

HEMP – IMPORTANT ASPECTS AND BENEFITS FOR HUMANS

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Abstract: Hemp is one of the oldest industrialized plants on the planet, having existed for over 10,000 years, meaning close to the beginnings of pottery. It is one of the fastest growing plants and was one of the first plants to be transformed into usable fibers 10,000 years ago. Hemp can be processed into a variety of products, including paper, textiles, clothing, biodegradable plastics, paint, isolation, biofuel, food and animal feed. The purpose of this paper is to highlight the benefits on multiple levels of hemp.

Key words: hemp, benefits, humans

INTRODUCTION

Hemp has more than a thousand different varieties [7,8,10,12,13,15]. It is cultivated almost everywhere in the world, and its properties are highlighted by millions of people. It helps to regeneration, restore balance and supports quality sleep. Due to the content of cannabinoids, flavonoids, terpenes and vitamins, it can be a natural help for a variety of situations: for example, in case of inflammation, anxiety or pain.

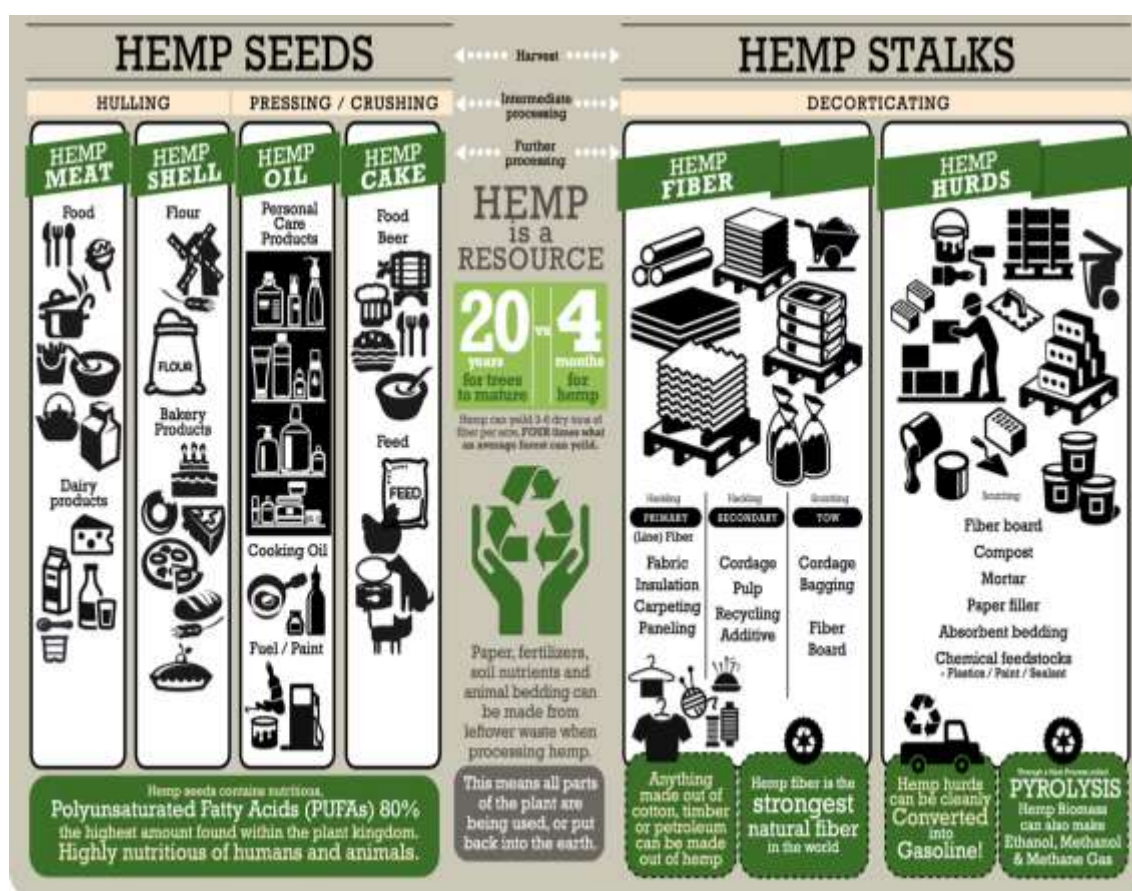


Figure 1. Important aspects and benefits of hemp for humans

Source: <https://cannabis-sativa.ro/>

The botanical genus of hemp (Cannabaceae) has several species, but their exact number is debatable. Hemp comprises three main species: Cannabis sativa, Cannabis

