Dyeing of Silk Fabrics with Natural Indigo
Extracted from Polygonum tinctorium

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Colorants were prepared by extraction of natural indigo which was harvested just in the blooming season (in the late of July). 100g of fresh leaves soaking in 1ℓ water was kept at 30°C for 30 hours. A solution of 3g/ℓ calcium hydroxide was added into it to precipitate dye substance and it was freezing-dried into powder form. The dyeing mechanism and fermentation conditions were investigated. Its colour fastness was studied as well. The results obtained are summarized as follows;

When indigo powder was prepared in combination of 80g of fresh leaf/ℓ and 3g/ℓ of calcium hydroxide and at 30°C, H/V:C of indigo represented a low value as PB hue. K/S value of silk fabrics was higher at 95°C for 20 min. than at 40°C for 20 hours. Furthermore, K/S value of silk fabric was raised by the addition of 3g/ℓ of glucose and 3g/ℓ of NaOH.

K/S value increased as extending of dyeing time when dyed till 2 hours at 30°C. K/S value decreased in order of 30°C, 40°C and 50°C, at the various dyeing temperatures and dyeing concentrations, and colour fastness ranged from 4 to 5 grade in terms of washing, perspiration and light fastness.