

Nutrients and Cucurbita Eaten from The Seed

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Abstract: The importance of nutritional support is increasing in determining the effectiveness of some nutrients used in nutrition or herbal products that are considered medically important in the prevention and treatment of diseases, providing consumer awareness and protecting our health. In this review, firstly information is given about pumpkin species and seeds eaten; the amount of these products in terms of nutritional support and living organisms. Pumpkin, seed, oil, seeds and wastes were evaluated with a different perspective.

Keywords: Cucurbita, Nutrition and its Importance, Oil Seeds

INTRODUCTION

Thanks to technology developed today, the amount of energy that people spend during the day has decreased and sedentary life has increased. As a result of this decline, menu plans should be made based on the principles of balanced nutrition, taking into account daily diets. Carbohydrates, proteins and fats, which are important for Human Nutrition in our daily lives, are a balanced way for people's weight/height, age, gender etc. it must be calculated by taking into account its properties [1]. Fats that are of great importance in human nutrition are also included in this group. Fats are the main sources of energy for the body, but the type of fat consumed daily and the total amount of fat play an important role in maintaining health status. We take food with fats A, D, E, K vitamins (fat soluble vitamins) in the body facilitates the absorption. The use of these vitamins in terms of the body is extremely important [2]. Pumpkin species used in kernels of cucurbit family have an important role as lipid source. Pumpkin seeds fall into the quality fat groups that should be taken in the human diet. Pumpkin seeds contain proteins, minerals, calories and vitamins necessary for Human Nutrition as an economical source of fat. Although it differs according to pumpkin plant species, it contains 33.48% protein, 28.68% carbohydrates, 30.66% fat and 3.07% fiber [2-3].

TYPES AND CUCURBITA

In Turkey, plant-based products are usually grown for use in human and animal nutrition, with seeds to be used in the next period. The seeds of vegetables, fruits and some oilseeds are often used as seeds for the re-cultivation of these products ^[4]. Pumpkin is also one of the rare plants that is often used as a means of duplication of seeds, fruits and seeds that fall into the group of oilseeds. Pumpkin is divided into four groups as summer, winter, kernel and ornamental pumpkins ^[5-6]. Summer pumpkins; Gum, Crete, Water and Vine, winter pumpkins; It consists of honey, chestnuts and other large zucchini. Ornamental pumpkins are varieties such as Mis and Finger pumpkins brought from a foreign countries^[7].

Types Of Cucurbita

- Cucurbita pepo (Summer Pumpkins)
- Cucurbita moschata (Pumpkins)
- Cucurbita mixta (Winter Pumpkins)
- Cucurbita maxima (Chestnut Pumpkin)
- *Luffa cylindrica* (Fiber Pumpkins)
- Lagenaria sicareria (Water Pumpkins) [8].

Cucurbita pepo (Summer Pumpkins)

Cucurbita pepo has been grown with edible fruits for thousands of years and now has economic value. It is one of the oldest species of cultivated plants found in Mexican archaeological remains (7000 BC). C. pepo is the most cultivated species in the zucchini family; In our country, cookies are known as pumpkins. Immature fruits are consumed as vegetables and ripe fruits are sweet, so they are

consumed by making confectionery, in flour products and by adding them to beverages. The majorities of fruits are fiber, but also contain proteins and high quality minerals [9-10].

Cucurbita moschata (Pumpkins)

Cucurbita moschata plant is usually grown in hot and humid weather conditions. C. moschata, which has a high economic value in the world, is primarily grown for use in seed pumpkin cultivation ^[4]. It is also used in the making of fruit juice, jam and dessert. It is also known that the use of decorative purposes in foreign markets is also widespread ^[10]. Contains vitamin A, C and E, potassium, calcium and iron minerals ^[11].

Cucurbita mixta (Winter Pumpkins)

Cucurbita is a one-year vegetable in the mix. It is known that the seed oil of c. mixta has various medicinal uses. In addition, seed oil has been found to provide an important source of vitamin E (tocopherol) in diets. Essential amino acids, important antioxidants, carotenoids and minerals are known to contain [12].

