 100°C, cured at 150°C for 4 to 5 minutes. Finally the fabrics are washed with 2% non-ionic surfactant and dried.

III. METHODOLOGY

A. Fragrance Finishing:

Fragrance finishing is the process of conveying aroma in any textile substrate. This is done by consume method which means, fragrance agents is practical on both the cotton and aloe-vera fabrics with the help of binder. Lavender fragrance was taken as a flavor for this process.

B. Preparation of Recipe:

The lavender fragrance agents with binder ST were fashioned by mixture solution encompassing alcohol and distilled water with ratio (1:3). The solution was combined with a high-speed mixer at a speed of about 10,000 rpm for 5 minutes. The emulsified system was transferred into a flask. The alcoholic fragrance solution was added into the combined solutions over 30 minutes, and stirred at a temperature of 40°C for 2 hours.

C. Finishing Process:

Fragrance finishing was given to the fabric by enervation method with 5-7% binder ST which is used as cross-linking agent. The fabrics were kept absorbed in the solution containing lavender fragrance, (ML ratio – 1: 10) for 20-30 minutes at 40°C in water bath. After finishing, the fabrics were removed, enfolded and dried at 100°C in the oven for 5 minutes and then cured at 120 °C for 2 minutes.

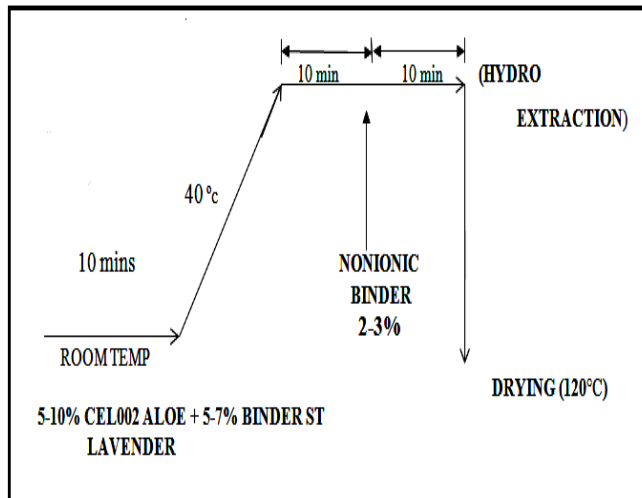


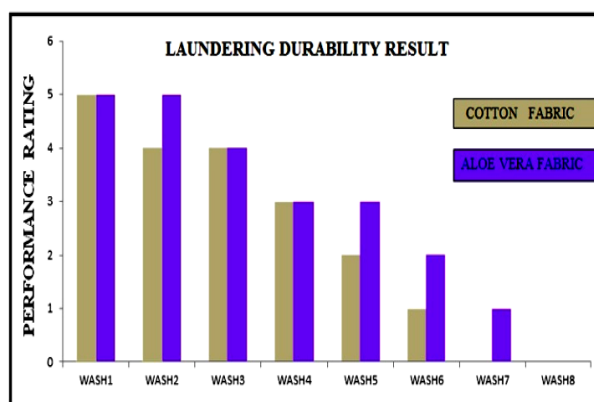
Fig 1. Fragrance Finishing Process

IV. RESULTS AND DISCUSSIONS

Tests and analysis are done to check the efficiency of the process that has been carried out. It helps in evaluating the success rate of any innovation. The testing process is done by carried out for 20 cycles in both fabrics to enable precise evaluation of the study. The subsequent tests were carried out to analyze the effectiveness of the perfume finish and compared by the fastness belongings of the fabric.

A. Laundering Durability Results:

Laundering toughness was tested conferring to standard ISO 105-C06: 1987 using a detergent solution for 35 minutes at 40°C. Samples were rinsed with copious water and air dried.



Graph No.1. A Graphical Representation on Laundering Durability Results

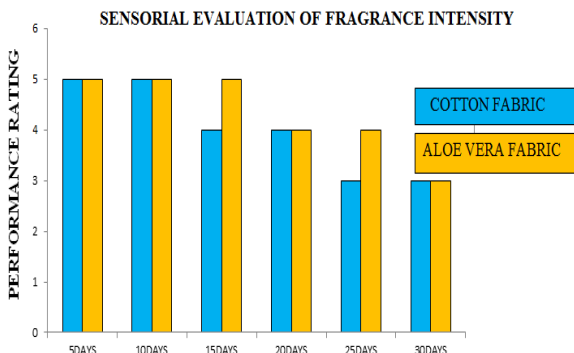
1) Interpretation

When associating the laundering durability results of cotton and aloe-vera fabrics after 20 cycles,

the aloe-vera fabric has better effect of perfume up to 5 washes and the cotton fabric has better effect of fragrance up to 4 washes only. From the understanding, it justifies that fragrance finished aloe-vera fabric has better laundering durability.

B. Sensorial Evaluation of Fragrance Intensity:

Preserved fabrics were tested for the occurrence of fragrance before and after a wash cycle. Judges would use a finger nail to scratch the specimen and then smell the swatch. The rating compulsory was a '5', '4', '3', '2', '1', '0' about fragrance intensity, correcting '5' to maximum intensity and '0' to non-detectable fragrance.