indica and *Cannabis ruderalis*, but experts question whether the species do not overlap and some of them are not a single subspecies. In any case, it is an annual, dioecious plant (some plants are male, others female), which is characterized by a long stem, large leaves divided into leaflets, with a notched edge. The flowers, yellow-green, are grouped in spike-like inflorescences. The fruit is a smooth brown-gray nut. Hemp comes from Central Asia, some scientists even mention South Asia.

The most used and widespread is *Cannabis sativa*. It is a crop plant that is grown mainly for the production of ropes, ropes, textiles, paper, but also briquettes or insulating materials. But, it is also popular as a medicine. The earliest written record of hemp consumption was made by the Greek historian Herodotus. It refers to the steam bath with hemp visited with pleasure by the Greeks and Romans. Hemp fame spread throughout the Islamic empire to North Africa. In 1545, the Spaniards took it to Chile, from where it spread to North America. The locals made ropes, clothes and paper out of it.

MATERIALS AND METHODS

In order to fulfill the purpose of this paper we used a multi-criteria analysis, using many types of materials: some databases from the field, some statistics, and many theoretic studies.

RESEARCH RESULTS

Hemp can be a sustainable culture for rural area [1,2,3,4,5]. Hemp is rich in vitamins, minerals, fiber, terpenes, chlorophyll, flavonoids and cannabinoids. The latter group includes compounds such as THC, CBD, CBC.

Tetrahydrocannabinol (THC) is the main psychotropic substance in hemp, so there is a long-standing debate about banning, restricting or adjusting hemp cultivation. A UN directive imposed a global ban on hemp in 1961. Following its adoption, varieties with a low THC content were produced, and since the 1980s in the EU it has been possible to grow hemp varieties with a maximum THC content of 0.2% (under the term technical hemp). In the Czech Republic, the issue is governed by the 1998 law, which stipulates a maximum permissible THC content of 0.3%. However, hemp teas and infusions have not lost much of their benefits through these regulations. Thanks to cannabidiol (CBD), which is not psychoactive, they offer many positive benefits. Like cannabichromene (CBC), they help with inflammation, pain, mood swings and indigestion, among others.

More than 50,000 products can be processed at the hemp plant, and from one hectare of hemp, four times more wood is produced, compared to one hectare of forest. The proportion of carbon dioxide taken up by hemp is three times higher than the leaves of trees. In terms of food, hemp seeds are much richer in protein, essential amino acids, Omega 3 and 6, than the seeds of soy, flax, pumpkin or sesame. And in the pharmaceutical sector, the contribution of hemp is recognized even in cancer treatments. Hemp can also extract the healthiest oil, as well as environmentally friendly fuel.



Figure 2. Hemp plant

Source: <https://cannabis-sativa.ro/>

Hemp is considered the plant that gives the strongest textile fiber in the world. This is why it is also used in the manufacture of clothes, various fabrics, ropes and construction materials. Hemp can also replace almost all toxic petrochemicals, is a sound and thermal insulator in the automotive industry and excellent compost for mushrooms.

The therapeutic qualities of hemp seeds act on four areas: cardiovascular, mental illness, dermatology and the immune system.



Hemp seeds can be biologically included in the category of nuts or oilseeds and can be eaten in various ways such as: vegetable and fruit salads, mashed potatoes, bakery products, pasta and rice recipes, hemp milk.

In terms of nutritional content, hemp seed contains in principle 30% protein, 42% fat and 15% carbohydrates. For diabetics, the glycemic index of hemp seeds is considered low due to its low carbohydrate content. The seeds are also full of nutrients that moderate blood sugar levels. Hemp can offer a wide range of health benefits, the most important being: increasing energy levels, regulating cholesterol levels, improving circulation, strengthening the immune and nervous system, rapid recovery from injuries, reducing stress, reducing the symptoms of atopic dermatitis and allergies.

