

Microbiological control of the cosmetic material during 2004 and 2005 in Iran

N. RAHIMIFARD^{1,2*}, SH. SHOEIBI^{1,2}, M. PIRALI HAMEDANI^{1,2}, M. SALEH³, F. BAGHERI⁴, SH. SAADATI², Z. NOORI², B. PIROUZ² and SH. ASGHARI²

¹Food and Drug Laboratory Research center (FDLRC), Tehran (Iran).

²Food and Drug Control Laboratories (FDCLs), Ministry of Health (MOH), Tehran (Iran).

³Quality Control Dept. of Research and Production Complex, Pasteur Institute of Iran, Tehran (Iran).

⁴Microbiology Department, Pharmaceutical Sciences Branch, Islamic Azad University, Tehran (Iran).

(Received: June 10, 2008; Accepted: August 10, 2008)

ABSTRACT

Cosmetic and sanitary materials are of the most consumed goods of the state and due to the diversity and extension of the consumptions concerning this material group, microbiological control is very important and substantial. Quantity of 141 samples in 2004 and 169 samples until January 2006 were cultivated in a completely sterilized situation. From 141 samples tested in 2004, 2 samples were inconsumable and in 2005, from 169 tested samples 7 were discovered being inconsumable. Higher quantity of the total bacteria and the existence of coliform and *pseudomonas aeruginosa* in the inconsumable samples are of important issues.

Key words: Cosmetic and sanitary material, microbiological controls.

INTRODUCTION

Cosmetic and sanitary materials are of the most consumed goods of the state and due to the diversity and extension of the consumptions concerning this material group, microbiological control is very important and substantial. Most of the cosmetic and hygienic materials are in touch with the skin which is the first defense system of the human's body. Some of such materials are in direct contact with eye (that is one of the most sensitive parts in the body of the humankind) and some others are in touch with ear, urethra, and so on. Therefore, any inconsiderable contamination in these materials may result in several difficulties and incidents including ringworm and acute bacteria diseases. Among the most known bacteria in this field, one may refer to *Pseudomonas aeruginosa* which hardly responds to antibiotics. Among the other significant and considerable bacteria in

microbiological control, we may refer to *coliform bacillus*, *staphylococcus aureus*, and mesophile bacteria that provide the suitable situation for the growth of pathogens.

MATERIAL AND METHODS

For the microbiological control of the cosmetic material, the main items may include counting mesophile aerobic bacteria, investigating the existence of coliform, *Staphylococcus aureus*, *pseudomonas aeruginosa*, molds, and yeast.

Existence of even one colony from the above microorganisms in the culture media results in the rejection of the product and the only allowed rate of the mesophile bacteria for the produced products for the consumption of children and in special eye lotions is 10^2 colony and for the remainder products, this rate is equal to $5 \times 10^2/g$.

For the microbiological control of the sanitary products, main items are as follows:

Counting mesophile aerobic bacteria, investigating the existence of *Coliform*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *enterococcus fecalis* that observation of one colony from the above microorganisms in the cultivation area results in the rejection of the product and the only allowed rate of the mesophile bacteria in every gram is equal to 5×10^2 .

Quantity of 141 samples in 2004 and 169 samples until January 2006 were cultivated in a completely sterilized situation.

DISCUSSION

From 141 samples tested in 2004, 2 samples were inconsumable and in 2005, from 169 tested samples 7 were discovered being inconsumable.

Higher quantity of the total bacteria and the existence of coliform and *pseudomonas aeruginosa* in the inconsumable samples are of important issues.

Among the rejected samples, we may refer to variety of lotions and hand washing soaps. Higher range and number of bacteria in these samples represents the importance of paying attention to the microbial control of different production lines and the microbial test of water used in production.

Hopes that with the application of precise and extended control of the production lines and with the execution of microbial test in case of water through the related experts more secure and safe products be supplied to the local and foreign countries.

REFERENCES

1. Adams MR, Moss MO: Food Microbiology, second edition, Royal Society of Chemistry, (2000).
2. Blackburn CW, McClure PJ: Foodborne Pathogenes, Hazard, risk analysis and control, CRC (2002).
3. Katzung BG: Basic and Clinical Pharmacology, sixth edition, Appleton & Lange (1999).
4. Miliotis MD, Bier JW: International Handbook of Foodborne Pathogens. Marcel Dekker Inc., (2003).
5. Wallach J: Interpretation of Diagnostic Tests, fifth edition, Little Brown (1992).
6. Forbes BA, Sahu DF, Weissfeld AS: Bailey and Scott's diagnostic microbiology 11th ed. Mosby 2002.
7. Forbes BA, Sahu DF, Weissfeld AS: Bailey and Scott's diagnostic microbiology, 10th ed. Mosby, (1998).
8. Koneman EW, Allen SD, Janda WM, *et al*: "Diagnostic Microbiology." Fifth ed., Lippincott, USA (1997).
9. Mandell GI, Bennett JE and Dolin R: Mandell, Douglas and Bennett's principles and practice of infectious Diseases, fifth ed. Churchill livingston, (2000) 4.
10. Murray RP, Baron EJ, Pfaller MA, Tenover FC, Tenover RH: Manual of Clinical Microbiology 7th ed. ASM press (1999).
11. Murray RP, Rosental KS, Kobayashi GS, Pfaller MA: Microbiology, Fourth ed. Mosby Inc., (2002).
12. Walker T. Stuart: Microbiology, Saunders text and review series (1998).
13. Winn W, Allen S, Janda W, Koneman E *et al*: "Koneman color atlas and textbook of Diagnostic Microbiology." sixth ed., Lippincott Williams & Wilkins (2006).