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## 100% NATURAL BIRCH TREE CHAGA MUSHROOMS

Grown in the Pristine Forests of Northern Canada



# 100% NATURAL BIRCH TREE CHAGA MUSHROOMS GROWN IN THE PRISTINE FORESTS OF NORTHERN CANADA

Chaga is a highly nutritious mushroom that grows on birch trees in below freezing temperatures. Semintha Chaga grows at -40°C in a primeval organic environment clear of any nuclear waste, contaminants or other toxins making Semintha chaga mushrooms safe for chronic consumption and highly effective.

Chaga is the dense black mass (25-40 cm large) that can be seen on the outside of birch trees. It is a dense sterile mass of mycelia, with decayed bits of birch tissue incorporated. They are quite rare and difficult to harvest. When chopped from the tree the interior has a rusty yellow-brown color, somewhat granular in appearance, and is often mottled with whitish or cream-colored veins. The hard, deeply cracked black outside of the Chaga is called the sclerotium. Mature Chaga sclerotia are found on trees over 40 years of age. The estimated time period between the times of infection of the tree by the fungus to the maturity of the chaga mushroom is around 20 years. The chaga can be harvested five years post maturity. After harvesting, chaga can regrow to harvestable size again in three to ten years, and this can be repeated until the tree dies.

<b>SUPPLEMENT FACTS</b>
<b>Serving size 3gr</b>
Total Fat 0.03g
Total Carb 2.25g
Cholesterol 0mg
Protein 12g
Sodium 0.42mg
Calcium 1.44mg
Magnesium 1.4mg
Manganese 0.21mg
Potassium 51mg
Sodium 0.011mg
Phosphorus 9,96mg
Iron 0,07mg
Beta Glucan 0,75g
Zinc 0,12mg

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## BENEFICIAL HEALTH PROPERTIES OF CHAGA MUSHROOMS

Chaga Mushrooms are adaptogens, high in polysaccharides, alkalines, phytonutrients, organic acids, calcium, zinc, magnesium, chromium and other important minerals and microelements. Adaptogens help the body and mind achieve and maintain its natural balance with beneficial effects on the nervous system and immune system, the gastrointestinal tract, the cardiovascular system and the endocrine system. By supporting the body and mind adaptogens help cope with stress, stay healthy during the cold and flu season and combat depression and adrenal burnout.

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### GENERAL HEALTH

- Protects & re-generates cells
- Allows better assimilation of dietary vitamins
- Strengthens immune system
- Boosts endurance
- Maintains healthy skin
- Helps digestion
- Helps maintain a healthy heart

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### DETOXIFYING

- Eliminates toxins
- Boosts your energy
- Works as an anti-oxidant

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### LONG TERM

- Can add life to your years
- Make vital organs more efficient
- Slow down the aging process

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## NUTRITIONAL COMPOSITION OF CHAGA MUSHROOMS:

- Potent antioxidants
- Good sources of superoxide dismutase (SOD)
- More than 215 phytonutrients, glyconutrients including: Betulinic Acid, Polysaccharides, Beta Glucans, Tripeptides, Triterpenes including Lanosterol-type Triterpenes, Sterols, Saponins, Inotodiols, Trametenolic Acid and Melanin.
- Significant source of riboflavin and niacin
- Vitamins B and D, flavonoids, phenols, copper, calcium, potassium, manganese, zinc iron and enzymes
- One of nature's richest sources of the minerals rubidium, potassium, cesium and germanium; (maintains body alkalinity). High in Amino Acids, Dietary Fiber, Ionized Trace Minerals (Copper, Selenium, Zinc, Manganese, Iron), Ionized Essential minerals (Magnesium, Potassium, Calcium, Chloride,

Sodium, Phosphorus), Vitamin B1 (Thiamine), B2 (Riboflavin), B3 (Niacin), Vitamin D2 (Ergosterol), which is not found in vegetables.

- Great source of pantothenic acid
- Vital source of plant based sterols
- Betulin and Betulinic Acid

## CHAGA MUSHROOM HEALTH BENEFITS

Chaga improves and stimulates the immune response, regulates glucose metabolism, reduces inflammation, is a potent antioxidant and inhibits mutagenic cell growth.



### Chaga is rich in Phytonutrients

Phytonutrients may serve as antioxidants, enhance immune response, enhance cell-to-cell communication, alter estrogen metabolism, convert to vitamin A (beta-carotene is metabolized to vitamin A), repair DNA damage caused by smoking and other toxic exposures and detoxify.

Chaga Mushrooms contain Glyconutrients; plant saccharides that provide support for the immune system. Glyconutrients play a key role in supporting your immune system and promoting effective cell-to-cell communication. Recent scientific research has shown that eight simple sugars (monosaccharides) combine with proteins and fats to create glycoforms that coat the surface of nearly every cell in the body and function as cellular recognition molecules that communicate the messages a body needs to function in health. These messages directly affect proper organ and system function including the immune and endocrine systems.

### Chaga Mushroom Polysaccharides

Mushroom polysaccharides act as carriers of other nutrients, delivering them to where they are needed most in the body to increase bio-availability to maintain optimum health.



