

## The Increase in Functionalities of King Oyster Mushroom (*Pleurotus eryngii*) Mycelia Depending on the Increase in Nutritional Components

**Authors :** Hye-Sung Park, Eun-Ji Lee, Chan-Jung Lee, Won-Sik Kong

**Abstract :** This study was conducted to research king oyster mushroom (*Pleurotus eryngii*) mycelia with reinforced functionalities. 0 to 4% of saccharide components, such as glucose (glu), lactose (lac), mannitol (man), xylose (xyl), and fructose (fru) and 0 to 0.04% of amino acid components, such as aspartic acid (asp), Cysteine (cys), threonine (thr), glutamine (gln), and serine (ser) were added to liquid media, and antioxidant activities, nitrite scavenging activities, and total polyphenol contents of the cultured mycelia were measured. In the saccharide-added group, 4 strains except ASI 2887 had high antioxidant activities when 1% of xyl was added and especially, the antioxidant activity of ASI 2839 was 73.9%, which was the highest value. In the amino acid-added group, the antioxidant activity of ASI 2839 was 66.3% that was the highest value when 0.2% of ser was added. But all the 5 strains had lower antioxidant activities than the saccharide-added group overall. In the saccharide-added group, 4 strains except ASI 2887 had higher nitrite scavenging activities than other group when 1% of xyl was added and especially, the nitrite scavenging activity of ASI 2824 was 57.8% that was the highest value. It was revealed that the saccharide-added group and the amino acid-added group had a similar efficiency of nitrite scavenging activity. Although the same component-added group did not show a certain increase or decrease in total polyphenol contents, ASI 2839 with the highest antioxidant activity had 6.8mg/g, which was the highest content when 1% of xyl was added. In conclusion, this study demonstrated that when 1% of xyl was added, functionalities of *Pleurotus eryngii* mycelia, including antioxidant activities, nitrite scavenging activities, and total polyphenol contents improved.

**Keywords :** king oyster mushroom, saccharide, amino acid, mycelia

**Conference Title :** ICMMP 2018 : International Conference on Mycology and Mushroom Production

**Conference Location :** Barcelona, Spain

**Conference Dates :** May 17-18, 2018