

Research Note :

UTILIZATION OF WASTE WOOL

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In normal times, not enough wool was obtained from sheep to meet the requirements of wool industry. This deficiency is made up by using the waste wool which is discarded during sorting, processing & also after utilization of article/garment.

According to Hess, (1974) 'wool' is defined as fiber from the fleece of the sheep or lamb or hair of the Angora or Cashmere goat (and may include the so called specially fibers from the camel, alpaca, llama & vicuna). "Reprocessed wool means fibers recovered from new rags never utilized in any way by the ultimate consumer". "Reused wool" means fibers recovered from old rags (worn-garments) "after having been used in any way by the ultimate consumer".

High quality fibers can be produced from discarded fabrics if they contain good quality unfilled fibers that have not been severely treated. A good quality of reused wool when woven into a fabric has greater resistance to abrasion than an inferior quality of wool.

METHODOLOGY

Collection of the information regarding waste wool available in Kumaon region

The survey was conducted in the selected area of the hills of the Almora. The information was collected from the Kumaon woolens, Almora; Kumaon Hills; Institute of woolens manufacturing & Gandhi Ashram (Haldwani, U.A.)

The information regarding the different types of waste wool being used, types of product, production process, dyeing methods of woolen fibers and fabrics, was collected by interview as well as through observation method. There are mainly two types of waste wool, which can be used further for developing new useful products are:

1. Reprocessed wool—It is the fiber that has

been reclaimed and remanufactured from 'unused wool' means wool, which has never been reduced back to fiber state & again formed into a consumer product. It is commonly obtained from the waste, from worsted mills; knit goods mills, clothing manufacturers etc.

2. Reused Wool—It means wool fibers, which have been used in consumer products, after which they have been reduced back to the fiber state and again formed into a consumer product. It is commonly obtained from used woolen garments, rags etc.

The three main classes of reprocessed and reused wool fibers are shoddy, Mungo and extract.

Shoddy includes fibers obtained from cloth that has been felted but slightly, such as worsteds and knitted goods. These fibers are ½ inch or more in length. However, shoddy fibers are usually mixed with short fleece of wool in the production of woolen yarn.

Mungo refers to a class of fibers produced from fabrics that have been heavily fulled or felted. The severe treatment necessary to reduce this type of cloth to the fiber state injures the fibers and the heavy felting given the original cloth tends to destroy the felting property.

Extract wool is obtained from mixed goods, that is, wool blended with cotton rayon or other vegetable fibers.

Process of cloth preparation from reprocessed/reused wool

To improve the quality of these fibers and to increase their felting properties they are blended with the good quality wool. Then this blended mass is prepared in the form of sheet, which is generally of 1-2" in thickness.

According to the manufacturers of Kumaon hills, the heavily coated blended mass is rubbed

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with soap & then this mass is rolled & kept over night. Then next day this mass is heavily milled. The phenomenon is called felting it is matting of fibers.

Process of preparing woolen bed sheet from reused wool—The deficiency of wool industry is made up by collecting waste and discarded wool materials such as rags, pullovers, yarns and then passing these materials through special machines, which scratch up the material into loose fibers.

Blending—Then these loose fibers are blended or mixed together at this point. It may be blended with the better grades of wool. Usually in the manufacturing of this union fabric, a small amount of cotton is blended with these loose fibers.

Spinning and Weaving—The blended mass is pulled out, elongated and twisted. The amount of twist determine the character of the yarn which in turn determines the appearance and to some extent, the weaving qualities of the finished cloth. The yarn is then used to weave woolen bed sheet or blankets.

Product Development—Various decorative household and home furnishing articles have been prepared by using interesting colour combinations and various techniques such as:

1. Woolen Bed sheet
2. Blanket
3. Wall panel
4. Folder
5. Pen-Pencil holder
6. Playing cards holder

The techniques used for the preparation of above mentioned articles were :

Weaving—It involves interlacing of two threads, i.e. the active weft crossing the passive warp at right angle. Handloom was used to make bed sheet and blanket. Cotton yarns are used as warp yarns and blended yarns (wool & cotton blend) are used for filling (Blending ratio 1:1)

Felting—Felt was prepared with reused wool fiber and cotton fibers in the ratio of 70:30 respectively. This felt was used in the formation of door mat, wall panel, table padding etc. Embroidery and dyeing of felt can carry out to improve its appearances.

RESULTS AND DISCUSSION

Waste wool available in hilly region of Almora can be obtained during the processing of wool, from waste wool of old knitwear's and also from wool remained after sorting. Out of these the wool obtained during processing is mainly used for making seat-covers or 'Namadas' a kind of 'Dari'. This can be prepared by felting of the waste wool fibers, which are coarse in texture, and of yellowish brown colour. Its quality and appearance can be improved through blending, dyeing and embroidery.

Recovered wool is quite hygienic to use. Its main drawback is its inferior quality. Obviously, the treatments involved in freeing it from vegetable fibers and dyes as well as the mechanical treatment, involve them in a certain degree of degradation and fiber breakage. However, by mixing this wool with virgin wool, these defects can be largely mitigated. So, waste wool can't be used for wearing purposes due to less tensile strength and drivability. Felt can't be used for clothing, but it is especially adaptable for blocking into hats. Felt is also suitable for slippers, shoe insoles and table padding. Because of its isolative and noise absorptive properties, felt has various industrial uses.

Besides these waste wool can be used in a number of decorative and functional articles, such as blankets, shawls, bed sheets, wall panel, doormats, folder, pen-pencil holder etc.

CONCLUSION

Thus, the present study has explored that waste wool has a great potentials for commercial explorations. It can become source of income and employment to rural people living near wool industries. Disposal problem of waste wool can be put into suitable use, small scale industries based on utilization of waste wool can help in boosting the economy of the region and women can easily adopt the simple technique to make utility articles and can support their families with an additional income.

REFERENCES

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