Cucurbita maxima (Chestnut Pumpkin)

Different types of pumpkins of this species, 16.It is known that it was introduced to North America at the beginning of the century. In the United States, the large red-orange pumpkins used on Halloween are Cucurbita maxima. It contains vitamins A, B1, B2 and C and contains potassium, phosphorus and magnesium minerals [13].

Luffa cylindrica (Fiber Pumpkins)

The fruit of sponge pumpkins is widely used worldwide. The fruits of these species are grown and eaten as vegetables. In order for the fruit to be edible, it must be harvested before it is fully ripened. When the fruit is fully mature, it is very fibrous and is used for cleaning purposes in bathrooms and kitchens. *Luffa Cylindrica* is popular in India, China and Vietnam [14].

Lagenaria sicareria (Water Pumpkins)

The water pumpkin is a single-year plant in the zucchini family. It is also known as a vine pumpkin because it is a wrapper plant. There are various shapes and sizes. The plant is widely grown throughout India and is traditionally used as a medicine. It is used in kitchens around the world as vegetables in food and desserts. It also contains vitamin A, vitamin C, potassium, calcium and iron minerals in nutritional value [15]. In recent years, watermelon has been used for vaccination purposes in Turkey [16-17].

THE USE OF THE SEED EATEN FOODS

Due to the fact that the sunbathing time is high in our country due to the fact that summer fruits and vegetables are used in winter, the storage of drying, ice cream, vacuuming and canning methods has been going on for years. Dried fruits and vegetables include grapes, figs, apricots, peppers, eggplant, zucchini, tomatoes and beans [18]. Fruits and vegetables high in vitamin and mineral values when dried by the wrong methods have been found to lose many beneficial nutritional values [19]. In line with misuse, the kernel parts of fruits and vegetables are also not used and discarded.

Tomato

Tomatoes are one of the most widely produced and consumed agricultural products in the world. Contains vitamins K, A and C; potassium contains magnesium minerals. It is also rich in the care of antioxidants such as folic acid, lutein and lycopene [20].

Pepper

Pepper is widely used in different ways such as fresh, drying and canned peppers in our country. According to the pigments found in the core structures of pepper, yellow, red, green color grows. It is very rich in vitamins. Contains vitamins A, B1, B2 and C. In addition, the kernels have a 25% fat content [21].

Cucurbita

In our country, mostly produced in every region of pumpkin content A, B1, B2, B3 and C vitamin; phosphorus, calcium, iron, potassium minerals. It also contains a high percentage of fiber [22].

Eggplant

Eggplant grown as a plant of culture is consumed in fresh, food, jam, dessert, etc. Eggplant contains minerals such as vitamin A, phosphorus and potassium [23].

Green Beans

Green beans contain high levels of fiber, vitamins A, B12, C and K, potassium, calcium and phosphorus minerals. It also contains high levels of protein in its grains [24].

Cucumher

Cucumber contains potassium, sodium, calcium, magnesium minerals as well as vitamins B and C. It also contains 90% water. Its calories (15 Kcal) are quite low [25].

Watermelon

Watermelon, which is usually consumed all over the world as an age fruit, is also used in many different ways in the kitchen (juice, jam, sauce, etc.). It is important to meet the body's water needs. Contains 91% water. Watermelon is rich in vitamin A, C, Vitamin B6 and potassium, lycopene and fiber [6-26]

Melon

Depending on the seasonal properties, melon, which usually grows in summer, contains vitamins A, B12 and C as content. It also contains magnesium, potassium, iron and calcium minerals [27]. Although the core parts are often separated as seeds for later use, it is also common to dry and consume molasses and pulp as snacks [28].

Grape

Grape production in our country is grown in three different ways as tableware, wine and drying ^[29-30].Grapes contain b1, vitamin B2, iron, magnesium, potassium and phosphorus minerals ^[31]

Apricot

It is used as fresh fruit, food, dessert making, jam and dried as consumption. When apricots are examined in terms of minerals; contains iron, calcium, phosphorus, magnesium. It contains vitamins A, B, C and E as vitamins. In addition, apricots contain plenty of fiber [32].

Figs

Figs are mostly grown in the Aegean region in our country. Although the age state is often consumed as a fruit; it is also used in snacks, jams, desserts and dishes. Vitamins and minerals contained in A, B1, B2, B3; iron, calcium, phosphorus, magnesium and phosphorus. In addition, malik is rich in citric and acetic acid [33-19].