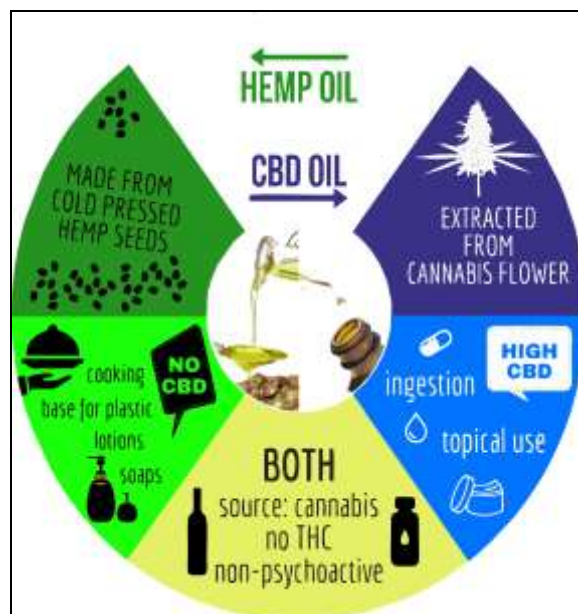


Figure 3. Therapeutic qualities of hemp oil

Source: <https://cannabis-sativa.ro/>

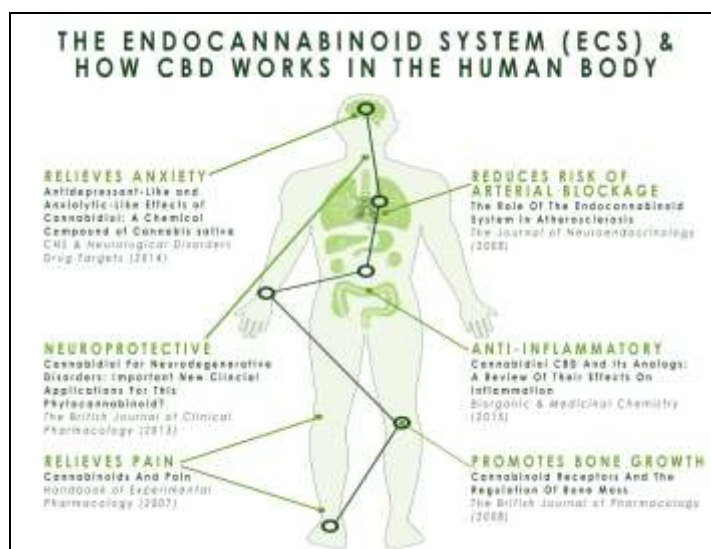


Figure 4. The benefits of consuming hemp seeds for the human body

Source: <https://cannabis-sativa.ro/>

HEMP SEEDS (100g)	
NUTRIENTS	
energy content	553kcal
protein	31.56g
lipids	48.75g
carbohydrates	8.67g
fiber	4g
sugars	1.5g
MINERALS	
iron	7.95mg
magnesium	700mg
phosphorus	1650mg
potassium	1200mg
zinc	9.9mg
manganese	7.6mg
copper	1.6mg
VITAMINS	
B1	1.275mg
B9	110µg
Vitamin A	110I
FAT	
Polyunsaturated fatty acids	38.1g
Linoleic acid	27.36g
Alfalinoleic acid	8.684g
Gamalinoleic acid	1.34g
Trans fats	0g

Figure 5. The composition of hemp seeds

Source: processing after www.paradisulverde.com

Hemp seeds have in their composition a large series of essential amino acids that qualify them as a source of protein as it happens with beef, chicken or fish. Using only three tablespoons of seeds in a salad, or with pasta, rice, and even in a smoothie, is equivalent to 10 grams of the best quality protein. Because animal protein is not usually missing from the diet of people in Western states, it is recommended to include a wide range of vegetable protein sources in a healthy diet, and hemp seeds have proven to be a very good choice. Using three tablespoons of seeds, 50% of the need for phosphorus and magnesium for one day, 25% of the need for zinc and 15% of the need for iron are introduced into the body. Hemp seeds contain fatty acids with good effects on the health of the cardiovascular system. Studies in animals show the effects of fatty acids and the effects of the seed diet on platelet aggregation but also on all heart disease and many other aspects of cardiovascular health [6,9,11,14].

Digestive disorders are alleviated with the help of hemp seeds. Hemp provides a large amount of soluble fiber that keeps the digestive tract healthy and clean. Therefore, in the case of digestive disorders such as constipation and bloating will quickly solve the problem with a tablespoon or two of hemp seeds.

