

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

MODELLING OF OSTRICH EGGS
USING CUBIC HERMITE CURVE

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

In this study Cubic Hermite Curve is applied to calculate the volume of the ostrich eggs. There are twelve different size of ostrich used as a sample to get the volume. Length, width and actual volume are the input measured to generate the calculated volume. Vernier caliper and measuring cylinder are used to get the measurement of the input. Archimedes Principal method has been used to measure an actual volume of eggs. In order to generate calculated volume, the best fitted curve of the ostrich eggs obtain by using the best fitted point in Cubic Hermite Curve equation. Besides that, the other way to determine the best fitted curve by comparison of error of three different gradient between calculated volume and actual volume.

1 INTRODUCTION

1.1 Introduction

Ostrich was also known as the “camel bird” is the largest and heaviest living bird in the world. The ostrich well known as camel bird because of its long neck, sweeping eyes, and prominent eyes as well as its jolting walk. One fact about the ostrich is their eyes is bigger than its brain. It measures almost two inches across, which makes it the largest eye among any land animal. For female ostrich they are light brown in color but for male, they have bold black and white coloring that they use to attract the female ostrich. Ostriches can sprint in short bursts up to 43 miles per hour (70 kilometers per hour), and they can maintain a steady speed of 31 miles per hour (50 kilometers per hour). The long can be about 10 to 16 feet (3 to 5 meters) only for one stride. Ostrich flops to the ground and remains still with its head and neck flat on the ground in front of it, when they senses danger and cannot run away.

Other than that, to help them keep predators at bay, they prefer to live in groups. They also can see long distance and can spot any kind of threat or danger from a far, since they have long necks and keen vision. Ostriches have some of the most sought and also can produce the strongest commercially available leather in the world after feathers. Ostriches are omnivores, which means they eat vegetation and meat likes roots, seeds, leaves, locusts, lizards, snakes and rodents. Ostriches can get water from the plant that they eat. Thus, they do not need to drink water. However, they do drink if they come across a watering hole.

Ostrich eggs also the largest one compare to any living bird eggs. It is not really weird because the ostrich itself is the largest living species of bird in the world. The ostrich egg is about 6 inches (15cm) in diameter and can weight up to 3lbs (1.3kg) with a thickness of 0.06 inches. The color range of the ostrich egg is pearl white to cream. Other than that, ostrich egg can provide a whopping 2,000 calories, 47 percent of proteins and 44.3 percent of fats. It also contain calcium, phosphorus and vitamin such as vitamin A, vitamin E, riboflavin and thiamine.