

Title: Effect of natural thickener on printing performance over cotton woven fabric

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Abstract: Execution of natural thickener (wild [taro](#) corm) over pretreated cotton [woven fabric](#) with reactive dye has been explored in this [research work](#). Taro root was collected from Sherpur in Bangladesh and made into a [fine powder](#) using a grinder. Thickener pastes were prepared by using different concentrations of taro powder, then their [viscosity](#) was measured to find out the difference with [sodium alginate](#) thickener, which is traditionally used for reactive printing. A suitable thickener stock paste concentration was selected from a number of trials and depending on the result of visual sharpness of the printed samples. A suitable reactive printing method was selected between all in (1 step) and [2 step methods](#) of reactive printing and finally the amount of thickener on the printing recipe was optimized. The [color fastness](#) to wash, color fastness to rubbing, bending length, K/S value, levelness, penetration%, print paste adds on and visual sharpness were measured to assess the printing quality. The findings indicate that when Taro [corm](#) powder is combined with boiled water, it produces a solution with higher viscosity. Additionally, a mixture of 15 % taro and boiled water yields the most distinct print outline. Comparatively, the 2-step reactive printing method offers a superior outline compared to the 1-step (all in one) method. Moreover, using 50 to 60 gm of taro corm thickening paste for every 100 g of print paste results in a higher K/S value. The results revealed that the wild taro corm could be used successfully as thickener for reactive printing. Finally, the cost was also calculated, and it was found economical as well compared to [sodium alginate](#).

Keywords: Wild taro corm; Natural thickener; Reactive printing; Cotton woven fabric; Print paste viscosity; Color fastness;

<https://doi.org/10.1016/j.heliyon.2024.e31224>