# **Effect of storing temperature on the structural changes of the hard boiled eggs**

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Hard boiled eggs are used widely in the world but once these eggs are stored under refrigerated conditions texture tend to change. It lead customer’s rejections due to its rubbery texture. Therefore objective was to check the effect of storing temperature on structure of hard boiled eggs. Medium sized eggs were purchased from a commercial farm and boiled under 95 0C for 15 minutes. Eggs were stored at 27, 4 and –18 0C for 48 hours. Textural changes were studied under FTIR spectroscopy. Texture profile was measured using Texture analyser and visual observation was done using Gemmological Microscope (KWS8000). Sensory attributes were done using 30 untrained panellists. According to the results, frozen eggs were showing low acceptance in all organoleptic properties checked (p>0.05). However the eggs stored more than 12hr at 27 0C could not use for the sensory analysis due to spoilage. Hardness of the texture of the frozen eggs increased while chewiness, Gumminess, springiness and cohesiveness decreased. Microscopic images confirm that with the storage of eggs under low temperature the reflection of light changes. FTIR data also confirm that the textural changes in bonds of Amide A (3271 cm-1), Amide I (1626.2 cm-1), Amide II (1539.0 cm-1), C=O stretch of COO- (1397 cm-1), asymmetric PO2- stretch (1240 cm-1). However the colour of the egg white did not show any significance difference (p>0.05) concluding eggs stored under -18 0C changes the structure drastically and storing at 4 0C does not change the structure of the egg white.

Key words: Boiled eggs, FTIR, Temperature, Textural changes