

**UNIVERSITI TEKNOLOGI MARA**

**TECHNICAL REPORT**

**THE RELATIONSHIP BETWEEN HEAT TRANSFERS IN BOILING  
EGGS WITH THE TYPES OF WATER USING  
PETER BARHAM'S FORMULA**

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## **ABSTRACT**

Boiling egg can be done in a simple way but it could be a problem when people did not know the perfect time to cook the eggs. Using suitable mathematical model, the exact time for the egg to be perfectly cooked can be determined. Various grade of eggs and different type of water will affect the time taken to get well cooked egg. The aim for this research is to compare the Peter Barham's formula with the experiments using different size of egg according to their grade (A, B, C, D, E) and two type of water. In this research, the concept of heats transfers in cooking have been studied and Peter Barham's formula was used to calculated the specific time for the egg to be perfectly cooked. An experiment of boiling eggs also had been carried out to verify the formula using two different type of water which are pure water and salt water. Different temperature which increasing temperature from 65°C to 85°C also has been used to know the time for the egg to be cooked. Temperature for each boiling also be recorded to know if the time cooked meet the numerical result. The results of the experiment are consistent with the numerical result. Which the higher the temperature to cook the egg, the shorter the time taken for the egg to be cooked. This study only focus on whole egg to be perfectly cooked using Peter Barham's formula which this can be observe more only on the yolk using others mathematical method.