

## **Birch Fungi – Razor Strop, Birch Bracket (*Piptoporus betulinus*, *Fomitopsis betulina*)**



**Features** - This distinctive fungus only grows on birches, looks like nothing else that grows on birches, and is very common. It is not an aggressive tree killer, but is instead primarily in the business of decomposing dead trees. Birch polypore is present throughout the range of the birches, which grow around the globe in the northern hemisphere. The white-to-brownish fruiting bodies are annual, emerging from the bark of birches in spring and summer, but they deteriorate slowly and are still visible through the winter, though by then they have blackened and are not so attractive.

**Global Uses** – Otzi the Iceman, who lived 5300 years ago, carried two fragments of a fruiting body of *Fomitopsis betulina* (formerly *Piptoporus betulinus*). Some scientists believe that Ötzi might have used the fungus for medical purposes and, although the idea arouses some controversy, the long tradition of the use of *F. betulina* in folk medicine is a fact. Infusion from *F. betulina* fruiting bodies was popular, especially in Russia, Baltic countries, Hungary, Romania for its nutritional and calming properties. Fungal tea was used against various cancer types, as an immunoenhancing, anti-parasitic agent, and a remedy for gastrointestinal disorders. Antiseptic and anti-bleeding dressings made from fresh *F. betulina* fruiting body were applied to wounds and the powder obtained from dried ones was used as a painkiller.

Was used as a razor strop to sharpen fine edged blades.

**Medicinal Potential** – Chemical Constituents: A and C, 1,3-beta-D-glucopyranan, B ergosta-7,22-dien-3-ol, fungisterol, ergosterol, agaric acid, dehydrotumulosic acid, ungalinic acid, betulinic acid, and tumulosic acid. Also contains 4-methylmorpholine-N-oxide, a methyl sulfoxide soluble glucan, piptamine, and various lanostanoids.

Pharmacological studies have provided evidence supporting the antibacterial, anti-parasitic, antiviral, anti-inflammatory, anticancer, neuroprotective, and immunomodulating activities of *F. betulina* preparations. Biologically active compounds such as triterpenoids have been isolated.

**Research Potential** – Any of the medicinal or commercial potential identified by previous studies can be followed up to further define potential and manufacture of marketable products.

**Commercial Potential** - The mushroom is also a reservoir of valuable enzymes and other substances such as cell wall (1→3)-α-D-glucan which can be used for induction of microbial enzymes degrading cariogenic dental biofilm.

It possesses one of the highest cellulase activities of any fungi, suggesting industrial use. There are a number of applications for cellulase including detergents, textiles, food preparation, and animal feed. Phytase and cellulase will become more valuable fungal enzymes as the use of antibiotic growth promoters becomes more restricted.

**Potential Quantities in Northern Saskatchewan** – This fungus is much more abundant than chaga, so growth in demand will not bring the same level of concern as to overharvest. Supply of up to 1,000 kg (dried) is possible at this point. Given development time, this supply could be increased exponentially.

**Harvest Window** – Harvest is best in the winter months when the sap is not flowing, and resin is frozen. November – March.

**References:** <https://link.springer.com/article/10.1007/s11274-017-2247-0#enumeration>; The Fungal Pharmacy: The Complete Guide to Medicinal Mushrooms and Lichens of North America; Nov 15 2011 - Robert Rogers