

# Technological, chemical and microbiological studies on some diabetic food

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This study was carried out mainly to formulate some diabetic diets such as dried apricot sheets "Quamar Eldin" and "halwa tahinia", to follow the changes in their quality and composition during processing and storage. Dietetic foods suitable for diabetics may have the same "calorie -value" but are used as a sugar substitute, which is intended to replace sucrose or glucose. Fructose and non-nutritive sweeteners are often allowed for diabetics, since their metabolism does not require insulin. This investigation was carried out to determine whether non-nutritive sweeteners (aspartame, acesulfame-K, and stevioside or mixtures of them) and for fructose could be used to replace sweetness of sucrose in "Quamar Eldin" sheets and "halwa tahinia" diet.

**A- "Quamar Eldin" sheets :-**

- a- "Quamar Eldin" sheets of different treatments were prepared by sundrying and the chemical analysis of different treatments of "Quamar Eldin" sheets after processing and during storage for nine months at 5°C were carried out :a- The percentage of total sugars varied widely in different treatments and decreased during storage. This may be due to the reaction between amino acids and sugars.
- b-The percentage of reducing sugars for the sample sweetened with fructose was higher than other treatments and increased during storage .
- c-The total acidity for all "Quamar Eldin" treatments were nearly similar and decreased during storage.
- d-The carotenoids responsible for the orange color decreased markedly during processing and storage. The brown color developed due to the non-enzymatic browning reaction. The formation of the brown color was accompanied by a decrease in ascorbic acid, amino acids and sugars.
- e-The color was darker in "Quamar Eldin" sheets sweetened with sucrose than the other treatments, whereas sample sweetened with fructose was bright.
- f-The (CFU/g) for mold and yeast was less than 10 for all "Quamar Eldin" treatments during storage, whereas the (CFU/g) for total bacteria count less than 30 for all treatments after storage period.

**B- "Halwa Tahinia"**

- \* Two types of "halwa tahinia" were prepared. Whole sesame tahina was used in the first type and partially defatted sesame tahina was used in the second type.
- a-The chemical analysis and energy of both sesame tahina and tahina partially defatted were determined.
- b-The moisture content of halwa tahinia made from partially defatted tahina was higher than that from whole sesame tahina.
- c- Fat content in "halwa tahinia" made from whole tahina ranged from 26.0 to 26.5% and from tahina partially defatted ranged from 19.1 to 19.7%.
- d-The total sugars of partially defatted tahina were slightly higher than those of whole tahina.
- e-The total calories per 100 g. of halwa tahinia were different according to the sweetener type.
- f-value m.eq./Kg oil) in "halwa tahinia" made from whole Peroxide (sesame tahina was higher than those of partially defatted tahina.
- g- Oil se from whole sesame halwa treatments after two months of storage, meanwhile the oil separation appeared in halwa partially defatted after three months of storage.

High performance liquid chromatography was used to determine the APM and ACK in both "Quamar Eldin" sheets and "halwa tahinia" treatments. Organoleptic evaluation was used to test consumer preference in respect to the effect of different processing techniques and storage period on quality attributes of all "Quamar Eldin" treatments and "halwa tahinia" diets.