Chapter-I

INTRODUCTION

Legumes are a type of plant species in which the seeds grow to develop into pods. They can be edible, like beans, soybeans, alfalfa, lentils, peanuts and peas, or not, like clover. Legumes are a good source of starch, dietary fiber, protein, minerals. Legumes are a valuable part of a healthy diet. As a group, nutrient composition of legumes makes them ideal foods to meet dietary recommendations. Legumes have been recognized as functional foods that promote good health and have therapeutic properties (Geil and Anderson, 1994).

* Cassia tora * L. syn. * Cassia obtusifolia * belongs to the Leguminosae family. It is an annual herb, 30–90 cm high which occurs as wasteland rainy season wild plant in India. * Cassia tora * is a wild crop that grows in most parts of India as a weed. The most popular English names of * Cassia tora * are Foetid Cassia, The Sickle Senna and Wild Senna. Common Hindi names are * Puwad, Charota, Chakvad, Chakavat. * The main useful parts of * Cassia tora * are leaves, roots and seeds.

Guar gum, also called guaran, is a gelling agent. Guar gum is extracted from a legume, the guar bean. Guar gum is widely used in food industry- in baked goods to increase dough yield and improve texture and shelf life, in dairy industry as a stabilizer, in meats as a lubricant, in desserts, frozen food items etc. Guar gum has also been considered of interest with regards to both weight loss and diabetic diets. (Brown and Livesey, 1994).
Cassia tora seeds also contain a gum of commercial interest in addition to protein (Victor and Abbott, 2005). Nowadays a natural gelling agent like guar gum, having industrial and food applications is also being made from the Cassia tora seeds. Seed gum can be used in food, feed, paper, textile, petroleum recovery, and pharmaceutical industries. Cassia tora grows in hot, wet, tropical climates both wild and commercially.

The roasted Cassia tora seeds have a special flavor and color, and most of Cassia tora was conventionally consumed as a healthy tea beverage in China. It is known as Juemingzi in China. Methanol extract from Juemingzi has demonstrated inhibitory effect on lipid peroxidation (Zhenbao et al., 2006).

Fermented leaves of Cassia obtusifolia are used as an appetizing agent by people of eastern of Chad and south of Sudan. The leaves contain the major elements needed by human body. Their nutritional value is enhanced when eaten with cereals (Mbaigunam et al., 2005). The leaves of Cassia tora are used as vegetables and medicines for skin diseases and leprosy in India (Jalil and Dixit, 1995).

Cassia tora is a commonly used Chinese herb. The herb was traditionally used to clear liver, heart, improve visual acuity and to dispel wind and clear heat. The seeds are believed to decrease serum total cholesterol and triglyceride levels, delay and partly reverse the formation of atherosclerosis spots and markedly reduce incidence and death rates of cardiovascular disease. Cassia seeds have been found to promote hepatic enzyme oxidation, and decrease the level of blood pressure and blood glucose (Chu-Hua et al., 2008).
Roasted seeds of *Cassia tora* are substituted for coffee. Studies are being conducted for its use in some food products. *Cassia tora* powder is used in the pet-food industry and is becoming more and more popular. In organic farms of India, *Cassia tora* is used as a natural pesticide.

*Cassia tora* has been reported to contain many active substances, including chrysophenol, emodin, rhein, etc. *Cassia tora* has been reported to exhibit significant antimitogenic activity (Yen *et al.*, 1998 and Choi *et al.*, 1997).

*Cassia tora* constitutes an Ayurvedic preparation “Dadhughnavati” which is one of the successful antifungal formulations (Patil *et al.*, 2004). According to Ayurveda the leaves and seeds are acrid, laxative, antiperiodic, antihelminthic, ophthalmic, liver tonic, cardiotonic and expectorant. The leaves and seeds are useful in ringworm, flatulence, colic, dyspepsia, constipation, cough, bronchitis, cardiac disorders. In tropical Africa *Cassia tora* seeds are used in traditional medicine for the treatment of roundworm infection, constipation, fever and oedema (Warda *et al.*, 2006).

*Cassia tora* seeds contain antinutritional factors such as total free phenolics tannins and trypsin inhibitors. However, these antinutritional factors probably have little nutritional significance if the seeds are properly processed (Vadivel and Janardhanan, 2005).

*Cassia tora* is rich in proteins and minerals however, it also contains some antinutritional factors. So, the present study was carried out with following objectives:

1) To analyze physico-chemical composition of the *Cassia tora* seeds.

2) To formulate and standardize some of the traditional preparations with different levels of supplementation of the seeds.

3) Biological evaluation of *Cassia tora* seeds will be done.