

## ABSTRACT

Natural antioxidants have gained considerable interest in recent years for their role in preventing the auto oxidation of fats, oils and fat containing food products. Amla is known for its antioxidant activity for last 3500 years, but very few data is available regarding the antioxidant characteristics of amla seed and its application in food products. In the present investigation, three different forms of seed coat (powder, extract, encapsulated in the form of beads) were used as the sources of natural antioxidants. Amla seed coats were dried at three different temperatures (40°, 60° and 80°C) and its effect on the functional properties of seed coat were evaluated. Amla powder prepared at 60 °C had comparatively high radical scavenging activity (92.796%) than to the other temperature tested. Cookies made with natural antioxidants and synthetic antioxidant BHT was subjected to sensory studies, texture analysis, physical characteristics and chemical analysis. The cookies were prepared by 2.5% and 5% seed coat powder, extract and BHT was found acceptable by the panelist, while cookies containing encapsulated beads secured less rating by the panelist in terms of texture of the cookies. Same can be conducted by textural analysis, where cookies containing encapsulated beads were slightly harder in texture than the other cookies tested. Incorporation of antioxidant did not show any significant effect on the diameter; height; or spread ratio of the cookies at 5% probability level compared to control. Addition of antioxidant showed significant effect against the oxidation of cookies lipid. Cookies containing powder was observed comparatively more effective than to extract and beads against increase in peroxide value and free fatty acid content during 30 days of storage at elevated temperature.

**Keywords:** Amla seed coat, Cookies, Antioxidant, Peroxide value, Free Fatty Acid.