# Introducción

# INTRODUCTION

Soybean is one of the most important legumes used for their oil and protein contents . It contains a bout 38-44% protein which is higher than the protein content of other legumes (20-30%) and cereals ( 8-15%). Such high quantity of protein in soybean along with its excellent quality enhance its value as a foodstuff or food for human and animals.

Moreover, Soybean oil is the dominant oil seed in both U.S. and world market. Its oil has been successively used as a food grade product because of its stable high quality triglyceride in gradient used widely in commercial processed foods . It is without other lipid contaminants and available at a reasonable cost. The increase in popularity of soybeans protein and oil as edible food for human and animal consumption since the 1940 until now was part due to desirable agronomic soybean characteristics, the high quality of soybean protein meal, and high soybean yields at competitive prices. Furthermore, during the past several apart from its nutritional perspectiv, soybeans and their different types of foods have been recommended in preventing and treating chronic diseases.

Sorghum is grown in all areas where the average of summer temperature exceeds 20°C and the frost free season is 125 days or more. Sorghum grains rank fifth in average of the crops of the world being exceeded by wheat , rice , maize and barley. Sorghum has been classified as high and low tannin types. Brown or high tannin sorghum was characterized by less nutritional value and are grown because of their

agronomic advantages including bird resistance and decreased weathering, mold infestation and grain sprouting. The other type of sorghum which contains no tannin have a nutritional value similar to that of maize.

This study will focus on the above mentioned crops, namely, soybean seeds and sorghum grains of low and high tanin content. Specific parameters must be measured to evaluate the quality of soybean seeds and sorghum grains in the market. These include mycotoxins level, the presence of aflatoxin in soybean seeds and sorghum grains was a main concern in this study. This concern stems from the fact that the main mold, *Aspergillus flavus*, which produces carcinogenic aflatoxins on peanuts, corn and a few other foods when they are not stored properly.

This study is also concerned with investigating the possibility that certain toxigenic mold strains originally inhabited soybean seeds and sorghum grains during the developmental growth of the plants or after harvest. This was based on the warning concern during the past several decades for the existence of aflatoxin - producing molds in several plant products among which the two crops under this study.

It is also clear that the, molds *Aspergillus flavus* and *Penicillium corylophilum* or soybeans and sorghum cultured with any of these molds, produce or contain a sufficient amount of these aflatoxins to constitute a hazard to humans or animals who consume the seeds or grains whether as raw material or in a processed form. Therefore, from food science and nutrition points of view this concern is another motivation for this study The purpose is aimed to select the most suitable gaseous conditions to be

to give quantitative assessment of the toxic hazard. Therefore HPLC analysis is crucial to arrive at proper conclusion regarding the level of toxicity and hence the safety of soybean and sorghum as food grade products.