

ABSTRACT

Rice is one of the basic foods and leading crops in the world. It provides almost 35-59% of the energy consumed in Asian countries. In Pakistan, there are many rice varieties introduced by many institutions. Basmati is internationally eminent for its exclusive and delightful aroma, taste, and texture. Starch was extracted from this rice variety, and biochemical tests were performed. Physicochemical properties i.e. moisture, ash, amylose content, % solubility, and swelling power were also determined. Starch nanoparticles were made by acid hydrolysis and ultrasonication methods. SEM and FTIR tests were performed to check the quality of the starch and its nanoparticles. The results for rice starch were compared with industrial (corn) starch by performing GSM, tear strength, tensile strength, washing fastness, and shade strength tests in the textile industry. It is confirmed that rice starch has better results as compared to market available corn starch. It is a biodegradable, inexpensive, and environment-friendly finishing agent which can replace synthetic and other expensive in the textile industry.