

Cultivation of Shiitake on Sawdust - Japanese case

Writer: Kyung Wha Choi (Ivy) / Date :2002-10-01 / hits: 1547

Japan has boosted the world best shiitake production although threatened by inexpensive and quality improving shiitake from China. We visited Shiitake growing villiage near Tottori, Japan. Japanese shiitake growers produce shiitake both on log and sawdust(synthetic log). Dried shiitake is produced 100% on the log while fresh shiitake is grown 50% on the log and 50% on the sawdust block. The village we visited was shiitake growing complex composed of 13 shiitake farms.

Block Supplying Center



This village is operating a block supplying center which providing shiitake blocks after incubating for one month. This center produce sawdust substrate and inoculate shiitake spawn and incubate is for one month at 17~18'C. As the shiitake mycelia grow, it is hardened by mycelia like a block.

Following is the step of shiitake block making.

Block production center



Raw material of synthetic log
: wood chip

+



Raw material of synthetic log
: sawdust



blender of raw materials



Bag filling machine



?

Sterilizer

Inoculation

Inoculation room is not open to anybody except the inoculating person. The control of inoculating room is the key of shiitake cultivation. After inoculation the bags are incubated in this center at 17~18°C for one month.

Block

incubation

Generally, there are two ways: you can either buy ready to fruit blocks from a block supplier and just grow out the mushrooms, or you can do the whole process of spawn and block production yourself. This village goes in between. Shiitake blocks are supplied to the growers after one month incubation under controlled temperature. Then, growers themselves incubate the blocks for 3 months.

However, the temperature of the incubation room is not controlled. They just cover above the roof in summer to prevent temperature increase. For one month right after inoculation, it is required to control the temperature suitable for shiitake mycelial growth. However, you need not control it after one month when shiitake mycelia prevail over other fungi.



Block incubation and spawn run



Spawn run takes about 3 months at the farm with seasonal variation.



As the mycelia grows, the blocks covered white by shiitake mycelia.



The date of purchase is written. - it is about two months old at this farm.

Fruiting

As the spawn run completes, the blocks are uncovered and moved to fruiting room. One block produces about 800g from 5~7 flushes nowadays while it used to produce about 1kg from 7~8 flushes before. The growers regard climatic change and spawn as the cause of shrinkage in production.

"The temperature continues to increase. Moreover, the amount of rainfall has decreased for 3 years. The area used to have plenty of rainfall. To make matters worse, the spawn is not strong as it

was before," said the vice-president of this village.

After cropping the block rests for 2~3 days. During this period blocks are submerged in water for 24 hours. Then the next flush is induced.



First flush



Soaking for 24 hours after harvest



Fruiting induction



Second flush

Harvest and Packing

Shiitake is packed according to its size. One pack is about 1 kg. The pack with bigger size shiitake gets higher price than the pack with small size shiitake although both are 1 kg.



Shiitake mushroom (harvesting)



Packing

→

or



Packing according to the size (one pack is about 1kg)