

Anticancer Properties of Some Edible Medicinal Plants

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Abstract

American Cancer Society says half of all men and one third of all women, in the US, will grow up cancer during their lifetime. Cancer is the general name for a group of several diseases in which cells in some part of a body begin to grow out of control. It has been found that chemo preventive properties of plant based food are related to their ability to block the progression of latent micro tumors. These properties rise from the high content of phytochemicals. Plants are reservoir of bioactive compounds; therefore if we tend to edible plants in our daily diet, we can significantly reduce the risk of cancer.

Keywords: American Cancer Society; Edible Medicinal Plants; Phytochemicals

Introduction

Plants are considered as old source of new drugs as 63% modern drugs are prepared from natural products acquire from medicinal plants [1]. Plants are rich in polyphenolic compounds, flavonoids, anthocyanins, which inhibit growth of tumor.

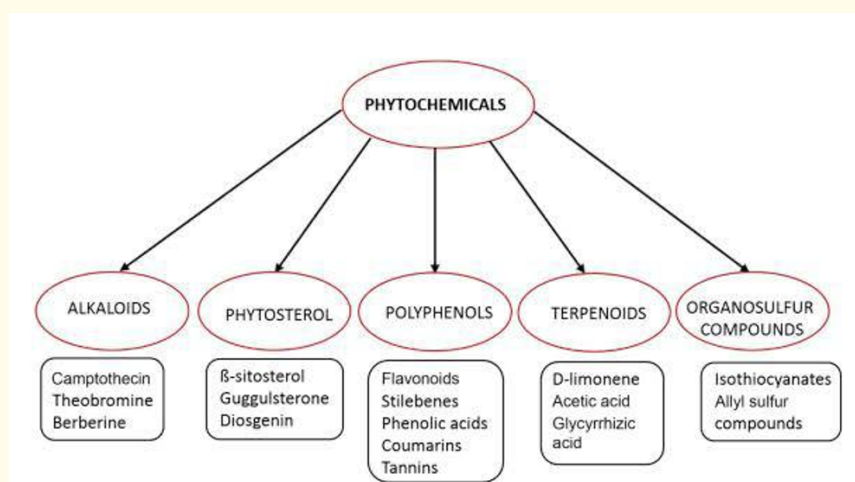


Figure 1: Various phytochemicals found in plants.

Some notable examples of such bioactive compounds found in plants such as phenyl isothiocyanate found in mustard, curcumin found in turmeric, resveratrol found in grapes and epigallocatechin-3 gallate (EGCG) found in green tea. So, for a healthy life, three must to remember “*Harmony with Herbs. Friendship with fruits. Team up with trees*”.

Harmony with herbs

Basil (*Ocimum basilicum*)

Basil is considered as a very holy and auspicious plant in India. It is a resource of vitamin K, vitamin C, vitamin A, dietary fibers and minerals such as manganese, magnesium, potassium and iron.

Anticancer benefits

‘Orientin’ and ‘Viceninare’ are two water soluble flavonoids shows present in basil. In this report organized on human white blood cells, these compounds of basil protect cell structure as well as chromosomes from radiations and other injury. Basil has been shown to supply protection against undesired bacterial growth. These antibacterial properties of basil are related with its volatile oil. Basil may help lower the cholesterol, fight cancer and increase the immune system. According to Ayurveda, Basil is helpful in significance cancer. It claims that by simply consuming 20 basil leaves by water every day, many cancers can be prevented and cured. Cervical cancer can be cured by a chemical constituent of basil known as ‘Caffeic acid’. Laboratory reports in India found that the antioxidant activity in basil has the potential to block or defeat liver, stomach and lung cancer [2].



Figure 2

Black pepper (*Piper nigrum*)

Black pepper is called the king of spices, as it is powerhouse of antioxidants. It has many minerals like potassium, calcium, zinc, manganese, iron and magnesium. It is also an abundance of vitamins such as B-complex and antioxidants vitamins like vitamin C and vitamin A. The most important health nutrient piperine is also found in black pepper.

Anticancer benefits

Antioxidants present in black pepper help our body for the removal of harmful free radicals and thus protect us from cancer and other diseases.

Curcumin is an active anticancer compound found in turmeric. The absorption of curcumin has increased, when consumed with piperine.

Black pepper has been found to suppress the growth of colon and lung cancer. An experimental studies conducted in Michigan university indicate that if turmeric is utilize with black pepper, the growth of breast cancer tumor is stopped within few months [3].



Figure 3

Friendship with fruits

Amla (*Emblica officinalis*)

Amla is a wonderful fruit, considered as nature’s precious gift to mankind. It is a rich source of vitamin C. It contain carbohydrate, proteins, fibers and minerals. It has indicated bioactive compounds like quercetin, gallic acid, ellagic acid and chebolic acid. It is the main ingredient of popular ayurvedic rasayan “chyavanprash”.

Anticancer benefits

Japanese scientists from Nagasaki University discovered that amla fruit extracts prevent the growth of cancerous cells in stomach, skin and womb cancer. Amla has been found to have potential activity against pancreatic cancer.

Amla helps to reduce adverse effects of chemotherapy in the treatment process.

Amla along with other medicinal plants has been shown to protect heart from the drug doxorubicin used in the treatment of cancer [4].



Figure 4

Grapes (*Vitis vinifera*)

Grapes include resveratrol, a well-known anticancer compound. Grapes are good source of antioxidants and phytonutrients. Grapes have anticancer and antiaging compounds. Grape seeds are best source of essential fatty acids and vitamin E, which protect skin, blood vessels and nervous system from free radical's attack.

Anticancer benefits

Grape juice in the form of wine is the best source of resveratrol. This compound is highly effective in the treatment of skin and gastrointestinal cancers. The grapes indicates antioxidant and anti-inflammatory properties, it make a natural protection against cancer.

Grape juice has been found to cover up breast cancer cell growth by reducing the synthesis of female hormone estrogen, which plays a major role in the growth of breast cancer.

Resveratrol (stilbene) have been found to prevent cell growth in prostate cancer [5].



Figure 5

Team up with trees

Sahjan (*Moringa oleifera*)

It is called miracle tree as it contains antioxidants, dietary fibres and minerals. It lowers blood sugar levels. Take 3g of *Moringa* leaves powder twice daily for three weeks lowers the severity of asthma symptoms. Regular consumption of sahjan fali (fruit) reduces inflammation and also lowers the cholesterol.

Anticancer benefits

Moringa leaf extract is a potential anticancer agent against lung, liver and skin cancer. *Moringa* leaves and even seed extracts have been found effective against breast cancer [6].



Figure 6

Conclusion

Cancer occurs by the uncontrolled growth of the cells in any part of the body. The only real defense mechanism against cancer is to build immune system strong. If we want to improve immunity we have to eat colorful fruits and vegetables, full of anti-oxidants and other phytonutrients.

Daily intake of food rich in anticancer compounds, which are preventive, nontoxic and harmless to the physiology of normal cells, in addition such class of compounds stop the growth of micro tumors.

On the basis of these facts we can claim that all patients especially those who have family history of cancer should be strongly considered to change their dietary habits. They should contain 5 to 10 servings of plant based food, especially food a rich source of anticancer phytochemicals.

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