

## Editorial

# Some Less Unknown Application of Perennial Plants from Romania

Adina-Elena Segneanu<sup>1\*</sup>, Daniel Damian<sup>2</sup>, Silvia Velciov<sup>3</sup>, Ioan Grozescu<sup>1,2</sup>

<sup>1</sup>Scient Analytics, SCIENT- Research Center for Instrumental Analysis, Romania

<sup>2</sup>University Politehnica Timisoara, Romania

<sup>3</sup>Victor Babes University of Medicine and Pharmacy, Romania

\***Corresponding author:** Adina-Elena Segneanu, Scient Analytics, SCIENT- Research Center for Instrumental Analysis, Cromatec-Plus, 1 Petre Ispirescu, Tancabesti-Snagov, 077167 Ilfov, Romania. Tel: +40721072589; E-mail: s\_adinaelena@yahoo.com

**Citation:** Segneanu AE, Damian D, Velciov S, Grozescu I (2017) Some Less Unknown Application of Perennial Plants from Romania. Food Nutr J 2: 137. DOI: 10.29011/2575-7091.100037

**Received Date:** 09 June, 2017; **Accepted Date:** 20 June, 2017; **Published Date:** 26 June, 2017

## Introduction

Necessity of increasing food production a direct consequence to global population growth imposed emergence of development of an intensive agriculture had a rapid deterioration of the environment and consequently affected the soil and thus limiting wide world food supply. The consequences was resulted an impoverishment of the soil nutrient which implicitly reverberate on quality of food supply. Also, the increased food demand led to the emergence solutions such as:

- a) reduced food cost;
- b) introducing chemicals that increase the shelf life of food;
- c) artificial food dyes and additives;
- d) antibiotics and hormones from industrial livestock producers;
- e) even genetically modified or chemical treated fruits and vegetables.

Studies have shown that food nutrients play an important role in preventing or even as adjutants in treatment of certain diseases. For this reason, researches have proven that is necessary to fill human needs minerals and vitamins from dietary supplements. Many experts agree that the people health condition decrease continuous [1]. It is well known that there is a direct link between the amount of nutrients in the soil and human health. In last century quality the nutritional value of food nutritional value of foods has decreased dramatically as direct consequence to climate changes and population growth [1]. In this context, there are considerable efforts worldwide toward the design and development of innovative strategies competitive scientifically and economically to increase the quality of life through health status preservation [1]. In this context, is more even it becomes even more stringent to identify new sources of cheap, natural food with high nutritional value. And nature has always been a resource for mankind, virtually inexhaustible.

From ancient time people was discovered that nature offers practically countless possibilities for human survival. Phytotherapy had a major influence in human evolution. And studies on botanical active principles have contributed essentially to the current development of modern pharmacology. Synthetic drugs have proven many times numerous side-effects and even less clinical effective than botanical products. Currently, many people from different parts of the world use often healing herbs for treatment of various diseases. In Romania, nature is presented as a special living being interconnected with humans throughout their entire existence. Romanian spontaneous flora is extremely diverse. And many of these are well-known as healing herbs but also as ingredients, flavor or as food. Moreover, besides the amazing therapeutic effects on human body, by their stunning scent, vivid and highly diverse colorful, these plants offer almost miraculous cures for health, for the soul and for human wellbeing.

This paper aims to become aware for the modern man over the special properties of plants on human health and wellness. The nature always represented the cradle of human life. Therefore, it is essential for us to learn again to cherish nature, to explore the power of plants to cure or relax us. We must understand that only through a sustainable development we will be able to avoid the irrecoverable destruction of natural wildlife, basically, the only real legacy for the next generations. A special part is devoted to a very special plants from Romanian flora with less unknown applications: as food supplements or special culinary recipes.

## Black Locust

The forests of black locust (*Robinia pseudo* black locust, family Leguminosae) called “Bagrin” in Romanian folk language, are spread on large areas of the Romania country, especially in lowland. Black locust blooms from May until the end of June created so-called vast fields of spring “snow” due to their coloring, a true beautiful scented feerie. Black locust honey is very appreci-

ated for its delicious taste but also for therapeutic properties: immunostimulant, digestive disorders (ulcer, gastritis), bronchial, cardiovascular disorders, rheumatism, memory, insomnia, constipation, etc [2-13].

Unfortunately, it is less known that black locust flowers represent an effective cure for several ailments. It is demonstrated their benefic effect on most diverse and stronger pains. One of which is stress, the main problem with which modern man confronts daily can caused serious effects: insomnia, cancer, obesity, diabetes, depression, and cardiac diseases, and sometimes even suicide or mutilations.

