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Short Communication

Pharmacological Activity from *Pinus nigra*

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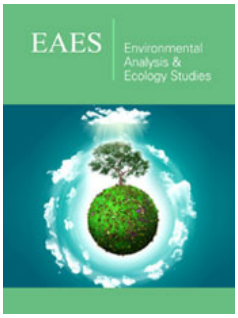
Abstract

Recent research has shown that treating diseases with dendrotherapy (tree therapy) is not very simple. It has been proven that in some region's trees in some way influence man, and in others, the same tree has different effects. For medicinal purposes, cones, resin and needles are used. Cone buds are picked in spring. They extract the essential oil or they can be dried. These are the source of essential oils used in disinfectants. The resin, which is harvested from the trunks, is distilled and provides turpentine oil for ointments and tuna. Products from pine buds have detoxifying action on the respiratory device. On the one hand, pine-based products stimulate the elimination of secretions and soothe cough, and on the other hand they have bronchodilators and relaxing effect on the upper airways.

Keywords: Pinus nigra; Pharmacological activity; Essential oils

ISSN: 2578-0336



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Submission: January 21, 2019

Published: December 17, 2019

Volume 6 - Issue 4

How to cite this article: Andrei Ioan Curtutiu, Andreea Pele, Ioan Sarac and Monica Butnariu. Pharmacological Activity from *Pinus nigra*. Environ Anal Eco stud. 6(4). EAES.000642.2019.
DOI: 10.31031/EAES.2019.06.000643

Background

Day by day, the plants around us, the trees and the nature in general give us all the best both as food sources and as therapeutic remedies i.e. *Pinus nigra* [1,2]. The curative properties are due to active principles contained in resin, buds and young leaves. *P. nigra* buds are harvested until late spring, before they open, and will be used in phytotherapy and in the pharmaceutical industry [3]. Despite the fact that they are rich in fatty acids, the regular consumption of *P. nigra* shoots helps to lose extra pounds. The explanation is that pinolenic acid ($C_{18}H_{30}O_2$), a polyunsaturated fatty acid in the composition of *P. nigra* buds, stimulates that area of the brain that liberates satiety hormones. For this purpose, it is recommended to consume pine buds between tables or mixed in salads [4,5].

Chemical composition and pharmacological activity: *P. nigra* contain volatile oils with pinen ($C_{10}H_{16}$), limonen ($C_{10}H_{16}$), beta-phellandren ($C_{10}H_{16}$), silvestrol ($C_{34}H_{38}O_{13}$), delta chalene, resins, bitter principles, acetone, alcohols, piniproxide, pinitol, coniferozide, anisaldehyde, caprolactone, boronate acetate, tannins, vitamin C, bioflavonoids. The substances that give the aroma of pine oil are citronelol, pinen [6,7]. Among the "precious" substances contained are essential oils; bitter substances; ascorbic acid; conipherosida.

100g of shoots (buds) of *P. nigra* provides 9mg of vitamin E, an antioxidant that protects cells from attack by free radicals. The B-complex is also well represented in buds, especially B_1, B_2, B_3 and B_9. They maintain skin health, promote good functioning of the viscera, metabolism and nervous system. Of the minerals, the best represented are manganese and copper. 100g of *P. nigra* shoots provide 9mg of manganese, a mineral that plays an important role in bone health, but also in reducing the symptoms of premenstrual syndrome. The same amount of buds provides 1.3mg of copper, a mineral that is involved in the process of producing red blood cells and that maintains skin health. Also, *P. nigra* buds also contain significant amounts of calcium, iron and phosphorus. 100g of *P. nigra* buds contain 17mg of beta-carotene and 9mg of lutein and zeaxanthin.

Biochemical beta-carotene from *P. nigra* turns into vitamin A, a nutrient that acts to maintain the health of the retina [8,9]. In addition, experts have concluded, following detailed studies, that lutein and zeaxanthin delay the development of macular degeneration and cataracts.

Conclusion

P. nigra buds contain a significant amount of unsaturated fatty acids, such as alpha-linolenic acid (a type of Omega 3 fatty acid), oleic acid, which contributes to lowering the level of bad cholesterol and triglycerides, pollenic acid, Omega [9]. Action common cardiovascular health. The antioxidants contained in *P. nigra* shoots effectively with free radicals that promote the appearance of cancer and other types of chronic maladies. At the same time, the same antioxidants help the body develop resistance to infectious agents and viruses, but also delay the aging process.

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