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Antioxidant activity and strength properties of sumac (*Rhus coriaria* L) coated food contact papers

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Paper is made from cellulose, a natural polymer and has remarkable properties. Hydrogen bonded structure gives the paper strength against their lightweight construction and heat durability without thermal decomposition. Also, porous surface coating color easily applies with papers. Moreover, it is shown that with natural antimicrobial or antioxidant agent coated paper extends the shelf life of food products. *Rhus coriaria* L., commonly known as sumac, grows wild in the region of the Mediterranean coastline in Turkey. Sumac has significant phenolic phytochemical constituents as tannins, flavonoids, anthocyanins, organic acids, flavones, proteins and fiber. Total phenolic (TP) of sumac powder applied was 732 mg of gallic acid/100g while antioxidant activity as effective scavenging concentration (EC50) on DPPH radical was 6.02µg/mL. Sumac is natural bioactive agents that suitable material for coating color due to its anthocyanine components. Also after coating with sumac powder, several fatty products can be protective from oxidation. In this study, wrapping paper, paper board and test liner chosen as base paper. Starch was used as a binder. Sumac was added to the starch solution at 10% (w/w) applied on one side at 4.5 g/m². The paper was coated with #0 drawdown bar and then tested the paper strength properties. As a result, sumac coated paper gained antioxidant activity. However; coated paper had lower strength properties comparing to uncoated paper, but this strength lost could be relieved using wet strength agents.

Biography

Ahsen Ezel Bildik completed her bachelor, master and Ph.D. studies at Istanbul University, Faculty of Forestry, Forest Engineering Department (Istanbul). She is currently working as researcher in Istanbul University. She is expert on packaging quality and quantity. Her specific study areas are on nutraceuticals additives of paper making and packaging, paper surface coating applications with antimicrobial materials and corrugated board strength properties evaluation.

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