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ABSTRACT

Soy protein adhesives have great potential as sustainable eco-friendly adhesives. However, low adhesion under wet conditions hinders its applications. The objective of this research was to enhance the water resistance of soy protein adhesives. The focus of this research was to understand the effect of protein to lignin ratio and lignin particle size i.e. (large (35.66 μm), medium (19.13 μm), and small (10.26 μm) on the adhesion performance of soy protein adhesives as well as to characterize its rheological and thermal properties. Results showed that the lignin particle size and the protein to lignin ratio greatly affected the adhesion performance of soy protein adhesives. The addition of lignin slightly increased the viscosity, spreadability, and thermostability of soy protein adhesives. The wet strength of soy protein adhesives increased as lignin particle size decreased. Soy protein mixed with small size lignin at a protein to lignin ratio