STUDY OF SANITARY NAPKIN(S) PROPERTIES COMMERCIALLY AVAILABLE IN INDIA

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EXTENDED ABSTRACT

According to some estimates, only 12% women in India use sanitary napkins today, mainly because of lack of affordability, accessibility, awareness and disposability. The Ministry of Health and Family welfare is promoting menstrual hygiene among adolescent girls in a big way, to improve the health of Indian girls and women. Currently, the sanitary napkin market is dominated by large multinational companies. In the last few years, some local companies as well as several NGOs have started manufacture and sale/distribution of sanitary napkins in the country. Therefore, the market is flooded with various types of sanitary napkins.

In a sanitary napkin, absorbent layer is the main component which is made from a natural cellulosic material (pulp). Most of the premium quality sanitary napkins also contain synthetic super absorbent polymer (SAP) along with pulp in the absorbent core. However, very less studies are carried out on testing the absorbency of sanitary napkins. Therefore, in current study the absorbency of core layer is tested for different types of sanitary napkins.

Key Words: Sanitary napkin, Absorbent layer, Absorbency.

1. INTRODUCTION

Menstruation comes with many changes in a woman's body. Earlier women used old ragged clothes, ashes and sand to absorb menstrual fluid. But as the menstrual hygiene awareness is increasing women have shifted to sanitary napkins. The napkins available in the market vary in terms of many factors like size, price, thickness, number of layers, nature of degradation and absorbency. Absorbency either in free state or under load is the one of the most important factor to determine the performance of a hygiene product. IS 5405-1980 standard is available to test the specifications of sanitary napkins. This standard is more like a pass fail system where particular amount of blood is poured on the centre of sanitary napkin, over which the load of 1kg is put for 1 minute to check the leakage from napkin.

Moreover, People have used the absorption methods to test the napkin which are generally used for other types of products. For example, the standard test method for surface water absorption of terry fabrics and Standard Test Method for absorptive capacity for Felt was used

by one study [1]. Besides this, the syringe method was employed by one study where blood was poured all over the surface of the pad till the maximum capacity is not reached [2]. All the absorbency studies are carried out on complete sanitary napkin. No absorbency have carried on the core layer of a sanitary napkin. Hence, there is need of the test method of absorbency for core layer of sanitary napkins.

Therefore, this research is focused on developing a robust laboratory test method which can easily be used to test the absorbency of core layer. The reproducibility of the method has been carried out using 15 different commercially available sanitary napkins in India. Absorbency in free state and under load has been measured using four different test fluids.

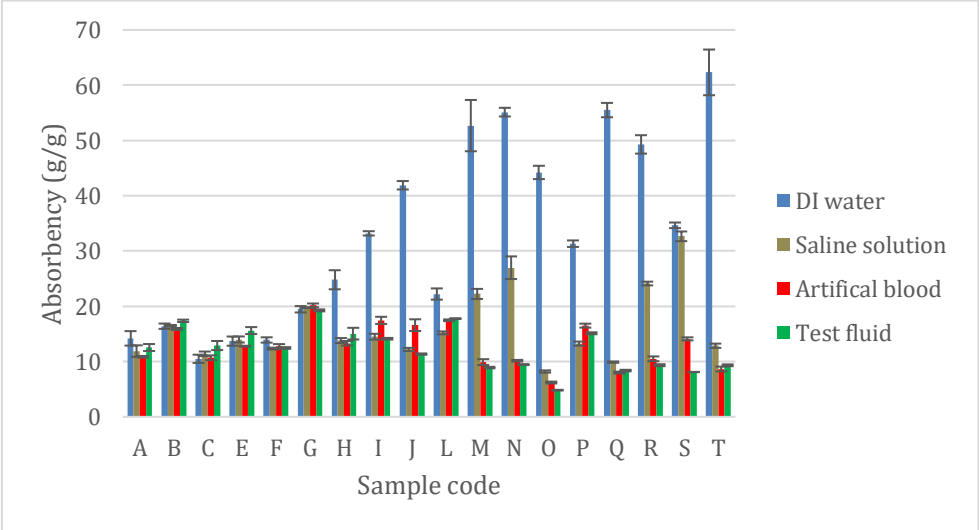
2. EXPERIMENTAL

Material and Method

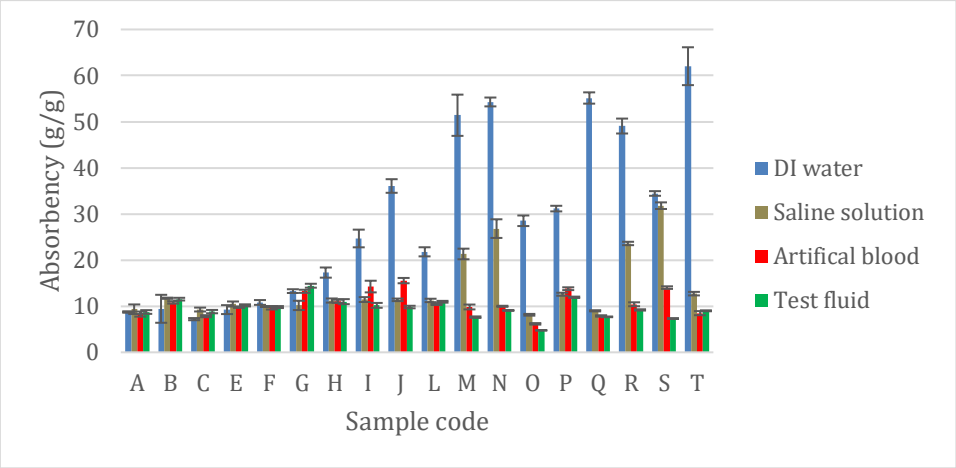
The sanitary napkins procured were coded as A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S and T. The napkins were tested with the help of Burette method fluids using four fluids i.e. Deionized (DI) water, saline solution, artificial blood and test fluid.

Absorbency of core layer

A sample of 5cm diameter from the absorbent layer was cut and used to test the absorbency (free and under load) using burette method. The absorbency without load and under load is shown in Graph 1 and Graph 2 respectively. The absorbency under load is important characteristic for a sanitary napkins to be said as good quality. The water absorbed by napkins containing SAP is exceptionally high (17-62g/g) compare to non-SAP napkins (8-13 g/g).



Graph 1. Absorbency by burette method without load



Graph 2. Absorbency by burette method with load

The saline solution absorbed by napkins containing SAP is 11-31g/g whereas for non SAP napkins it is 9-12 g/g. The less absorbency in case of saline is due to the osmotic pressure. The menstrual fluid and test fluid absorbency were quite different. Artificial blood absorbed by napkins containing SAP is 6-16g/g whereas for non SAP napkins it is 7-13 g/g and test fluid absorbed by napkins containing SAP is 5-12g/g whereas for non SAP napkins it is 8-14 g/g.

3. CONCLUSION

The sanitary napkins vary in the physical characteristics. It is because the different sanitary napkins are meant to absorb different level of menstrual fluid. Burette method can be used to test the absorbency (in Free State or under load) of core layer of a sanitary napkin and the absorbency study of different napkins using various fluids will be helpful while designing the core layer of a sanitary napkin.

4. REFERENCES

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