Hemp seeds help prevent cancer. Because this product contains many plant sterols and antioxidants that are useful in reducing the risk of colon, breast and prostate cancer, it is very often used by people who are genetically predisposed to developing certain types of cancer, but also by those who want to prevent the occurrence of this disease.

The brain is composed of several fatty acids that can be found in hemp and therefore regular consumption of hemp can prevent diseases such as Parkinson's and Alzheimer's and can also improve memory. The seeds can also alleviate the symptoms of anxiety and depression and will improve mood.

Hemp oil is obtained by cold pressing industrial hemp seeds, a species cultivated precisely for the production of seeds and fibers. Instead, cannabis oil is the oil obtained from the plant itself (not the seeds) that has been mixed with another oil such as coconut or hemp seeds. Since hemp seeds contain cannabidiol and THC in a low concentration, automatically the therapeutic value of hemp oil is lower. Instead, it is rich in Omega fatty acids and vitamin E, essential nutrients for the body's health. On the other hand, the amount of cannabidiol (CBD) in cannabis oil is much higher: a percentage of about 10% - 20% depending on the species, so the therapeutic properties of this product are much stronger.

In conclusion, we can highlight 9 of the benefits that hemp consumption has on the human body:

1. Digestive system: hemp contains 92% insoluble fiber, with an essential role in cleansing the digestive tract, maintaining the health of the intestinal flora and removing constipation;

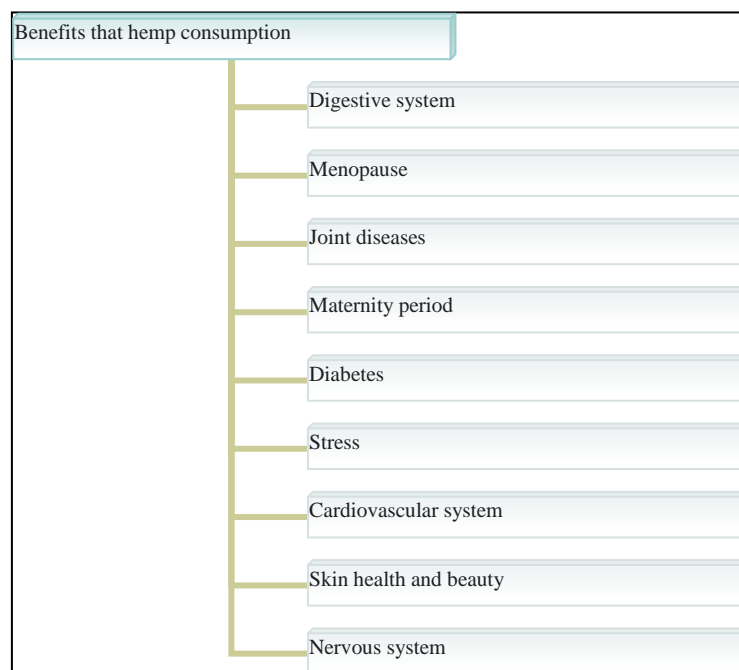


Figure 6. Benefits that hemp consumption

2. Menopause: due to its gamma-linoleic acid content, hemp is recommended in the prevention and treatment of premenstrual syndrome, the symptoms associated with menopause and maintaining hormonal balance.

3. Joint diseases: rheumatoid arthritis can be prevented by consuming hemp because the fatty acids in the Omega 3 family lead to the production of prostaglandin 3 (PG3), a substance with an anti-inflammatory role. Hemp seeds contain these fatty acids, so necessary in the long-term treatment of arthritic diseases.

4. Maternity period: given its nutritional properties, hemp should not be missing from the diet of expectant mothers, but also during breastfeeding. Studies have shown that an increased level of Omega 3 in the mother's body reduces the risk of premature birth and thus leads to an increase in the weight of children at birth. It is also indicated in the diet of babies over 18 months of age because it leads to a noticeable increase in intelligence.

5. Diabetes: hemp is indicated in the diet of people suffering from diabetes because it has a very low glycemic index and its nutrients reduce blood sugar levels. Scientific sources also show that 300 mg of gamma-linoleic acid eliminates stings and numbness in the legs, symptoms specific to diabetics.

