

Mushroom quality related with various substrates' bioaccumulation and translocation of heavy metals

ABSTRACT

Mushrooms are popular due to the nutrition contents in the fruit bodies and are relatively easy to cultivate. Mushrooms from the white-rot fungi group can be cultivated on agricultural biomass such as sawdust, paddy straw, wheat straw, oil palm frond, oil palm empty fruit bunches, oil palm bark, corn silage, corn cobs, banana leaves, coconut husk, pineapple peel, pineapple leaves, cotton stalk, sugarcane bagasse and various other agricultural biomass. Mushrooms are exceptional decomposers that play important roles in the food web to balance the ecosystems. They can uptake various minerals, including essential and non-essential minerals provided by the substrates. However, the agricultural biomass used for mushroom cultivation is sometimes polluted by heavy metals because of the increased anthropogenic activities occurring in line with urbanisation. Due to their role in mycoremediation, the mushrooms also absorb pollutants from the substrates into their fruit bodies. This article reviews the sources of agricultural biomass for mushroom cultivation that could track how the environmental heavy metals are accumulated and translocated into mushroom fruit bodies. This review also discusses the possible health risks from prolonged uptakes of heavy metal-contaminated mushrooms to highlight the importance of early contaminants' detection for food security.