

# NUTRACEUTICAL ANALYSIS OF *Petroselinum crispum* DRIED LEAVES POWDER

Dr. Ekta Singh Chauhan<sup>1</sup>, Jaya Aishwarya<sup>2\*</sup>

<sup>1</sup> Associate Professor, <sup>2</sup> Research scholar.

Department of Food Science and Nutrition, Banasthali University, Banasthali. Dist- Tonk. Rajasthan.

**Abstract :** *Petroselinum crispum* is a green biennial hedge plant which belongs to Apiaceae family indigenous to Europe and Western Asia. The work mainly focuses on the nutraceuticals potential of *Petroselinum crispum* leaf powder. The nutrient contains of the leaf powder was determined by various methods and phytochemicals screening of the leaf extract was done by different procedure. Leaves of this plant are rich in carbohydrate, protein and fiber; and also rich in vitamin C, iron, zinc and calcium. The aqueous extract of leaves and flowers of *Petroselinum crispum* showed presence of steroids, alkaloids, phytoestrogen, tannins and saponins. The protecting cause of plant is due to the presence of numerous elements such as carotenoids, flavonoids, gallic and phenolic compounds. The results record that leaves powder contains different types of nutrients and phytochemicals in it. Flavonoids like apigenin, chrysoeriol and quercetin are chief components in *Petroselinum crispum* plant that decrease the oxidative damage associated to cancer, aging, atherosclerosis, ischemic damage, soreness and neurodegenerative diseases. Leaves, seeds and roots of *Petroselinum crispum* are used as hepatoprotective, brain protective, anti-diabetic, analgesic, spasmolytic, immunosuppressant, anti-anemic, menorrhagic, anti-coagulant, anti-hyperlipidemic and many more diseases.

**IndexTerms-** *Petroselinum crispum*, anti-oxidant, bioactive compounds, nutraceuticals.

## I. INTRODUCTION

*Petroselinum crispum* (Parsley) is an herbal plant which belongs to *Apiaceae* family indigenous to Europe and western Asia. *Petroselinum crispum* is having therapeutic potential as well as used for additives, garnishing, condiment, essence and fragrance. *Petroselinum crispum* is also used in cosmetics industries mostly China, Mexico, South America, India and South-East Asia. In India it got cultivated in Jammu and Kashmir, Punjab, Uttarakhand, Uttar Pradesh, Maharashtra and Karnataka states. *Petroselinum crispum* leaves look like coriander leaves but the taste and aroma hold different views. *Petroselinum crispum* contains small, dark seeds which content volatile oil<sup>[1]</sup>. In Britain, they like better curly leaves forms for culinary purposes and on the continent plain leaves varieties are preferred for garnishes and flavoring<sup>[2]</sup>. *Petroselinum crispum* fresh and dry leaves are rich source of phytochemical and anti oxidant as well as its essential oils also holds important place. Many studies showed that it contains flavonoids, carotenoids, luteolin, apigenin, ascorbic acid, tocopherol and apiol are the main essential compounds. *Petroselinum crispum* contains many antioxidant properties, luteolin<sup>[3]</sup>, flavonoid, coumarins, tocopherol, myristicin<sup>[4]</sup>, essential oils and phenolic compounds<sup>[5]</sup>. Carotenoids, vitamin-A, B and C<sup>[6-7]</sup>; minerals like iron, zinc calcium, phosphorus are also present in *Petroselinum crispum* leaves<sup>[8-9]</sup>.

*Petroselinum crispum* leaves also contain n-3 omega fatty acids like linolenic and palmitic acid<sup>[10-11]</sup>. Presence of bioactive compounds make *Petroselinum crispum* is rich in pharmacological activities like hepatoprotective, brain protective, anti-diabetic<sup>[10]</sup> analgesic and spasmolytic. As well as beneficial for immunosuppressant, anti-anemic, menorrhagic, anti-coagulant, anti-hyperlipidemic, anti-hypertensive effects anti-platelet, anti-inflammatory, anti-hepatotoxic and anti-tumor<sup>[11-12]</sup>. Allergy similar to asthma<sup>[13]</sup>, gastro protective, cytoprotective, laxative, estrogenic, diuretic, chronic bronchitis, dyspepsia and hypotensive<sup>[14-15]</sup> Alzheimer's disease, thrombosis and strokes<sup>[16]</sup> are also alleviated by *Petroselinum crispum*.

## II. MATERIALS AND METHODS

**2.1. Collection of plant materials:** Leaves of *Petroselinum crispum* leaves were brought from J.K. Impex Pvt. Ltd. Vashi, Navi Mumbai, Maharashtra, India.

**2.2. Preparation of leaves powder:** *Petroselinum crispum* dried leaves were powdered in electronic grinder and stored in air tight container for further use.