### Chaga contains Beta-glucans

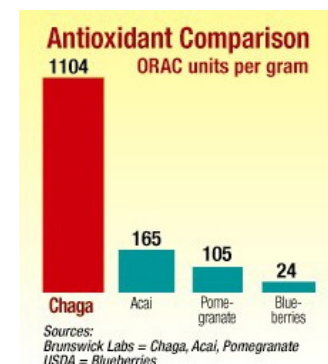
Chaga is a rich source of Beta-Glucans which performs immuno-modulating properties helping the body identify cancer cells as foreign.

### Superoxide Dismutase in Chaga

Chaga mushrooms have the highest levels of Superoxide Dismutase (SOD) found in any natural food and is extremely high in antioxidants. Other foods like wheatgrass, broccoli and some cabbages also contain SOD but in much smaller amounts.

### Immune Support

Chaga mushrooms are often used as an immune system modulator with demonstrated anti-inflammatory and anti-parasitic properties. Chaga is a unique polypore fungus that is also anti-viral, anti-fungal, anti-microbial and anti-Candida.



### Triterpenoids and Sterols

Triterpenes immune and cardiovascular system strengthening properties increase the body's ability to resist disease, lower cholesterol levels and promote the destruction of foreign abnormal cells. The immune-modulating properties of Lanosterol-linked triterpenes have been validated by Dr. Kirsti Kahlos, School of Pharmacology, University of Helsinki, Finland. Dr. Kahlos' team conducted studies validating the immuno-modulating impact of Lanosterol-linked triterpenes effective as a flu-vaccination and for anti-tumor applications.

### Betulinic Acid (phytosterol)

Chaga is rich in Betulinic Acid a phytosterol which is naturally present in the bark of the Birch tree. Betulin from the Birch tree is converted into Betulinic Acid by the Chaga Mushroom making it soluble for us to ingest into the bloodstream.



### Ergosterol (Vitamin-D2).

One of three vitamins able to be absorbed by the skin and the only one that the body is able to manufacture (when exposed to ultraviolet light). This vitamin is necessary for the building of new skin cells, as well as bones, teeth, and hair.

### Saponins

Saponins have been shown to have anti-inflammatory and antioxidant activity.

### Melanin

The Melanin produced by the Chaga mushroom demonstrates high antioxidant and genoprotective effects. Melanin enhances the appearance of hair, skin and eyes, and restores a more youthful appearance.



## SELECTION OF RESEARCH ON CHAGA MUSHROOMS

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## Introducing a premier source of Birch Sap located on the North American continent...

### *Extracting Value from Nature*

### *Birch Trees - Non-Timber Resource*

Birch Sap is set to be the consumer's health and beauty essential for years to come.

*Coconut water has become the go-to health drink that delivers energy-boosting effects without the extra calories or sugar. But the days of the coconut water craze may be limited by a nature-given energy drink: birch tree sap. Medical Daily June 8, 2015*

- Birch Sap originates from countries where temperatures reach minus 20-30 degrees Celsius.
- Birch Sap is collected by taking the tree trunk in early spring when the birch tree awakes from a deep dormant winter period.
- The sap is super concentrated, vitamin and mineral rich, and contains all the ingredients for the birch tree to burst back into life for the short northern summer.
- Birch sap has a slightly sweet and refreshing taste. Birch sap contains several groups of soluble constituents, including sugars, minerals, organic acid and free amino acids, some of which are bioactive medicinal ingredients, electrolytes.
- It is rich in nutrients including, manganese, iron, calcium, potassium, magnesium, zinc and phosphorous.
- Birch sap has amino acids present, including glutamine, citrulline, glutamic acid, isoleucine, valine and asparagine are present in birch sap. The dominant amino acid, glutamine comprises about 40% of the entire pool.
- Like coconut water, it is believed to be adept at rehydration. What separates it from coconut water is that it also contains saponin which has been shown to control blood cholesterol levels, and to be good for the immune system.
- Birch sap is known to help cleanse and remove toxins from the body; it helps nourish the body's cells with organic acids.
- It has been enjoyed for centuries for its purifying, diuretic, and strengthening properties.
- It provides the skin with vitamins and other biologically active substances, such as free amino acids, and valuable sugars to rejuvenate, protect and reduce the signs of aging.



### **Opportunity**

Semintha Nutraceuticals LTD presents nature's "elixir of life." Birch Sap presents the opportunity for uses in the following product types:

- Cosmetics / Cosmeceuticals
- Functional Beverages
- Functional Food
- Dietary Supplements

### **Supporting Documentation**

Attached product specs.





## SEMINTHA BIRCH SAP

### CERTIFICATE OF ANALYSIS

Production Date: 2017.05.13      Expiry Date: 2018.05.20  
Analysis Date: 2017.05.20      Analysis No.: B693949  
Report Creation Date: 2017.05.20      Last Revision: 2017.07.01

SEMINTHA BIRCH SAP (REVERSE OSMOSIS 90%)		
NUTRITIONAL PARAMETERS		
VITAMIN C	mg/100g	1,970.0
CALCIUM	mg/L	1,110.0
MAGNESIUM	mg/L	320.0
SODIUM	mg/L	251.0
CHLORIDE	mg/L	490.0
IRON	mg/L	2.2
ZINC	mg/L	30.6
PHOSPHORUS	mg/L	60.8
POTASSIUM	mg/L	1,128.0
MANGANESE	mg/L	100.0

Approved by

*Tina Sampalis M.D., Ph.D.*