Properly used, black locust flowers are a real reservoir of natural health agents with miraculous effects on our body. Their calming effect helps us better cope with problems or difficult states for health, to rest and relax better, detoxify organs and to remove naturally stomach ache or cough. Studies on chemical composition of flower black locust have revealed the presence of: volatile oils, tannins, sugars, chemicals mucilaginous, flavonoids, terpenes, a complex of substances with beneficial effects on health and well-being of human physical and mental [2-13]. In Romanian phytotherapy, black locust flowers are recommended for disorders which occur as result of an inadequate lifestyle, unbalanced diets, stress and, not least, the unhealthy diets: gastric burns, gastric and duodenal ulcer and gastritis, asthma, etc [2-3]. According different studies, the preparations with black locust flowers can be used to combat anxiety, irritability, physical and mental exhaustion and even sexual dysfunction [2-12]. Also, the treatment based on black locust flowers combats muscular cramps nervously generated, soothes coughs, soothes bouts of nervousness and irritation, anxiety and at the same time, may be beneficial in impaired memory, balance and vision [2-12].

Black locust flowers are used in Romania for different culinary preparations: the famous donuts, salads, syrup, sherbet, pancakes, jam, wine, brandy (tuica), liqueur, tea. The flowers are also used as flavoring and for perfumes.

## Elder Plant

Elder plant or *Sambucus nigra*, one of the harbingers of spring, belongs to the family Adoxaceae and is one of the oldest known medicinal plants. Across the globe there are more species of elder and among the best known are: i) *Sambucus nigra*, European elder called "Black elder", ii) *Sambucus canadensis*, the American black elderberry is an ornamental tree with white flowers and dark purple fruit and iii) Blue elder called Mexican Elderberry (*Sambucus nigra cerulea*) with cobalt-blue flowers [4-12].

The healing properties of elder plant are known for a very long time. The flowers were used in cosmetic treatments by the Egyptians, the Greeks used the root to prepare laxative teas and Indian tribes used the fruits and elderflower to prepare various medicinal potions. For this purpose, they use the elder fruits, flowers, leaves or the bark of stem [2-12,14].

Comparison with other healing herbs, the elder plant provides herbal medicine all its component parts: the leaves - because it contains aldehydes glycol, oxalate, and vitamin C, bark and roots for high content of tannins, resins and valerianic acid, ripe fruits that contain the most active ingredients such as organic acids, glycosides, alkaloids, anthocyanins, carotene, tannins, vitamins A, B and C, being appreciated both in herbal medicine and in kitchen [2-12,14]. The beneficial effects of elder powder, tincture, decoction and oil is manifested in action perspiration, diuretic, emollient, anti-rheumatic, laxatives and for headaches [2-12,14-16]. The elder also stimulates the body's resistance and has beneficial effects in a wide range of diseases: kidney, bladder and genitals, stimulates the kidneys, helps to dissolve urinary calculus. It is highly recommended on chronic nephritis, cystitis, renal colic, as an adjuvant in diets, in acute colds, influenza, respiratory failure, bronchitis, bronchial asthma, hoarseness, fever and sweating [2-12,14-16].

Later, different studies on elder compounds have evaluated their biological activity highlighting the presence of antioxidant, antiviral, immunomodulant, cardiotoxic, hypotensive, laxative, antipyretic effects [15-17].

In Romania, the elder grows as a medium-sized tree and is found most often on the edge of forests, in lowland and hills. It is grown mainly for its flowers and fruits. The parts of the elder (root, stem, leaves, and flowers) contain a toxic sap which is why it is used with caution in dosages well controlled after drying, boiling or special treatment, when they become a real natural panacea. But a special attention must be given to the fruit administration as a laxative because uncontrolled quantities can generate adverse effects such as nausea, vomiting, heartburn, shortness of breath, convulsions [2,3].

The *sambucus* fruits and flowers are often used in culinary preparations. In Romania elder flowers are used to prepare true delicacies such as juice (socata), wine or sparkling wine, tea. And the fruits are used to obtain soup, fruit cakes, jam, jelly, food colorants, liqueurs, brandy, etc.

## Ramsons

Besides snowdrops and other spring perennials, Ramsons (*Allium ursinum*) or wild garlic (bear's garlic) is a perennial plant that occurs in the first days of spring in the hill and mountain forests. It has strong green fleshy leaves, with small white flowers arranged in umbrella shape [2-12,15,16]. From botanical point of view, Ramsons is related to garlic, the leaves and stems have its taste and smell. but less strongly, and from a therapeutic standpoint the action of Ramsons is stronger than garlic, proven scientifically, fact explained in that being of wildlife, free grown, uninfluenced by human intervention thus keeping the native attributes. Ramsons could not be naturalized or cultivated being a wild species. It grows only in the forests of oak, beech or ash from Central Europe, including Romania. And the highest quality is to purify the body

starting from the stomach and intestines, liver and gallbladder, blood vessels, which is why it is called the human body “Soap” [2-12,15,16,18,19].

