

Artificial Inoculation on Several Culture Media of *Paecilomyces japonica*

He-Duck Lee, Yong-Gyun Kim, Hong-Gyu Kim,
Gyu-Heung Han, Chang-Sick Mun and Il-Bum Hur Chungnam Provincial RDA,
Taejon 305-313, Korea

Cordyceps, which isolated and purified from cordyceps species, have been reported to have anti-cancer effects. Recently, the researches on cordyceps species are active. we conducted experiments to select appropriate inoculation media for *Paecilomyces japonica*

The results were as follows ;

- In the powder of brown rice and chrysalis, the mycelium and fruitbody growth was most vigorous
- In chrysalis and PDA, the mycelium was well grown, but fruitbody length and weight was intermediate.
- It was interesting to develop *Paecilomyces japonica* on media of the pine tree sawdust and wheat bran
- Mycelium was poor and pinkly conidiospore was formed by media of centipede, maggot and powder of silkworm
- we will try to extract cordyceps from fruitbody of *Paecilomyces japonica*
- Testing mycelium : *Paecilomyces japonica*
- Methods and Materials

Culture media	Uncleaned rice	Uncleaned rice+Pupa ¹⁾ powder	Pine sawdust +wheat bran	Pupa +PDA	Centipede	Maggot	Silkworm powder	Pupa
Rate (%)	100	80+20	70+30	80+20	100	100	100	100
Weight (g/1000ccbottle)	200	200	200	100	100	100	100	100

1) Pupa : Silkworm pupa

- * 1. 배지의 수분을 68%로 조절한 다음 1,000cc크기의 PP내열성 병에 배지를 100g 또는 200g씩 넣고 121℃에서 20분간 살균하여 눈꽃동충하초(*Paecilomyces japonica*)균을 접종
- 2. 접종된 배지는 25℃의 배양실에서 25일 내외 균사배양
- 3. 균배양된 종균은 20~22℃ 생육실에서 20일 동안 생육

Table 1. Growth of *Paecilomyces japonica* on several media

Division	Uncleaned	Uncleaned	Pine sawdust			Silkworm		
	rice	rice+Pupa ¹⁾ powder	+wheat bran	Pupa+PDA	Centipede	Maggot	powder	Pupa
Mycelium growth	+++ ²⁾	+++	++	+++	+	+	+	+++
Fruitbody length(cm)	10.5	11.4	3.6	9.0	0	0	0	5.5
Fruitbody weight(g/1000ccbottle)	31.6	51.6	4.4	26.3	0	0	0	18.5

1) Pupa : Silkworm pupa 2) Degree : Good +++, Medium ++, Poor +

Table 2. Infection rate of *Paecilomyces japonica* use silkworm

Infection rate (%)			Fruitbody		Inoculation density	Inoculation time
Good	Common	Poor	Length (cm)	Weight (g/No)		
56	16	28	3.0~3.5	1.2	10%/ml	Five molting first day



Fig. 1. The states of *Paecilomyces japonica* by growth stage

결과 요약

1. 눈꽃동충하초 대량생산을 위한 인공재배 최적배지는 “현미80g+번데기가루 10g” 처리구에서 자실체 길이 11.4cm, 무게 51.6g, 질노랑색으로 아주 양호했으며, 현미 처리구, 번데기+PDA 처리구에서도 양호했음.
2. 누에를 이용한 눈꽃동충하초 재배에서 종균접종은 누에 5령1일째 실시하였으며, 감염율은 72% 되었음.
3. 누에번데기에서 발생된 눈꽃동충하초는 번데기 1마리당 1.2g(번데기포함), 길이가 3.0~3.5cm 정도 되었으며, 일부는 누에상태에서도 동충하초가 발생하였음.
4. 금후계획으로 배지별 동충하초 자실체의 Cordycepin 성분 검토.