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## Chaga mushroom: a super-fungus with countless facets and untapped potential

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### Abstract

*Inonotus obliquus* (Chaga mushroom) is an inexpensive fungus with a broad range of traditional and medicinal applications. These applications include therapy for breast, cervix, and skin cancers, as well as treating diabetes. However, its benefits are virtually untapped due to a limited understanding of its mycochemical composition and bioactivities. In this article, we explore the ethnobotany, mycochemistry, pharmacology, traditional therapeutic, cosmetic, and prospective agricultural uses. The review establishes that several secondary metabolites, such as steroids, terpenoids, and other compounds exist in chaga. Findings on its bioactivity have demonstrated its ability as an antioxidant, anti-inflammatory, antiviral, and antitumor agent. The study also demonstrates that Chaga powder has a long history of traditional use for medicinal purposes, pipe smoking rituals, and mystical future forecasts. The study further reveals that the applications of Chaga powder can be extended to industries such as pharmaceuticals, food, cosmetics, and agriculture. However numerous publications focused on the pharmaceutical benefits of Chaga with few publications on other applications. Overall, chaga is a promising natural resource with a wide range of potential applications and therefore the diverse array of therapeutic compounds makes it an attractive candidate for various applications such as plant biofertilizers and active ingredients in cosmetics and pharmaceutical products. Thus, further exploration of Chaga's potential benefits in agriculture and other industries could lead to exciting new developments and innovations.

**Keywords:** Chaga; agricultural uses; ethnomycology; mycochemistry; pharmacology; traditional uses.

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### Figures



**FIGURE 1** Taxonomic classification of Chaga mushroom.



**FIGURE 2** Geographical locations of Chaga mushroom.



**FIGURE 3** Traditional and ritual uses of...



**FIGURE 4** Timeline events for the Chaga...



**FIGURE 5** The life cycle of Chaga...



**FIGURE 6** Pharmacological potentials of Chaga...

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