The chemical composition of wild garlic contains is quite complex [2-12,15,16,18,19]. There was identified: essential oil, levulose, sulfur combinations, carotenoids, adenosine, trace elements and vitamins A, C, B complex vitamins, mineral salts of calcium, iron, phosphorus, sodium, copper, etc. [2-12,15,16,18,19]. The plant is very appreciated in phytotherapy and is used in the treatment of a large number of disorders. The beneficial effects are greatly enhanced after cure of fresh leaves and wild garlic juice. But also, it is used the plant tincture [2-12,15,16,18,19]. Leaves used fresh, as juice or tincture treats thrombophlebitis and thrombosis due to their highly efficient blood fluidization and antiplatelet activity [2-12,15,16,18,19]. Due to its strong depurative properties, it helps purify the blood, liver, has beneficial effects on excretory system, improve endocrine activity and cerebral circulation. The plant is used as a good remedy for rheumatism [2-12,15,16,18,19]. The wild garlic has a highly content in adenosine. According to recent studies this biomolecule is assigned an important role in lowering cholesterol, prevents thrombus formation and reduces blood pressure [2-12,15,16,18,19]. Ramsons is considerate as the ideal adjuvant treatment of heart disease, the active substances have antihypertensive effect, improve the memory, prevent arteriosclerosis and banish many other diseases and ailments [2-12,15,16,18,19]. For external use, Ramsons treat eczema, herpes, and various chronic skin diseases [2-12,15,16,18,19]. In Romanian kitchen, Ransoms is used for different salads, puree, pies, pasta, soups, omelettes, sauces, meat balls, stews.

## Nettle

The nettle (*Urtica dioica*, family Urticaceae) often considerate as a deemed weed is a perennial well-known healing herb from ancient times. Grows in gardens, pastures, roadside and water, forests, etc [2-12,15,16,19]. The therapeutic and food properties of nettles are offered by the multitude of bioactive substances contained: amino acids, carbohydrates, proteins, sterols, amines, ketones, flavonoids, tannin, essential oils, acetic acid, formic acid, vitamins (A, B<sub>2</sub>, C and K), minerals (iron, calcium, magnesium, silicon, potassium, manganese) [2-12,15,16,18]. Withal nettle contain a toxin still incompletely identified that will be responsible for irritating on the skin [2-12,15-18].

The main therapeutic properties of nettle are the following: regenerating, remineralizing, hemostatic, depurative, diuretic tonic, anti-inflammatory, antiproliferative, antidiarrheal, antibacterial, hypoglycemic antioxidant, antimicrobial, anti-ulcer, astringent, cicatrizing and analgesic effect. In traditional medicine nettle is used as juice, syrup, tincture, infusion, gargles, compresses, baths with nettle leaves and root infusion [2-12,15,16,18,20,21]. In food are used only young plants collected from unpolluted places, away from roads, urban or industrial centers.

Romanian kitchen used nettle for preparation of many dishes: soup, puree, omelettes, sauces, stews, pies, polenta with nettle puree, pudding of rise with nettle, tarts, nettle borsht, nettle pilaf, nettle ciulama, soufflé, rolls, pancakes, mancarica. Nettle extracts are also extensive used in Romanian cosmetic industry to produce soaps, shampoo.

## Garden orache

Garden orache (*Atriplex hortensis*) or French spinach is an annual plant belongs to Amaranthaceae family [2-12,15-19]. The plant is used for a very long time in phytotherapy for its depurative, detoxifying, antioxidant, regeneration, immunomodulant, cardiovascular, digestive properties [2-12,15-19]. Beside these, orache has great nutritional value due to its high contain of carbohydrates, proteins, carotenoids, oxalic acid, vitamins, minerals (K, P, Ca), chlorophylls and fibers [2-12,15-19].

In Romania orache is a basic ingredient for preparation of many delicious dishes: soups, borscht (vegetable, lamb, yealing, smoked pork meat), pies, sarmale, mancarica with smoked ciolan, tarts, salt cakes (appetizer), omelettes, piuree, ciulama, soufflé, rolls, orache pilaf, pasta, pies, langos with orache, salads.

