Sunisa Kamukamakul 2011: Dyeing Silk with Reactive Dye by Using the KU.3 Yarn Dyer. Master of Science (Home Economics), Major Field: Home Economics, Department of Home Economics. Thesis Advisor:
Assistant Professor Suteeluk Kraisuwan, Ph.D. 50 pages.

The objectives of this research were to study 1) the color characteristics of reactive dyed silk by using the KU.3 yarn dyer 2) the effects of silk quantity on the color values of the dyed silk 3) the colorfastness to washing of the dyed silk and 4) the effects of silk quantity on the colorfastness of the dyed silk. Dyeing experiments were performed according to the Completely Randomized Design. The independent factor consisted of four different quantities of silk. Dyeing was performed with a liquor ratio of 1:20, dye concentration of 5 percent on weight of silk, at room temperature for 90 minutes. The color values, and colorfastness to washing were measured and analyzed.

It was found that the lightness (L*) values of the dyed silk were between 43.41 – 43.58 ; the greeness (a*) values were between 12.54 – 12.51 ; the blueness (b*) values were between 15.63 – 16.21 ; the brightness (C*) values were between 20.24 – 20.53 ; and the hue (h*) degrees were between 230.91 – 231.32. The color obtained was semi-bright dark blue green. And it was also found that the quantity of silk had no significant effect on the color values at .05 level. The total color difference values between each pair of the experimental silk skeins were very low. The study on colorfastness to laundering of the dyed silk revealed that the quantity of silk had no significant effect on the color change and the color staining values at .05 level. The colorfastness was at an outstanding – a superlative level.

The results of this study showed that the KU.3 yarn dyer had a good efficiency in dyeing silk yarn with reactive dye in any quantity from 0.5 – 2.0 kilogram without color difference. Moreover, it also provided an outstanding levelness and colorfastness. It is therefore recommended to be used in communities to further improve the quality of dyeing silk of local silk producers.

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