

## **Effect of pH on physicochemical properties and stability of sodium caseinate-pectin stabilized emulsion.**

### **ABSTRACT**

The main objective of present study was to investigate the effect of pH (5-7) on the physicochemical properties of canola oil-in-water (o/w) emulsion stabilized using pectin and sodium caseinate. In the present study, the physicochemical emulsion properties assessed by measuring the zeta potential, average droplet size, apparent viscosity, turbidity, and creaming stability were considered as response variables. Canola oil-in-water (o/w) emulsion was prepared by mixing 10% (w/w) canola oil with 0.5% (w/w) sodium caseinate, 1.5% (w/w) pectin, 0.75% (w/w) propylene glycol and 0.2% NaCl. The results indicated that the pH and temperature had significant ( $p < 0.05$ ) effect on all the response variables studied. The highest creaming stability was observed at pH 5.0, which was attributed to multilayer formation in interfacial area. This observation could be explained by the fact that the pectin adsorbed to the droplet surfaces and increased the repulsion between the droplets, thereby preventing droplet flocculation. It was found that the average droplet size increased when pH increased from 5 to 7. The highest emulsion viscosity was also observed at pH 5; while the emulsion viscosity decreased as the pH increased from 5.5 to 7.0. This could be due to the negative effect of pH on emulsion viscosity, thus enhancing the creaming instability induced at higher pH ( $> 5$ ).

**Keyword:** Emulsion; Stability; Sodium caseinate; Pectin.