International Journal of Food Science and Nutrition
www.foodsciencejournal.com
ISSN: 2455-4898
Received: 28-12-2022, Accepted: 14-01-2023, Published: 30-01-2023
Volume 8, Issue 1, 2023, Page No. 38-39

Garden cress seed *(Lepidium Sativum)* and its health benifits- A revive

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Abstract
Garden cress has been considered as an important nutritional and medicinal plant in India since the Vedic era (between 500-1700 B.C.). In Ayurveda, the indigenous medicinal system, it is described as hot, bitter, galactogogue and claimed to destroy vata (air) and kapha (phlegm). Seeds are also rich source of omega 3-fatty acids which helps to lower cholesterol in hyper cholesterolemic patients. It is very famous in folk medicine. The present study was reviewed that the Garden cress (Lepidium sativum) seeds are well known traditionally for their medicinal and health beneficial properties such as hypoglycemic, hepatoprotective, nephroprotective and anticarcinogenic etc. Diabetes mellitus, a metabolic disorder, is increasing in prevalence drastically worldwide. Dietary supplements from natural sources are a well-accepted phenomenon for prevention or management of diabetes mellitus. Hence, inhibition of carbohydrate hydrolyzing enzymes such as α-amylase and α-glucosidase by plant phenolics is an effective technique to lower postprandial glucose level.

Keywords: garden, *Lepidium Sativum*, health benifits

Introduction

Garden cress *(Lepidium sativum)* famous as belongs to the family Bassicaceae (cruciferae). Garden cress is a fairly known plant used in traditional medicine. The seeds are known by various names, commonly as *Chandrashoor* or *Halim* in Hindi, *Aliv* in Marathi and *Asali* in Malayalam (Singh, *et al.,* 2017) [12]. Garden cress seed has been considered as an important nutritional and medicinal plant in India since the Vedic era (between 500-1700 B.C). (Patil, *et al.,* 2015) [10]. Garden cress main character is that it can grow in any type of climate and soil condition and its ability to tolerate slight acidity; it can be grown like white mustard. It's an annual plant of a height of 50 cm that can grow easily using less irrigation, equipment's facilities, and in comparatively weak soil without having special technical knowledge. It's easy cultivation and it's tolerance to different environmental conditions gave it the ability to spread all around the world. Garden cress leaves are consumed raw in salads, also cooked with vegetable curries and used as garnish. Cautions should be taken with storing raw collected cress, with any sign of slime, witting or discoloration it should be avoided. Until they're needed for use, the leaves should be left on stem (Falana, *et al.,* 2014). In India, the southern area is especially involved in the commercial production of Garden cress. The main character of Garden cress is that it can grow in any type of climate and soil condition. The scientific investigations show that, Ethiopia is the origin of Garden cress and it is distributed in various areas from Ethiopia. About 150 species are found in the temperate and sub temperate areas. Garden cress is an annual plant whose height is 50 cm. It belongs to the family of mustard (Wadhwa, *et al.,* 2012) [13]. Garden cress seed have also been used as a popular medicinal herb in Arabian countries (Gaafar *et al,* 2013) [5]. Garden cress seeds are used in the form of vegetable in Europe and America, the seeds are harvested for food purpose in several parts of India (Gokavi, *et. al*., 2004) [6].

The seed coat of germinating seeds contains much mucilage, which has an allelopathic substance, lepidimoide. The effects of the germinating seeds were studied to determine the potential for slowing down the hydrolysis of starch to glucose in diabetic persons. The seeds significantly lowered the glycaemic response to a test meal (Kasabe, *et al.,* 2012) [8].

Garden cress seeds are used in South Asia as traditional medicine to treat bronchitis, asthma and cough. It is considered diuretic, expectorant, aphrodisiac, antibacterial, gastrointestinal stimulant, gastro protective, laxative and stomadic (Doke, *et al.,* 2014) [3].