**2.3. Nutrient Analysis:** Nutrients were analysis by various methods like estimation of carbohydrates by Difference method<sup>[19]</sup>, estimation of fat by Soxhelt method<sup>[20]</sup> and estimation of protein by Microkjeldhal method<sup>[20]</sup>. Estimation of moisture content<sup>[19]</sup>, crude fiber<sup>[21]</sup> and ash<sup>[19]</sup> were also determined. Preparation of aliquot from ash for the estimation of iron by Wong's method<sup>[19]</sup> and

estimation of calcium by Titrimetric method<sup>[21]</sup>. Estimation of vitamin C by Titrimetric method<sup>[21]</sup>, and estimation of zinc by AOAC method<sup>[22]</sup>.

**2.4. Phytochemicals:** The aqueous extract of *Petroselinum crispum* dried leaves powder were extracted for the phytochemical screening like alkaloids by Mayer's test<sup>[23]</sup>, glycosides by Modified Borntrager's test<sup>[24]</sup> terpenoids by Salkowski test<sup>[23]</sup>, Saponins by Foam test<sup>[24]</sup>. Tannins by Gelatin test<sup>[23]</sup>, phytosterol by Libermann Burchard's test<sup>[24]</sup>, flavonoids by Alkaline Reagent test<sup>[24]</sup>, phenolic compound by Ferric Chloride test<sup>[24]</sup>. Steroids<sup>[25]</sup> and galetin<sup>[26]</sup> were also determined.

### III. RESULTS and DISCUSSIONS

#### 3.1. Table No. – 1 Nutrients Analysis of *Petroselinum crispum* Leaves Powder

S.No.	Nutrients	Amount
1.	Moisture	20.66gm
2.	Protein	2.5gm
3.	Fat	1.2gm
4.	Fiber	8.4gm
5.	Ash	11.8gm
6.	Carbohydrate	55.44gm
7.	Iron	10.4 mg
8.	Vitamin C	17.64mg
9.	Calcium	18.03mg
10.	Zinc	56.04ppm

In Table No.-1, showed that nutrient composition in the dried *Petroselinum crispum* leaves powder in which contain of macro nutrient are carbohydrate (55.44 gm), moisture (20.66 gm), protein (2.50 gm), fat (1.25 gm), fiber (8.40 gm) and ash (11.80 gm). Micro nutrient are also present in *Petroselinum crispum* such as vitamin C, iron and calcium (17.64 mg), (10.4mg) and (18.03 mg), respectively and contain of zinc is (56.04ppm).

#### 3.2. Table No. – 2 Phytochemical Analysis of *Petroselinum crispum* Leaves Powder Extract

S. No.	Phytochemicals	<i>Petroselinum crispum</i>
1.	Alkaloids	+
2.	Glycosides	-
3.	Tannins	+
4.	Saponis	+
5.	Phytosterol	+
6.	Terpenoids	+
7.	Steroids	+
8.	Phenolic Compound	+
9.	Flavanodis	+
10.	Anthraquinones	-
11.	Galetin	+

Key :- (+) = present  
(-) = absent

In Table No.: - 2 showed that *Petroselinum crispum* leaves are enclose with alkaloids, tannins, saponins, phytosterol, terpenoids, steroids, phenolic compounds, flavonoids and galetin. Whereas deficient in glycosides and anthraquinones.

Different parts of *Petroselinum crispum* plant are also used in curing diseases such as the roots are used in flatulence, cystitis. Leaves and stems are remedy for menstrual problems, cystitis, edema, kidney stones, prostatitis, cramps, indigestion, anorexia, arthritis and rheumatism<sup>[27]</sup>. Its leaf, seed and root are being used in eczema, controlling high blood pressure, strengthen the bladder, nose bleeding, hematoma, skin blemishes, ear ache, otitis, emenagogue favoring menstruation and alleviating its pains. *Petroselinum*

*crispum* is also widely used as a galactofuge by lactating mothers to stop excessive milk production [28]. *Petroselinum crispum* root is taken as a treatment for flatulence, cystitis, and rheumatic conditions.

*Petroselinum crispum* are beneficial in the treatment of cadmium neurotoxicity [29-30], antioxidant [31-32], analgesic activity [33], antispasmodic activity [34], humoral and cellular immune response [35], peptic ulcer [36], proliferative activity [37-38] and haematology activity [28]. Arterial hypertension, diabetes, cardiac disease, renal disease, lumbago, high blood pressure, eczema, nose bleed, amenorrhoea, anemia, dysmenorrhoeal and kidney stones [39-41].

## 5. CONCLUSION

Uses of herbal plants are there since ancient times but they are more in *Petroselinum crispum* is one of the famous climbers used for treating numerous diseases. Richest source of nutrients and phytochemicals its all parts are used as medicine for animals as well as humans. hepatoprotective, brain protective, anti-diabetic, cardiac disease, renal disease, lumbago, high blood pressure, eczema properties also present in *Petroselinum crispum* due to owing many nutraceuticals. We can that leaves are rich sources of nutrients and phytochemicals and due to presence of these nutraceuticals *Petroselinum crispum* alleviate many diseases.

## 6. ACKNOWLEDGMENT:

The authors are thankful to Prof. Aditya Shastri Vice-chancellor, Banasthali Vidhyapith, Rajasthan, India and our department of Home Science for providing us lab facilities and financial assistance.

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