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

Hong Kyu Kim,   Hee Duck Lee,   Yong Kyun Kim,
Gyu Hueng Han and Hong Gi Kim[1]

Chungnam Agricultural Research & Extention Services,   Taejon 305-314,   Korea
[1]Chungnam National University,   Taejon 305-764,   Korea

The mycelial,   ASI 7004,   were used. The inoculum inoculated in PDA and cultured in the growth chamber at 25℃ 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℃ 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 spawing and 23.5g per 1, 200 ㎖ bottle. Among the size of bottles,   the lowest infaction ratio was 5% at 1, 200 ㎖ bottle and 22 days needed for full mycelial growth. At the growth characteristics by the bottle size,   Youngji at 1600 ㎖ bottle were the best result observed   13~15 days of pinheading from spawing,   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 ㎖ bottle with vertical cultivation. The Youngji produced from in 1600 ㎖ bottle with horizontal cultivation had few number of basidiocarp and high yield, thus it is determined as the most economic method.