

**Utilization of pumpkin (*Cucurbita maxima*) in the  
manufacture of jam and spread**

**By**

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## DECLARATION

The work described in this thesis was carried out by me, under the supervision of Professor Arthur Bamunuarachchi and Ms. Indira Wickramasinghe and a report on this thesis has not been submitted in whole or in part to any University or any other institution for another Degree/ diploma.

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**Dedicated to my parents and teachers**

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# **Utilization of pumpkin (*Cucurbita maxima*) in the manufacture of jam and spread**

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## **ABSTRACT**

Pumpkin is a very important vegetable as far as its nutritional value is concerned. Due to inappropriate post harvest handling and less usage in industrial applications in Sri Lanka, considerable amount is wasted. So far, no proper system has been introduced to preserve pumpkin. Therefore utilization of pumpkin in the manufacture of jam and spread is important.

The pumpkin jam got best characteristics with 23.77% of pumpkin pulp, 53.49% of sugar, 0.95% of pectin and 0.375% of citric acid. The ideal Brix value was 69<sup>0</sup>. Pumpkin spread gets best characteristics with 86.92% of pumpkin pulp, 1.79% of spices, 1.78% of vinegar, 5.56% of sugar, 1.78% of corn flour, and 2.13% of salt. The Brix value was 30<sup>0</sup>. This formulated pumpkin jam contains 77.29% Carbohydrate (calculated value), 0.61% of crude protein, 0.63% of total fat, 0.20% of ash, 1.07% of fiber and 20.2% of moisture. The free fat content of pumpkin jam was 0.0159%. The temperature was 103<sup>0</sup>C -105<sup>0</sup>C. The pH of the final product was 3.2 and the Brix value was 69<sup>0</sup>. These values were in the range which requires to get the gel structure of jam. The calorific value was 397.56 kCal/100g. The reducing sugar content was 11.4% and the total sugar content was 19.2%. The percentage of reducing sugar from total sugar was 59.47%. The pumpkin spread contains 22.25% Carbohydrate (calculated value), 3.3% of crude protein, 1.43% of total fat, 2.24% of ash, 2.42% of fiber and 68.36% of moisture on wet basis. The Brix value of the formulated spread was 30. And the calorific value was 363.64 kCal/100g. Since pumpkin is a low cost vegetable, there is not much cost for processing of both pumpkin jam and spread. The cost for 100g of pumpkin jam was Rs. 21.02 and the cost for 100g pumpkin spread was Rs. 23.86.

According to the results obtained, it can be noted that the formulated pumpkin jam has a shelf life of minimum three months. For formulated pumpkin spread the shelf life can be minimum of one month under the refrigerated conditions (5<sup>0</sup>C). Studies can be recommended to investigate on the shelf life of both these products further.