

Research Paper :

Natural substitute for synthetic cleaning agents

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ABSTRACT

Aritha and Shikakai, the natural cleaning agents which have been used for cleaning of ornaments since long time were used as cleaning agents for washing fabrics like cotton, wool, cots-wool, polyester cotton and polyester for the present study. A detergent was used to compare these natural cleaning agents. The cumulative property of natural and synthetic cleaning agents were also studied. Different concentrations were 0.5g/l, 1.0g/l, 2.0g/l, 3.0g/l, 4.0g/l, 5.0g/l, 6.0g/l. The ratio 50:50 was used for combination. To study the effect of cleansing agents, the fabrics were soiled with carbon emulsion using sponge for application of the soil. The washing was done in a fabricated wash wheel in the cleaning solution along with pieces of sponge to prevent redeposition of soil on the sample. The conditions for washing were M:L=1:30, temp 30C, time=15 min. The samples were assessed using grey scale. For aritha, the per cent cleaning efficiency improved when combined with detergent. It was same for acidic as well as alkali side especially for wool and wool blend. The per cent cleaning efficiency of Shikakai improved with combination with detergent. It worked better on polyester and polyester cotton than Aritha. natural cleaning agents and some what gave better results when combined with detergent.

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The progress in laundry detergents in the last few decades has already significantly improved its profile. Today the trend is towards the environmental compatibility of the detergents. Latest detergents known as compact detergents are characterized by absence of fillres and presence of correspondingly high proportion of active matter.

Soaps and detergents have been identified by the central pollution board as the product which is not eco-friendly. Certain characteristics have been laid down. According to these recommendations a detergent :

- Should be free from unpleasant odour.
- Should possess good lathering and cleaning property.
- Should be non-injurious to the fabrics washed in it.
- Should possess only those active ingredients which have a bio-degradability.

To qualify as completely biodegradable, a detergent should be made from chemicals which decomposes rapidly and under all environmental conditions. For this a natural product with cleaning ability will prove to be the best. All substances used to make the ingredients for cleaning products are found in nature. Very few substances

extracted from plants or on the earth are used without further processing to obtain ingredients that can perform a cleaning function.

Manufacturers of some of the shampoo claim the use of natural products like aritha, Shikakai and their products to make it environment friendly and safe for hair. Aritha and Shikakai, the natural cleaning agents, of the present study have been used since antiquity for cleaning metals, jewelleryes and hair.

The present research was carried out to study the cleaning efficiency of the natural cleaning agents (Aritha and Shikakai) on different fabrics with a soil (Veereghavan, 1986; Nair, 2004). It was expected that Aritha and Shikakai will give satisfactory results on wool as it is being used to clean hairs in the form of shampoo. With the change in pH i.e. to alkaline pH, these are expected to work on cotton, synthetics and blends. The extended utility of these products will help the economic conditions of tribal, who collect these products and supply to the city dwellers.

EXPERIMENTAL PROCEDURE

The experimental work included

- Preparation of samples for laundering.
- Extraction of the content from Aritha and