

Determination of Egg Compression Force in Texture Analyser

V. Kavan Kumar¹, Harsh Yadav², Kalpana², M. Gabor² and C.T. Ramachandra²

¹PG Scholar, Dept. of Renewable Energy Engineering, AEC&RI, TNAU, Coimbatore

²College of Agricultural Engineering, University of Agricultural Sciences, GKVK Bengaluru

*kavankumarreddy07@gmail.com

According to the USDA regulation, the eggs can be divided into three categories. The SI<72 and SI 72-76 shape index eggs were found to be more spherical than the SI>76. The unit mass of the eggs differed significantly when they were categorised. Hen's eggs with a shape index of less than 72% were shown to be heavier than those with a higher shape index. The shape index is proportional to width and inversely proportional to length, based on this shape index the rate at which eggs grow longer is faster than the rate at which they grow shorter as they grow older. The compressive force required to shatter the egg shell is determined in this chapter based on the physical features of white (broiler) and brown (indigenous) eggs. The physical properties of the egg play a significant influence in the design of appropriate equipment for eggshell hatching, usage, transportation, processing, and storage. The natural variety in egg form could be used as a criterion for designing food processing equipment for cracking and separating egg components. Shape index, geometric mean diameter, sphericity, roundness, surface area, volume, weight, thickness, density, and force are the key physical properties of the egg. Hardness, brittleness, adhesiveness, tensile strength, compression force, and other properties of materials are measured with a texture analyser. The compression force of an egg was calculated using a 75 mm cylinder probe and a 25 kg load cell. Before beginning the work, the texture analyzer settings for egg compression are completed based on the results obtained were used to design the egg processing equipments/devices.

Keywords: White egg, Brown egg, Hatching, Texture analyser, Compression force.