

## Effect of Whey Based Film Coatings on Various Properties of Kashar Cheese

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**Abstract :** In this study, the effects of whey protein based films on various properties of kashar cheese were examined. In the study, edible film solutions based on whey protein isolate, whey protein isolate + transglutaminase enzyme and whey protein isolate + chitosan were produced and Kashar cheese samples were coated with these films by dipping method and stored at +4 °C for 60 days. Chemical, microbiological and textural analyzes were carried out on samples at 0, 30 and 60 days of storage. As a result of the study, the highest dry matter and total nitrogen values were obtained from uncoated control samples This is an indication that the coatings limit water vapor permeability. The highest acidity and pH values obtained from the samples as storage results were 3.33% and 5.86%, respectively, in the control group samples. Both acidity and pH rise in these groups, is a consequence of the buffering of pH changes of hydrolysis products which are as a result of proteolysis occurring in the sample. Nitrogen changes and lipolysis values, which are indicative of the degree of hydrolysis of proteins and triglycerides in kashar cheese, were generally higher in the control group This result is due to limiting the micro organism reproduction by limiting the gas passage of the coatings. Hardness and chewiness values of the textural properties of the samples were significantly reduced in uncoated control samples compared to the coated samples due to maturation. The chitosan film coatings used in the study limited the development of mold yeast until the 30th day but after that did not yield successful results in this respect.

**Keywords :** chitosan, edible film, transglutaminase, whey protein

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