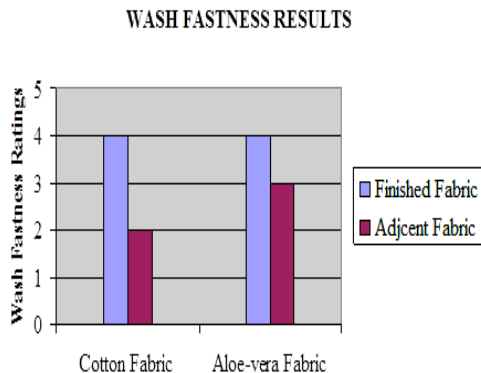
Graph No.2. A Graphical Representation on Sensorial Evaluation of Fragrance Intensity

1) Interpretation

When associating the sensorial effect of fragrance concentration of both cotton and aloe-vera fabric, the aloe-vera fabric express common until 25days and the cotton fabric express common until 20 days. From the interpretation, it rationalizes that fragrance finished aloe-vera fabric has better sensorial effect of fragrance intensity.

C. Washing Fastness Results:

The washing fastness test was based on AATCC 61-2A. A specimen of textile in contact with pieces of specified adjacent fabrics is unconsciously agitated in detergent solution, rinsed and dried. The change in color of the sampling and the staining of the together fabrics are evaluated with the standard grey scale.



Graph No.3. A Graphical Representation of Washing Fastness

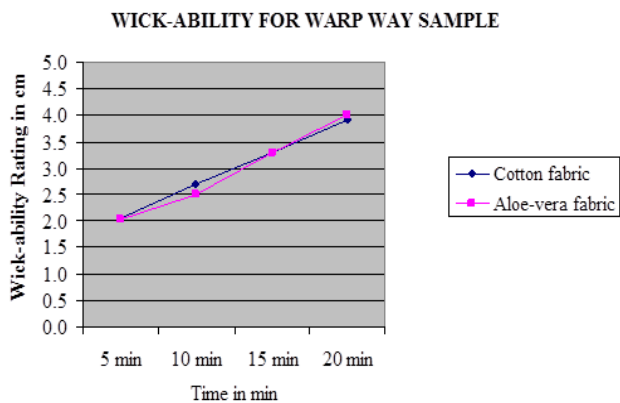
1) Interpretation

When correlating the washing fastness results of cotton and aloe-vera fabric, both fabric exhibits equal but together fabrics staining rating is better for aloe-vera fabric than cotton. From the understanding, it rationalizes that fragrance complete aloe-vera fabric has better adjacent fabrics staining rating than cotton fabric.

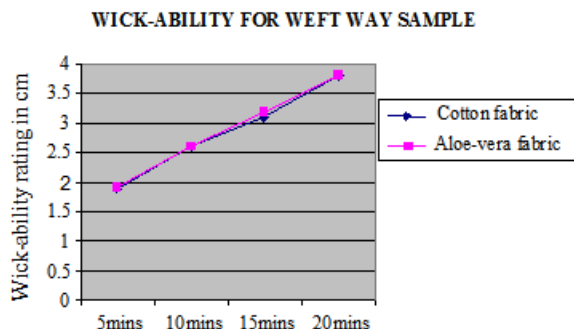
D. Light Fastness Results:

A specimen of the fabric is unprotected to the light from a xenon arc lamp of correlated color temperature 5500°C to 6500°C. The fastness is calculated by comparing the fading of the specimen with that of the standards.

E. Wick ability Results



Graph No.5. A Graphical Representation of Wick-Ability for Warp Way Sample



Graph No.6. A Graphical Representation of Wick-Ability for Weft Way Sample

Wicks method is used to test material wick ability. The test specimen is engrossed in distilled water in specific depth and is acceptable for some time. The water is raised to height by capillary action; increased height in lesser time is measured as better absorbency. Wick ability can be tested in both warp and weft direction of cotton and aloe-vera fabrics.

1) Interpretation

When associating the wick-ability results of cotton and aloe-vera fabric, both the fabrics have small dissimilarities in rating but the effect of wick-ability were good. From the interpretation, it justifies that wick-ability were good in both fabrics.

V. CONCLUSIONS

Fragrance finish is the process by which material materials are treated with the pleasant odours which yields better favorable effects. The pleasant smells can be created by the indispensable oils have pharmacological effects like antibacterial, antifungal, antiviral, etc. and mood elevating effects. The fragrance of lavender proves good way to meet imperative psychological and emotional needs, as well as those of a purely physical and sensorial nature. Thus by associating the laundering durability results, it

rationalizes that fragrance complete aloe-vera fabric has better laundering durability. Associating the sensorial effect of fragrance intensity, it justifies that fragrance finished aloe-vera fabric has better sensorial effect of fragrance intensity. Then grounded on the washing fastness results, it rationalizes that fragrance finished aloe-vera fabric has better together fabrics staining rating than cotton fabric. Associating the light fastness rating, it justifies that fragrance finished cotton fabric has slightly better light fastness rating than aloe-vera fabric. Based on the wick-ability results, it rationalizes that wick-ability were good for both fabrics. Lastly based on the overall presentation it is concluded that the fragrance ended aloe-vera fabric is better than cotton fabric for wall hanging and in all home textile applications.

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