ABSTRACT

The guava fruit is a climacteric fruit that remains ripening after harvesting respiration is undergone in guava fruit and when guava continuously ripens guava has a very short shelf life. A response surface methodology was used and a total of 15 experimental runs were designed by Box-Behnken design using Design Expert Software (version 12). The edible coating is made of potato peel starch and combination with *Ficus religiosa* leaf extract and glycerol. The *Ficus religiosa* leaf extract (FLE) was employed at concentrations ranging from 500 to 2000mg/1000ml, Potato peel starch (PPS) was used from 1% to 2% and glycerol was from 0.5% to 1%. After applying the coating to the fruits, these were kept in the refrigerator for 12 days at 10 degrees Celsius and 40-45 relative humidity. Different physical analysis parameters (weight loss, firmness, color) and chemical analysis parameters (pH, total soluble solids, total chlorophyll, carotenoid content, total phenolic content, total flavonoid content, and antioxidant activity) were selected as responses to analyze quality attributes of guava during the storage period. After analyzing each response at every 4 days' interval, it was observed that experimental runs like Run 9(1.5% PPS, 0.75% glycerol, and 1250 mg/1000ml) and Run 10 (2% of PPS 0.75% glycerol and 2000mg/1000ml FLE) shows better than all treatments and Run 2(2% of PPS, 0.75% glycerol and 1250mg/1000ml) were not more significant in fruit quality during storage. Finally, it was demonstrated that the combined impact of the combination of PPS and FLE with glycerol.