Pomegranate

Pomegranate sourcing in our country due to growing opportunities; it consists of cores, membranes, flowers, shells and water. Pomegranate contains vitamins B1, B2 and C, potassium. Although it is widely used fresh, it is also used as fruit juice, salad dressing (pomegranate sour) and wine sweetener. As a result of the output of these products, it has been stated that it is a source of healing for many diseases thanks to the antioxidants (anthocyanin and tannin) contained in the pomegranate seed remaining [34-35].

CUCURBITA SEED PROPERTIES

The production of kernel pumpkin (*C. pepo*) is particularly good in central Anatolia due to the favorable growing/growing conditions of Turkey's geographical features; Nevşehir, Konya, Kayseri, Kırşehir, Aksaray, Niğde, Karaman, Ankara (Polatlı), Balıkesir, Sakarya and Trakya (Edirne, Tekirdağ, Kırklareli) are carried out extensively in our department [36-37]. Pumpkin seeds (highly) are rich in carbohydrates, proteins, vitamins and minerals that are consumed raw or roasted [38]. In addition to its use as a pumpkin seed as a snack throughout the world and Turkey, it is an important industrial plant. it is used as raw material in human nutrition, food industry, cosmetic and pharmaceutical industries. In addition, after use, waste is evaluated and used as organic fertilizer [38]. *Cucurbita pepo (C. pepo)* produced as kernels, after the seed parts are taken, the fleshy (fiber) parts are used as feed in animal nutrition [39]. The production of kernel pumpkin cultivation in our country has been increasing steadily in recent years. The reason behind this is that pumpkin seed farming has a high economic income. Other advantages of core pumpkin cultivation are;

- Does not want much irrigation compared to other agricultural products,
- Long-term (1-2 years) storage of seeds obtained after harvest under suitable storage conditions,

- The use of agricultural technologies from seed planting to harvesting process,
- Cultivation even in inefficient soils,
- Lack of fallow (soil resting) process,
- That its exports have an important place outside of domestic markets [36].

Pumpkin seeds; It consists of 35% fat, 38% protein and 25% carbohydrates ^[38-5-6]. Cucurbita seeds grown in our country differ due to the seeds used. Usually as seeds; gum pumpkins (*C. pepo*) and pumpkin (*C. moschata*) seeds are used. Pumpkin seeds grown according to the seeds used are divided into three groups due to their structure. These include: the kernels are shelled, the kernels are shelless (membrane) and are divided into intermediate forms ^[7-36]. Apart from the seeds with shelled kernels, there is a thin membrane-shaped coating. When the kernels are used as snacks, this natural coating is separated from the core during roasting and becomes waste. Like other core wastes, they cannot be used in human or animal nutrition. According to recent studies, it has been found that these membrane-shaped structures have been powdered with a special application and can be used as natural additives in clothing and paper industry. Thus, the waste of pumpkin seeds is no longer a problem ^[40].

CUCURBITA SEED OIL

The seeds used for pumpkin seed oil are produced by cold tightening method without heat treatment. In this way, enzymes, minerals and vitamins in the seed structure do not deteriorate from heat. Although zucchini is generally used as fruits and vegetables, recently its seeds have been used by obtaining oil through snacks and cold presses. According to recent studies, it is observed that the use of pumpkin seed oil by the cosmetic and pharmaceutical industry has increased besides the food industry. Thanks to the vitamins and minerals contained in the field of cosmetics, it has been observed to reduce signs of aging in its use as a natural moisturizer. Despite the advancement of modern medicine, pumpkin seed oil has an important place in wound healing treatment. The memory-boosting effect is also quite high due to the zinc it contains [41].

If the cookie is cucurbita; Oil is obtained due to the presence of oilseeds and is also used significantly in the cosmetic and pharmaceutical industries [41-42]. Pumpkin seed oil, which has rich functional properties, is used as edible oil in many countries, in salads, bread and cake making by obtaining cold press method [41].

