



INTRODUCTION

## 1. INTRODUCTION

At the present time, attention has been based on the utilization of wastes and by-products of food processing to increase the available food resources and to supplement several products which used as human foods. Furthermore, it can contribute to solve problem of waste disposal and thus minimize the environment pollution.

Due to the shortage of edible oil and protein over the world particularly in developing countries (**Nout *et al.*, 1995**). It has become necessary to not only develop new cultivars high in both components but also search for new discarded yearly at processing plants.

Some of these seeds such as apricot, tomato, citrus, mango ...etc are rich in oil, protein, carbohydrates and fibers (**Kamel and Kakuda, 1992**)

Processing of many fruit and vegetable products produce a large amounts of wastes which could be contribute to environmental pollution. Apricot and mango are the most important fruits grown and processed in Egypt.

**1-Apricot (*Prunus armeniaca*)**, is the most delicious stone fruit consumed during the summer season in Egypt. It is used fresh or processed as apricot juice, nectar, jam and sheets (**Kamrudin**). The amount of apricot pits remaining after processing is quite large. it has been utilized in Germany and the United States of America to produce fixed oil and bitter almond oil (**Cruess, 1958**). Apricot kernel cake contains 41.5% total protein and

could be used as a good source of protein except for the presence of a toxic substance, amygdaline, which is known to be lethal to humans if the consumed does reaches 1.71g (**Jamieson, 1943**).the toxic amygdaline content of cultivated Egyptian apricot kernels is 5.7% according to the report of **Khairy et al. (1975)**.apricot varieties were planted in Egyptian 7982 feddans producing 44833 tons **Sheashea et al. (2002)**. One of the major problems in utilizing apricot kernel as a feed or food is the presence of poisonous cyanogenic glycoside compound, amygdaline, which, after hydrolysis, gives hydrocyanic acid (**Mcmahon et al 1995**)

2- **Mango (*Mangifera indica*)** is an important fruit crop and it is popular world –wide **Arogba et al (1998)**. In Egypt about 358000 tons of mango fruit were produced in (2005). The kernel inside seed represents 24.1 to 50.0% (with an average 45.38%) of the seed and 12.5% of whole fruit (**Hemavathy et al., 1987 and Arogba, 1997**). However, about 50715 tons of mango seed kernels are considered as waste disposal problem every year. One of the major problems in utilization of mango kernel as feed and food is presence of some antinutritional factors tannins, phytic acid and HCN. **Arogba, (1997)** reported that, the mouth feel of fresh mango seed kernel leaves residual bitterness. Therefore, he attributed this bitterness to tannin that it could be the bitter principle. Obviously, tannins have the property of complexing with minerals and protein and consequently impede in-vivo digestibility of protein – rich foods significantly (**Narasinga Rao and Prabhvathi 1982; Adewusi and Osuntogun 1991**).

The main goal of this study is the evaluation of apricot and mango kernels which were cultivated in Egypt, therefore the following points were studied.

- Chemical composition of kernel seed.
- Physical and chemical properties of kernel oils
- Amino acids composition of kernel meal.
- Effect of different treatments on the removal of antinutritional factors from kernel meal.
- Quality attributes of biscuit made from wheat flour substituted by different levels of apricot seeds and mango seeds kernel meals.