Preparation of Heat Cured Starch/PVA Blend Films by Adding Ascorbic Acid as an Alternative Additive

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Starch/PVA blend films added ascorbic acid (AsA) are prepared as an alternative additive with/without heat curing and their optical physical properties are examined including mechanical properties, degree of swelling, solubility, water vapor absorption, thermal analysis, and biodegradability. Specific surface area, pore volume, and topography of the films with/without heat curing are also investigated in BET experiment and AFM analysis. The results indicate that the cured films possess higher physical and thermal properties compared to that of non-cured films. The mechanical, thermal and water barrier properties of AsA-added film are found to be superior to other films with various additives (glycerol and xylitol). The biodegradability test revealed that the prepared films are degraded by about 40-80% after 165 days.