

Colour tolerance for recycled paper

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1. INTRODUCTION

An environmental problem is one of the important problems for ours now. The recycling system has been established to this problem. Actually, many recycled products have come in our daily life. In this study, three kinds of colour tolerances for usage of the recycled paper product were investigated. The colour tolerances investigated were whether the colour can be used or not, whether it is available for practical usage or not, and whether it can be bought or not.

2. EXPERIMENTAL

In the experiment, each subject was asked for replying to three kinds of questions by yes or a no from one colour sample. Moreover, the subject was also asked to answer supposing three kinds of recycled papers for photocopy, notebook, and newspaper.

The color samples were made so that the vividness of two series might be set as each color and the color might change gradually about four colors of red, yellow, green, and blue with white as the starting point toward nine directions aligned with the direction which goes to black, as shown in Figure 1. The size of coloured paper used was A4, and the colour of the printed characters was black. The number of colours printed for the papers was 55.

A total of 36 Japanese students, 27 males and 7 females, participated in this experiment. Their ages ranged from 19 to 25 years old. A viewing cabinet The Judge II produced by Macbeth company was used and the subjects judged under D65 light condition.

3. RESULTS

The raw data in terms of yes or no for each colour sample were averaged to represent each subject's judgement, and calculated the percentages from 0 to 100. Here, 0 means that all the all subjects answered it as no, and 100 means that all the subjects answered it as yes. These data were given in figures for each colour direction such as neutral and vivid red. Figure 2 shows the colour tolerance for photocopy paper on neutral colour. Figure 3 shows colour tolerance for notebook and its 50% line.

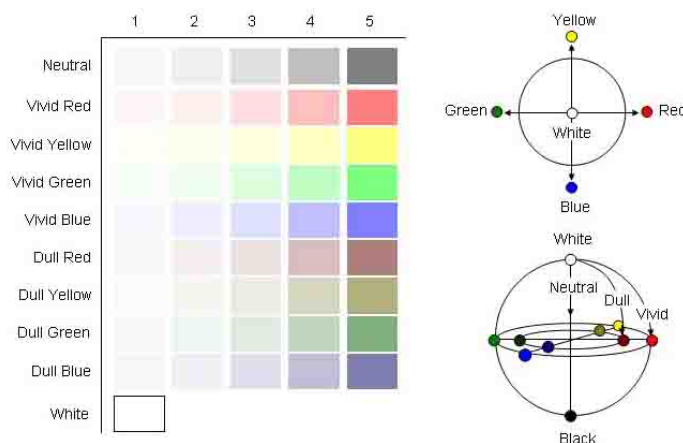


Figure 1: Colour samples used in this study and their colour directions

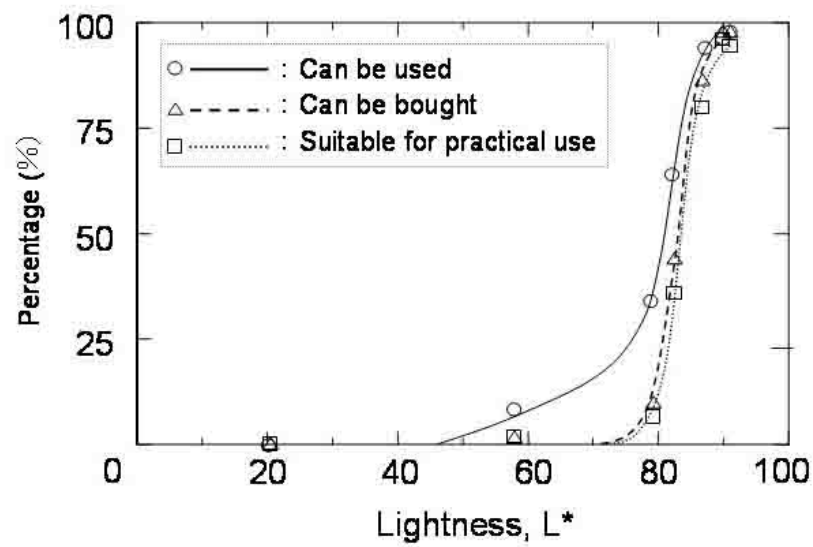


Figure 2: Colour tolerance for photocopy paper, neutral colour

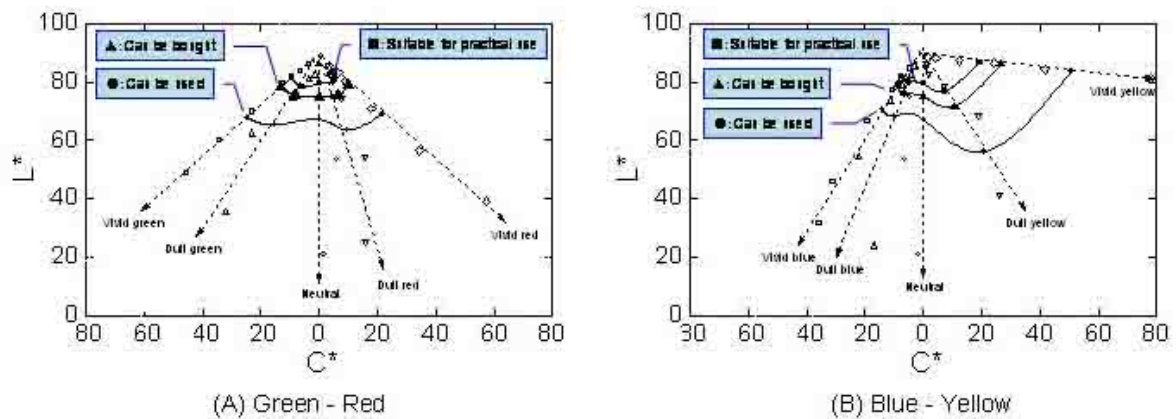


Figure 3: Colour tolerance for notebook, 50% lines