

Studies on the optimal conditions for a high yield of *Ganoderma lucidum* in Korea

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The mycelial, ASI 7004, were used. The inoculum inoculated in PDA and cultured in the growth chamber at 25°C for 6 days. Plastic jar used for artificial cultures of *G. lucidum*. The medium was composed with the mixtures of *Quercus dentata* sawdust and rice bran and maintained 65% moisture (v/v). After mycelial cultivation, the Plastic jar were maintained in two different ways, horizontal and vertical. The room were kept at 28~31°C and R.H. 85~95%, and air-circulated after active growing. Bottle cultivation of sawdust were continued for 50 days. The results of study are as follows; 3 additives(rice bran, wheat bran and soybean bran) to the *Quercus dentata* sawdust were applied to 10, 20 and 30%. High yield was recorded at 20% of rice bran and wheat bran and 30% of soybean bran. Among various sawdust media, the cultivation at the *Quercus dentata* sawdust alone bed showed the most favored growth index, such as 22 days of full mycelial growth, 11 days of pinheading from spawning and 23.5g per 1, 200 ml bottle. Among the size of bottles, the lowest infaction ratio was 5% at 1, 200 ml bottle and 22 days needed for full mycelial growth. At the growth characteristics by the bottle size, Youngji at 1600 ml bottle were the best result observed 13~15 days of pinheading from spawning, 36~37 days of fruitbody growing and 26.7~29.3g yield per bottle. The highest yield per area was 6.4kg at

horizontal bed capable to 218 bottles per 3.3 m² . In the results of Youngji quality by the growth tool, the ratio of high quality was best in 1600 ml bottle with vertical cultivation. The Youngji produced from in 1600 ml bottle with horizontal cultivation had few number of basidiocarp and high yield, thus it is determined as the most economic method.