

Investigation of Hair Dyeing with Sepia Melanin

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1. INTRODUCTION

The interest of hair dyeing has been growing due to the care for self-appearance by both women and men. Most of people try to change their hair style variously by hair coloring and permanent wave. But repeated treatments causes to hair damage, skin illness, optical defect, and alopecia.

Therefore, there is increasing demand on the hair coloration technique using non-toxic and bio-compatible hair colorants from natural resource. Many natural materials are used for coloring of hair such as henna. They has also been studied for dyeing, food, and cosmetic applications.

The purpose of this study is to dye human hair with sepia melanin, and suitable hair coloration method is investigated.

2. EXPERIMENTAL

2.1 Extraction of melanin powder

Sepia melanin was gathered from squid's innards and then added in 1% sodium hydroxide of squid ink for dissolution. Squid ink was adjusted on pH 3 with 10% acetic acid solution and the sepia melanin was precipitated. After wash with water three times, the melanin was dried for 24 hours on vacuum oven. Fine melanin powders were obtained.

2.2 Dyeing process

Human hair was dyed with the melanin solution, containing sodium hydroxide and sodium hydro-sulfite. After the hair was dyed depending on melanin concentration under the liquor ratio of 25:1 at 80°C for 90 minutes, the dyed hair was oxidized with 1% of hydrogen peroxide.

3. RESULTS AND DISCUSSION

Fig. 1 showed that the K/S values and percent exhaustion of the dyed hair. The K/S increased with

increase in melanin concentration.

The highest dyeability of hair was achieved with 9% dye concentration. It also can be seen that the exhaustion of the remaining liquor decreased with increase in melanin concentration.

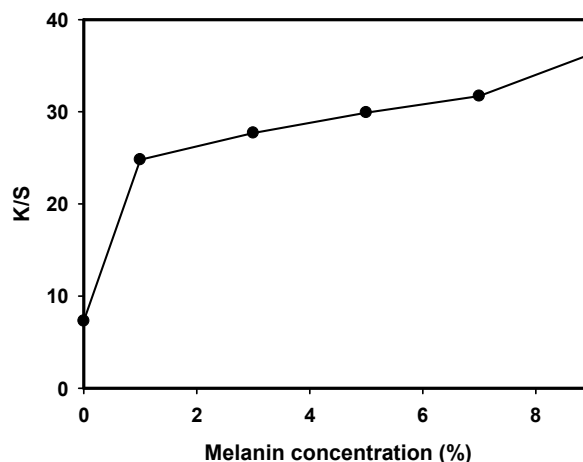


Fig. 1. Effects of dye concentration on K/S.

4. CONCLUSIONS

The sepia melanin can dye the human hair to deep shade with excellent fastness. The dyeability of sepia melanin to hairs was investigated.

5. ACKNOWLEDGEMENTS

This research was financially supported by grant No.RTI04-01-04 from the Ministry of Knowledge Economy(MKE).

6. REFERENCES

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