

Investigations on Comfort, Handle, Pressure Values and Fit of Woven Stretch Fabrics for Sari Blouse.

Supervisor

Candidate

Dr.G.Thilagavathi

Mrs.Nirmala Varghese

The research aims to develop the woven stretch fabrics for women's sari blouse that can adhere to the shape of the body better with comfortable fit and pressure comfort. As a first part of the thesis, fit rating scale has been developed for analysing the fit of sari blouse with the fit attributes such as ease linear index value, number of folds and seam line deviation. The developed woven stretch fabrics are , one set with 50s and 60s cotton yarn in warp with 40s, 50s and 60s cotton core spun lycra in weft and another set with 2/75Nm and 2/120Nm silk in warp with 40s, 50s and 60scotton core spun lycra yarn in weft. In addition the respective control samples are developed with 60s cotton yarn in warp and weft and another set with 2/75 Nm silk in warp with 60s cotton in weft for comparing the results. The influence of fabric specifications on thermal comfort properties, tactile, total hand value and stretch properties of cotton core spun lycra fabrics were studied. Further the pressure comfort analysis has been done on blouses constructed using these stretch fabrics and pressure values of woven stretch fabrics are compared with the commercially available sari blouse materials. In the second phase, cotton, silk and polyester stretch fabrics were developed using 60s cotton core spun lycra and polyester lycra. Finally, lustrous woven stretch fabrics are developed using silk, silk/nylon lycra hybrid yarns. Silk yarn of 20 denier in warp and hybrid yarn having a resultant count of 69 denier is used as weft yarn and stretch fabrics were woven in plain, crepe and sateen weave. The effect of weave on handle, comfort, stretch, fit and pressure values were studied using these materials. Totally, Sixty three blouses (21 samples * 3 figures) were constructed to analyze the fit and pressure measurement. All the woven stretch fabrics developed exerted pressure in the comfortable range of 3-15mmHg. Thus fabric physical properties, stretch properties, mechanical properties and total hand value significantly influenced the fit, pressure distribution and comfort of the stretch blouses. This newly developed woven stretch fabrics being new and unique of its kind were suitable for sari blouse, as the weft yarn stretches the fabric horizontally at ease in accordance with body movement at the areas such as bust, waist and upper arm and spring back to their original size and thus avoiding wrinkles giving proper fit and pressure comfort to the blouse. Further, the constructed woven stretch blouses in size 12 fitted well on subjects with sizes 10 and 14, size 16 fitted well on subject of size 18, and size 22 fitted well on size 20 and 24.