Innovative Farming
-An International Journal of Agriculture

ONION: THE BOON FOR HEALTH

Popular Article

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KEY WORDS
Onion, Medicinal, health, Nutritional, benefit

ARTICLE INFO
Received on:
01.12.2016
Revised on:
25.12.2016
Accepted on:
26.12.2016

ABSTRACT

Onion is an important and indispensable item and can be found in almost every kitchen around the world. It is an important condiment and vegetable for Indians. The green leaves and bulbs are eaten either raw or used in the preparation of several recipes. It holds a great position in the Indian food market on account of its special characteristics of pungency and indispensability. This article focuses on the nutritional benefits of this important condiment. Numerous health benefits have been attributed to the vegetable, including prevention of cancer and cardiovascular disorders. Onions contain chemical compounds such as phenolics and flavonoids that basic research shows to have potential anti-inflammatory, anti-cholesterol, anticancer and antioxidant properties. These include quercetin and its glycosides quercetin 3, 4'-diglucoside and quercetin-4'-glucoside.

Introduction

Onion *(Allium cepa)* is one of the most economically important vegetable crops consumed for their ability to enhance the added flavor and typical taste in other foods. The small bulbs and shallots are pickled in vinegar or brine. Onions, and other *Allium* species (over 900 types of onion), are highly valued herbs possessing a lot of culinary and medicinal values. Some of their beneficial properties can be seen after long-term usage. As a vegetable, it is a low in fat and calories, although, it primarily consumed for their ability to enhance the flavor of the other foods. It also contributes significantly to the human diet and has a therapeutic property. It is a good source of vitamins, minerals, polyphenols and a number of phytonutrients. These phytonutrients such as phenolics and flavanoids present in onion have been found to act as antioxidants to lower blood pressure and prevent some kinds of cancer (Yang *et al.*, 2004). Onions are a source of ascorbic acid and dietary fiber too. It also possesses a high content of flavonoid (mainly quercetin and its conjugates) and sulpher compounds (i.e. thiosulphinates), both of which have a high level of antioxidant activity. History of onion: The onion (*Allium cepa* L., from Latin *cepa* "onion"), also known as the bulb onion or common onion, is a vegetable and is the most widely cultivated species of the genus *Allium.*

This genus also contains several other species variously referred to as onions and cultivated for food, such as the Japanese bunching onion (*Allium fistulosum*), the tree onion (*A.* ×*proliferum*), and the Canada onion (*Allium canadense*). The name "wild onion" is applied to a number of *Allium* species, but *A. cepa* is exclusively known from cultivation. Its ancestral wild original form is not known, although escapes from cultivation have become established in some regions. The onion is most frequently a biennial or a perennial plant, but is usually treated as an annual and harvested in its first growing season.

The onion plant has a fan of hollow, bluish-green leaves and its bulb at the base of the plant begins to swell when a certain day-length is reached. In the autumn (or in spring, in the case of overwintering onions), the foliage dies down and the outer layers of the bulb become dry and brittle. The crop is harvested and dried and the onions are ready for use or storage. The crop is prone to attack by a number of pests and diseases, particularly the onion fly, the onion eelworm, and various fungi cause rotting. Some varieties of *A.*

cepa, such as shallots and potato onions, produce multiple bulbs.

In onion, sulphur is a constituent of secondary compounds, that is, allin, cycloallin and thiopropanol. These secondary compounds not only govern the taste, pungency and medicinal properties of onion but are also important for resistance against pests and diseases. Onion are rich source of querctin: It is the richest dietary source of quercitin, a potent antioxidant flavonoid (also found in shallots, yellow and red onions), which is found on and near the skin and is particularly linked to the health benefits of onions. Quercetin plays a role in regulating the immune system's response to outside stressors through cell signaling pathways called kinases and phosphatases, two types of enzyme and membrane proteins needed for proper cellular function.

Nutritive value of vegetables

Nutrients	Quantity/100g
Energy (Kcals)	41
Moisture (g)	88
Protein (g)	1
Fat (g)	0
Mineral (g)	1
Carbohydrates (g)	9
Fibre (g)	2
Calcium (mg)	50
Phosphorus (mg)	50
Iron (mg)	7

Health benefits of onion

- Prevents Diabetes: A single serving of onions contains 27% of your biotin DRI. Biotin has many positive impacts on your health, one of which is combating symptoms associated with type 2 diabetes. A combination of biotin and chromium might help regulate blood sugar and even decrease insulin resistance.
- Healthy Skin: Biotin is also important in maintaining healthy skin. It is used to treat brittle nails, prevent hair loss (although research is still ongoing as to its effectiveness in this regard) and maintain skin health.
- Prevents Cancer: Quercetin is more than just a funny looking word. It's also a plant flavonoid (another funny word that means plant pigment) that possesses potent antioxidants, which fight against cancercausing free radicals. Free radicals are chemical compounds that damage cell membranes and cause cell death. Onions are rich in quercetin and thus are a powerful weapon in the war against cancer.
- Lowers Blood Pressure: The sulphur in onions acts as a natural blood thinner and it prevents blood platelets from collecting. This is good for lowering blood pressure and preventing risk of heart attack or stroke, because you are more susceptible if blood platelets clog up. It also helps prevent plaque buildup in arteries which is also good for preventing heart attack and stroke.
- Relieves Stress: Quercetin doesn't stop there. It also helps protect your body against stress. When you are stressed out your body produces cortisol. While cortisol is totally normal, too much of it can damage muscle tissue and cause protein breakdown in the body. That's where quercetinrich onions come in. During times of prolonged stress, quercetin suppresses enzyme required for cortisol release.
- Lowers Cholesterol: Raw onion also promotes production of HDL which is the good cholesterol that we need to stay healthy.
- Anti-Inflammatory: Onions have anti-inflammatory properties help those who suffer from joint pain and arthritis. But the benefits of betalain is not limited to those with swollen joints; all disease is rooted in chronic inflammation, and, therefore, everyone should seek out foods with anti-inflammatory properties.
- Detoxification: Onions also contain vitamin C, which is excellent at detoxifying the body and is effective in removing lead, arsenic and cadmium. So increasing consumption of onions can help our body to get rid of these harmful metals.
- Antibacterial/Antifungal properties: Onion oil has been shown to be highly effective against gram positive bacteria, dermatophytic fungi, and growth and aflatoxin production of *Aspergillus* fungi .Welsh onion extracts have been proven to be more inhibitory toward aflatoxin production than the preservatives sorbate and propionate. Thiosulfinates formed from onion tissue degradation (i.e. chopping) have been credited in inhibition of arachidonic acid

metabolic pathways and subsequent anti-inflammatory and antiasthmatic effects.

Conclusion

In summary, the health benefits of dietary consumption of onions have been reviewed. Organosulfur compounds such as diallyl sulfide and thiosulfinates, as well as flavonoids such as quercetin, have been the focus of much research pertaining to antioxidant activity, cancer prevention, coronary heart disease, and many other factors relating to human disease. Researchers using epidemiological data have shown a relationship between increased onion consumption and lower risk of certain cancers, especially in areas of the body involved in the digestive system. Many promising aspects concerning high daily intake of onions have been elucidated. However, it is apparent that more research is still needed in order to clearly identify in vivo health benefits from increased onion consumption in the human diet.

How to cite this article?

Vivek Kumar Kurrey and Omesh Thakur. 2016. Onion: The boon for health. *Innovative Farming*, 1(4): 220-222.