Physicochemical Properties of Garden Cress Seed

The edible whole seed is known to have health promoting properties as it contains 25-39 per cent of protein. 33% percent carbohydrate, 2.4per cent crude fat, 7.6% crude fiber and 6.4% minerals, iron (100%). The major fatty acid present in garden cress seeds are alpha-linolenic acid (34.0%) and also contains monounsaturated fatty acids (37.6%), polyunsaturated fatty acids (46.8%) and antioxidants such as tocopherols and carotenoids (Kaur, et al., 2015).

Garden Cress Seeds (*Lepidium Sativum*) are very high in iron and folic acid content. These seeds are used as herbal medicine to treat iron deficiency anaemia because 100 g of Garden Cress Seed provide 100 mg of iron (Sheeba, *et al.,* 2016) [11].

Garden cress oil has Linoleic acid: Linolenic acid (LA: ALA) ratio in the range of 1:4–2:3, which could give it nutritional advantages over the currently available ALA-rich plant oils in altering the n- 6/n-3 ratio *in vivo* (Yenge, *et al.,* 2017) [14]. Despite its medicinal value and one of the best

sources of ALA, garden cress seed oil (GCO) has not received much attention (Diwakar, *et al.*, 2007).

Karazhiyan *et al.,* (2009) [7] reported that the rheological properties of garden cress extract the majority of the extract was carbohydrates with a sugar content of nearly 77%. In addition, it content any small amount of protein and fat 2.45 and 1.85%. The metal ion content Ca was the major ion present in the extract about in trace amounts that is K, Na and mg.

Health Benefits of Garden Cress Seed

Datta *et al.,* (2011) [1] analyzed the garden cress (*Lepidium sativum* L.) leaves and seeds are used in India as food supplement and also in traditional medicine. The garden cress seed is an ancient herb that has been widely consumed and also used in traditionally used in medicinal. The acute toxicity study, 0.5 –5.0 g/kg body weight of the GC seed powder was administered through diet to rats and obvious symptoms of toxicity and mortality were monitored for 72 h. Acute doses of GC seed powder did not induce any symptoms of toxicity or mortality of rats. In subchronic toxicity study, 1.0 – 10.0% of the GC powder was administered to rats through diet for 14 weeks. Dietary feeding of GC seed powder did not produce any mortality, no significant changes in food intake, gain in body weight, relative weight of organs, hematological parameters, macroscopic and microscopic changes in vital organs, were observed between experimental and control groups. Gaafar, *et al.,* (2013) [5] reported that garden cress or "*hab arachad*" seeds are one of the popular medicinal herbs used in Arabian countries. Garden cress meal derived from defatted garden cress seed flour contains 34.15% protein, 1.86% crude oil, 9.85% crude fiber, 5.89% ash and 48.25% nitrogen free extract (NFE), on a dry weight basis. The results of the biological experiment indicated that the isolate had a relatively high protein efficiency ratio (PER) value. The authors suggested that garden cress seeds could be exploited as a functional food ingredient as well as a source of dietary fiber.

Falana *et al.,* (2014) reported that the plant seeds contain mainly Alkaloids. For example: glucotropeaolin, N, N dibenzylthiourea, lepidine, N,N-dibenzzyl urea, sinapic acid and its choline ester (sinapin); also contain calcium iron, carotene, riboflavin, uric acid, cellulose, phosphorus, thiamine and niacin. Seed oil found to contain stearic, palmitic, linoleic behenic, oleic, arachidic, lignoceric acids, benzyl isothiocyanate, benzyl cyanide, sterol and sitosterol, which mainly can be used in treating dysentery and diarrhea.

Conclusion

The present study was concluded that the potential benifts as well as medicinal benefits of garden cress seed, beneficial properties such as hypoglycemic, hepatoprotective, nephroprotective and anticarcinogenic etc. Diabetes mellitus, a metabolic disorder, is increasing in prevalence drastically worldwide. Dietary supplements from natural sources are a well-accepted phenomenon for prevention or management of diabetes mellitus. It is very famous in folk medicine

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