6. Stress: stress is combated immediately due to the magnesium and quality proteins in hemp seeds. These are recommended in demanding periods, with a lot of stress, returning us to the normal state of balance.

7. Cardiovascular system: the consumption of hemp oil has an essential role in maintaining the health of the cardiovascular system, by lowering cholesterol and triglyceride levels.

8. Skin health and beauty: hemp oil is beneficial in maintaining skin health and tone. The fatty acids in the composition keep the cell membranes flexible and have antifungal, antiviral and antibacterial properties. There have been cases of healing with this oil in certain skin conditions such as psoriasis or eczema.

9. Nervous system: hemp is beneficial in supporting the balance of the nervous system. Fatty acids are important for maintaining the myelin shield, the lining of nerve cells. As for children, Omega 3 and Omega 6 acids contribute to the harmonious growth of

the brain as well as the development of cognitive functions. It is recommended as an adjunct in cases of compartment problems as well as in situations of hyperactivity.

CONCLUSIONS

Hemp contains linoleic acid from the Omega 6 family and alpha-linolenic acid from the Omega 3 family, also called essential fatty acids (AGEs), elements that are absolutely essential for the proper functioning of the human body. It should be noted that they cannot be synthesized by the human body, so the source from which we can take them is our food itself.

Therefore, we must consume hemp oil because it is the only vegetable oil that has a 3:1 ratio of Omega 6 and Omega 3, an ideal ratio that keeps blood vessels clean, thus preventing cardiovascular disease.

Studies have shown that, in the whole vegetable kingdom, hemp is the only plant that provides us with the necessary proteins, which are 100% assimilated by the human body. It has been found that 65% of its protein content is globular protein. It is easy to digest and helps boost immunity by stimulating antibodies against attackers and harmful agents. Hemp protein is rich in all 21 amino acids, of which 8 essential amino acids cannot be synthesized by our body.

REFERENCES

- [1]. **ADAMOV TABITA CORNELIA**, 2006, The policy of regional rural development—present and perspectives, Energy Efficiency and Agricultural Engineering, Association of Agricultural Engineering in Southeastern Europe, Rousse, Bulgaria, ISSN: 1311-9974
- [2]. **DAVIDESCU D., VELICICA DAVIDESCU**, 1994, Agricultura biologică—o variantă pentru exploatarea mică și mijlocii. Editura Ceres, București
- [3]. **MATEOC-SÂRB NICOLETA**, 2000, Dezvoltare rurală și regională, Editura Agroprint, Timișoara
- [4]. **OTIMAN P. I.**, 1997, Dezvoltarea rurală în România, Editura Agroprint, Timișoara
- [5]. **VINCZE MARIA**, 2000, Dezvoltarea regională și rurală—Idei și practici, Presa Universitară Clujeană, Cluj-Napoca
- [6]. *** <https://www.paradisulverde.com/blog/totul-despre-seminte-de-canepa-beneficii-proprietati-indicatii/#Beneficii-Seminte-de-Canepa>
- [7]. *** <https://cannabis-sativa.ro/>
- [8]. *** <https://agointel.ro/101962/cultura-canepa-investitie-semanat-ingrijire-recoltare-productie-preturi/>
- [9]. *** <http://www.antenatelor.ro/fermier-in-romania/util-in-agricultura/33916-canepa-cultivata-in-limitele-legii,-aduce-un-profit-urias.html>
- [10]. *** <http://www.scda.ro/oferta/Tehnologie-canepa.pdf>
- [11]. *** <https://business24.ro/articole/productie+canepa>
- [12]. *** https://www.economica.net/fibra-de-aur-a-romaniei-redevine-de-interes-ministerul-agriculturiin-da-liber-culturilor-de-canepa_118464.html
- [13]. *** <https://agointel.ro/100605/cultura-de-canepa-subventie-hectar-apia/>
- [14]. *** <https://www.lumeasatului.ro/articole-revista/agrotehnica/3664-valoarea-canepii-redescoperita-si-benefic-valorificata.html>
- [15]. *** <https://ideideafaceri.manager.ro/articole/oportunitati-de-afaceri-3/cultivarea-canepii-o-afacere-cu-potential-urias-pentru-care-primesti-subventii-generoase-13637.html>