## Sorrel

Garden sorrel (*Rumex acetosa*) is a perennial herb belong to Polygonaceae family, unpretentious in terms of climate and soil quality. Plant grows both the shade and land exposed to the sun. It occurs from plains to alpine meadows [2-12,15-19]. Although for a long period has been considered as a weed, worthless, currently there are sorrel cultures in many countries. Its sour taste recommends this plant an important food ingredient in different cuisines from Africa, Europe and Asia [2-12,15-19].

In Romania, there are several varieties of sorrel. Most valuable for culinary and therapeutic purposes are cultivated species *Rumex acetosa* (big sorrel) and the spontaneous *Rumex acetosella* (petty sorrel or rabbit sorrel), *Rumex crispus* (curly dock, or curly stevia), *Rumex alpestris* (shepherd sorrel) and *Rumex scutatus*. There are no major differences between these species. Their tastes are quite identical and they have practically the same chemical content [2,3]. There are used mainly the sorrel leaves, contain large amount of: vitamins (A, C, K, E, H, PP and B complex), oxalic acid, essential oils and acids, minerals (iron, magnesium, phosphorus, sulfur and silicon), proteins, sugars, tannins, fibers [2-12,15-19].

Due to their high content of phenolic compounds, the sorrel root is used for various therapeutic purposes: detoxification, treatment of liver disease, to treat skin diseases and even malignant or benign tumors [2-12,15-19]. As medicinal plant, sorrel very different applications: anaemia, lowering of cholesterol, vitamin deficiencies, gastritis, regulates blood pressure, detoxifying, hepatic diseases, anti stress, antioxidant, cancer, antiviral and skin

diseases, weight loss. Due to the high content of oxalic acid, sorrel is not recommended in rheumatic or kidney diseases [2-12,15-19]. Romanian cuisine there is many recipes with sorrel: soups, salads, sorrel mancarica, fish dishes, potatoes stew with sorrel, lamb dishes, sauces, ciulama with eggs, piuree.

## Dandelion

Dandelion (*Taraxacum officinale*, family Asteraceae) is a perennial plant with long leaves and yellow flowers and is present in temperate climate in the greatest time of year. Dandelion is a medicinal plant used for centuries in Europe, North America and Asia [2-12,15-19]. Main phyto compounds identified in dandelion (root and leaves) are: taraxacin, taraxacerin, phenolic acids, tanins, carotene, terpenoids, flavonoids, sterols, carbohydrates (inulin, etc) vitamins (A, B complex, C, D), minerals (B, Ca, K, Cu, P, Mg, Mn, Cl, Si, Zn) [2-12,15-19,22].

The biological activity of the plant is complex: choleric, anti-inflammatory, antioxidative, anti-carcinogenic, analgesic, anti-hyperglycemic, anti-coagulatory, laxative, astringent, diuretic, tonic [2-12,15-19,22]. This folk medicine recommend this plant for a great variety of disorder: digestive (cirrhosis, hepatitis, gastritis, dyspepsia, biliary dischiesis, constipation), anemia, mastitis, respiratory diseases (bronchitis, pneumonia), dermatological disorders (acne, eczema, psoriasis), osteoarthritis, gout, hypertension, muscular spasm, etc [2-12,15-19,22].

All components of the plant (flower, root, leaves) are used for culinary preparations. Most common are leaves for salads, root for coffee substitute and flower for dandelion oil. In Romanian kitchen dandelion are used to prepare: syrup, jam, salad, honey, soups, dandelion flower in dough, salad, tea and smoothie. Also from can be obtain oil dandelion for cosmetic use and different kind of pain (breast, muscle, etc)

## Red Clover

Red clover (*Trifolium pratense*, family Fabaceae) is herbaceous perennial plant occurs in Europe, America, Africa and Asia both cultivated as animal feed or sponstaneous in meadows [2-12,15-19]. Plant contain: isoflavons (daidzein and genistein), isoflavonoids, volatile oils, sterols, phenolic acids (including salycilic acid), terpenes, minerals (Ca, Cr, Mg, P, K, Si), vitamins (A, E, C, B complex) [2-12,15-19,23,24]. The red clover is known as a healing herb for women infertility, menopause due to the presence of high amount of isoflavons, a phytoestrogens that in human body mimic estrogen activity [23,24]. The other therapeutic propertis includ: dermatological disorders (eczema, psoriasis, skin injuries, burns, melanom), anticancer, osteoporosis, detoxified effect, prevention of cardiovascular diseasis, cough [2-12,15-19,23,24].

Unfortunately, nowadays the red clover had only few culinary applications. Romanians consume it as: honey, salads, juice, tea, jelly, wine, cakes. Food supplements based on red clover are very appreciated on Romanian market.

