Pycnoporus sanguineus

Fungus

Scientific classification
Domain: Eukaryota
Kingdom: Fungi
Division: Basidiomycota
Class: Agaricomycetes
Order: Polyporales
Family: Polyporaceae
Genus: Pycnoporus
Species: P. sanguineus

Binomial Name
Pycnoporus sanguineus
(L.) Murrill (1904)

Macrofungi generally composes of two main parts, the mycelium which is hidden in the substrate where the fungi is found and the fruiting body which forms when conditions are favourable for the fungus to disperse its spores. For identifications, the fruiting bodies are generally used instead of the mycelium due to identifiable characteristics and ease of access. The growth habits of Pycnoporus sanguineus may vary from solitary to clustered, and individuals may even appear to have fused together. When fresh, the fruiting body resembles leather in texture, but feels more flexible when dried.[37,38]

The fruiting body of Pycnoporus sanguineus, comprising of a cap (pilus) and stem, is a brilliant reddish-orange in colour, characteristic to all members of the Pycnoporus genus. Caps can range from 3 –14cm in diameter, and up to 5mm in thickness at the margins. Stems when present may also be 2–7cm long. The underside of the cap reveals a reddish-orange surface that contains numerous tiny circular pores (5-6 per mm).[37]

Pycnoporus coccineus tends to favour colder temperature, and can be found more commonly in temperate regions. Pycnoporus sanguineus can commonly be found throughout the Tropics, especially in regions of America, Africa and the West Indies.[37]

Uses

P. sanguineus was found to be an effective biosorbent for the removal of Pb^{2+}, Cu^{2+} and Cd^{2+} metals.[39]

The white-rot fungi, P. sanguineus, is recommended as a biosorbent for Cd(II), Cu(II), and Pb(II) biosorption in batch and column systems because it is easily available in extensive quantities, easily grown in basic fermentation media and, is low cost. The biosorbent can also be regenerated and reused several times, making it more economical and viable at an industrial scale.[40]

Another use is to optimize the process parameters for the enhancement of silver nanoparticles (AgNPs) production through biological synthesis using Pycnoporus sanguineus.[41]

It can also be used as dye decolorization. P. sanguineus can produce laccase constitutively both in solid substrate fermentation and in submerged liquid culture.[42]