ABSTRACT

Starch is used excessively in different industries *i.e.* textile, food and bio-plastic industry. The increasing use of starch has led us to find out alternate sources of starch for better production with more beneficial effects and low cost. For this purpose, potato is used for the production of starch. Potato is a staple crop and along with being rich in starch, it is also an affordable food which is used as a rich nutritionist diet since hundreds of years. The starch was extracted from potato and was subjected to several biochemical tests to confirm the presence of starch. Starch was subjected to physiochemical tests where its moisture content was recorded as 66.2%, ash content was 8.64%, water solubility was 3% and swelling power was 17%. Starch nanoparticles were made and SEM, FTIR analysis of starch and nanoparticles were performed. The application of starch in textile industry was checked. The extracted starch was checked against the market available starch (Corn starch). The results of the tear strength showed that the potato starch had best results on 6 g/L in warp side and 4 g/L in case of weft side of the fabric and the results shown by potato starch were better than both unfinished fabric and corn starch finish. Tensile strength results showed that the corn starch showed best results on 4g/L in warp and 10 g/L in case of weft and the results shown by corn starch were better than both unfinished fabric and potato starch finish. Gram square per meter analysis of potato starch showed best results on 6 g/L and these results were better. There was no significant impact of potato starch coating on washing fastness both in case of color change and staining on multi-fabric. Potato starch has better quality results as compared to corn starch. It was cost effective and easy to handle. The use of natural product and extensive research on natural product is better to reduce the impact of climate change by reducing the toxic load in waste water.