Cucurbita seed oil is rich in vitamins and minerals. Omega-3, omega-6, A (retinol) and E (tocopherol) vitamins, fiber, iron, zinc and selenium minerals ^[39]. Fats obtained from pumpkin seeds contain saturated and unsaturated fatty acids. According to previous studies, 80-85% unsaturated fatty acids and 16-17% saturated fatty acids were found ^[42-43].

THE IMPORTANCE OF FATTY SEEDS IN NUTRITION

The most widely consumed oilseeds in Turkey are moon seeds, peanuts, hazelnuts, pistachios, almonds and pumpkin seeds, respectively. Our kernel pumpkin species, which belong to the zucchini family, have been consumed as snacks in our country for many years. In addition, the seeds of watermelon and melon species are consumed as snacks in some of our regions [36].

Sunflower Seed

Sunflower (*Helianthus annuus L*.) is one of the most popular oilseed plants grown in the world. Sunflower, which ranks third in the world, is consumed by humans as the most important source of fat. The remaining waste (cossette) after the oil of the seeds is removed has an important place in animal nutrition. Sunflower seeds; It contains 40-50% fat and 23% protein. It also contains high protein, fat, E, B vitamins, zinc, copper, selenium, manganese and magnesium minerals [44-45].

Peanuts

Peanuts contain 45-60% fat, 20-30% protein, 18% carbohydrates. It is consumed as a snack and oil with its delicious and nutritious content worldwide. Peanuts are generally roasted when consumed as nuts. Thus, the taste increase is provided. Peanuts are recognized worldwide as a source of high quality oil. It is rich in peanuts, protein, folic acid, potassium, magnesium, phosphorus, iron, zinc and fiber [46].

Hazelnut

Hazelnut is a food source that has been grown by humans for a long time and provides high energy as a result of consumption. Although the nutritional content varies according to the grown species, it usually receives most of the calories (81%) from fat. Hazelnut, folic acid, Vitamins E, K

and C, iron, zinc, copper, magnesium, minerals such as potassium, protein, is also a rich source in fiber [47].

Pistachios

Pistachios are a good source of plant protein. Pistachios contain 60% fat and 20% protein. It should be used in moderation in daily diets in order to contain high levels of fat. It also has a high antioxidant potential. Although it is generally consumed as nuts, it is also used in bread, cake, ice cream and confectionery. It is rich in pistachios, protein, fat, K, A and B group vitamins, potassium, phosphorus minerals and fiber [48].

Almond

The almond tree is one of the first trees in history to be domesticated. It is an important commercial product in the world. California and the United States are the countries that are most widely produced and meet the world's needs. It is consumed as raw and roasted snacks alone, but is also used to make cakes. In addition, because of the high fat content, oil is removed for use in the field of health. Almonds are rich in protein, fiber, vitamins E and B, magnesium, copper, phosphorus and potassium minerals [47].

Cucurbita Seeds

They are edible seeds of pumpkin or other types of pumpkins. The seeds are typically flat, asymmetric or oval. *Cucurbita seeds* are rich in vitamin B, E, potassium, magnesium, phosphorus, manganese, selenium and zinc ^[2].

THE IMPORTANCE OF THE NUTRITIONAL VALUE OF CUCURBITA SEEDS AND THE LIVING

Wound healing effects have been mentioned in experiments on injured animals due to antioxidant (vitamin E and carotenoids) substances contained in pumpkin seeds and oil. Especially in the experiments, pumpkin seeds and pumpkins can lower blood sugar levels are among the important results [41]. In the other study, after the oil of the kernel was taken, the remaining pulp portion was given to the experimental animals in daily doses and as a result, it was seen that the damage caused by toxins in the liver was eliminated [49]. In another study, pumpkin seed oil was given to experimental animals with high blood pressure with certain measures and as a result blood pressure medication was found to be more effective [50].

RESULT

Pumpkin seed, which has a beneficial fatty acid composition for human health, is a good oilseed for daily needs because it contains high levels of protein, carbohydrates and fats when looking at the physical and chemical properties of its oil. It may be recommended to expand the commercial and herbal use of pumpkin seed oil and to add it to daily diets. Especially after pumpkin seed harvest, the use of the remaining waste in animal nutrition without being left to nature is the result of good waste management. Cucurbita seeds can also be used as a supplementary food in the food industry.

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