## Conclusions

Studies on phytotherapeutic properties of healing herbs used for very long time in folk medicine still continues to represent a top subject in order to identify new natural bioactive compounds with high pharmacological activity. Another important reason consists in fact that most of perennial plants considered by modern humans as simply worthless weeds, due to their high nutrient value could represent an efficient, available and cheep alternative to processed foods. It should not be forgotten that, there are a synergic interdependence between a balanced nutrition and human health which represent an integrant part of food security concept.

## References

1. Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development, 2015, International Food Policy Research Institute, Washington USA, ISBN: 978-0-89629-883-5.
2. Bojor O (2003) Ghidul plantelor medicinale și aromatice de la A la Z. (ed.) Fiat Lux, ISBN 973-9250-68-8.
3. Bojor O, Perianu C (2005) Pledoarie pentru viață lungă: sănătate prin semințe, legume și fructe. (A 3-a edition), București: Fiat Lux, 2005, ISBN 973-9250-85-8.
4. Sandberg F, Corrigan D (2001) Natural Remedies. Their Origins and Uses, New York, Taylor & Francis.
5. Phillipson JD (2001) Phytochemistry and medicinal plants. Phytochemistry 56: 237-243.
6. Bone K, Mills S (2012) Principles and practice of phytotherapy: modern herbal medicine. (2nd edition), Churchill Livingstone Elsevier, ISBN: 9780443069925.
7. Mills SY, Bone K (2004) The Essential Guide to Herbal Safety. (1st edition), Churchill Livingstone Elsevier, ISBN: 9780443071713.
8. Davies JR (2013) The Complete Home Guide to Herbs, Natural Healing, and Nutrition. Crossing Press, ISBN-10: 1580911455.
9. Francesco B, Corbetta F (1985) The Complete Book of Health Plants: Atlas of Medicinal Plants, Crescent Books, New York.
10. Roy G (1988) Edible Wild Plants, a Guide to Natural Foods. (van der Marck Editions), New York.
11. Schulz V, Hänsel R, Tyler VE (2001) Rational Phytotherapy. A Physician's Guide to Herbal Medicine. (4th Edition), Berlin, Springer-Verlag.
12. Tyler VE (2000) Herbal medicine: From the past to the future. Public Health Nutr 3: 447-452.
13. Veitch NC, Elliott PC, Kite GC, Lewis GP (2010) Flavonoid glycosides of the black locust tree, *Robinia pseudoacacia* (Leguminosae). Phytochemistry 71: 479-486.
14. No authors (2005) *Sambucus nigra* (Elderberry) Monograph. Alternative Medicine Review, Thorne Research, Inc 10: 51-55.
15. Duke JA, Bogenschutz-Godwin MJ, duCellier J, Duke PAK (2002) Handbook of Medicinal Herbs. (2nd edition), CRC Press LLC.
16. Tutin TG, Heywood VH, Burges NA, Valentine DH, Walters SM (2001) Flora Europaea. volume 2, Cambridge University Press, ISBN 978-0-521-80570-4.

17. Ho GT, Wangenstein H, Barsett H (2017) Elderberry and Elderflower Extracts, Phenolic Compounds, and Metabolites and Their Effect on Complement, RAW264.7 Macrophages and Dendritic Cells. *Int J Mol Sci* 18: 584.
18. Anderson WP (1999) Perennial weeds: characteristics and identification of selected herbaceous species. Wiley-Blackwell. ISBN 978-0-8138-2520-5.
19. Seidemann J (2005) World spice plants. Springer. ISBN 978-3-540-22279-8.
20. Konrad L, Muller HH, Lenz C, Laubinger H, Aumuller G, et al. (2000) Antiproliferative effect on human prostate cancer cells by a stinging nettle root (*Urtica dioica*) extract. *Planta Med* 66: 44-7.
21. Safarinejad MR (2005) *Urtica dioica* for treatment of benign prostatic hyperplasia: a prospective, randomized, double-blind, placebo-controlled, crossover study. *J Herb Pharmacother* 5: 1-11.
22. Schütz K, Carle R, Schieber A (2006) Taraxacum-a review on its phytochemical and pharmacological profile. *Journal of Ethnopharmacology* 107: 313-323.
23. Bodinet C, Freudenstein J (2004) Influence of marketed herbal menopause preparations on MCF-7 cell proliferation. *Menopause* 11: 281-289.
24. Roberts DW, Doerge DR, Churchwell MI, da Costa GG, Marques MM, et al. (2004) Inhibition of extrahepatic human cytochromes P450 1A1 and 1B1 by metabolism of isoflavones found in *Trifolium pratense* (red clover). *Journal of Agricultural and Food Chemistry* 52: 6623-6632.