FUJI CHEMICAL INDUSTRY CO., LTD.

Technical Newsletter / August 2008 Issue

Neusilin®

Increased Production of Oyster Mushroom on addition of Neusilin® FH1

Neusilin® is a synthetic form of Magnesium aluminometasilicate which is generally used as pharmaceutical excipients. Due to its high water/oil absorption capacity and unique physico chemical properties. **Neusilin®** can be used in a variety of applications ranging from pharmaceutical, cosmetic and hygiene products. In this newsletter, we describe a novel use of **Neusilin®** where addition of small amounts to the culture media increases mushroom cultivation yields.

Method

1) **Preparation** (Two days before Hypha cultivation)	Mix with saw dust and rice bran/wheat bran in 3 : 1 ratio and add water to retain the moisture at 65% Add **Neusilin®** FH1 and mix to get a homogenous mixture Add 560-570 g of the media in each bottle (850mL) and sterilize at 100°C. 1 , 3 or 6g of **Neusilin®** FH1 was added per bottle.
2) Hypha cultivation (First day)	Inoculate the hypha. Incubate at 18-20°C, Humidity 70-80%RH
3) Germination & growth (After 29 days)	Remove old hypha and expose new hypha. Further growth at 15°C, Humidity 80-90%RH
4) Harvest (After 41 days)	Harvest

Flow diagram of the cultivation process

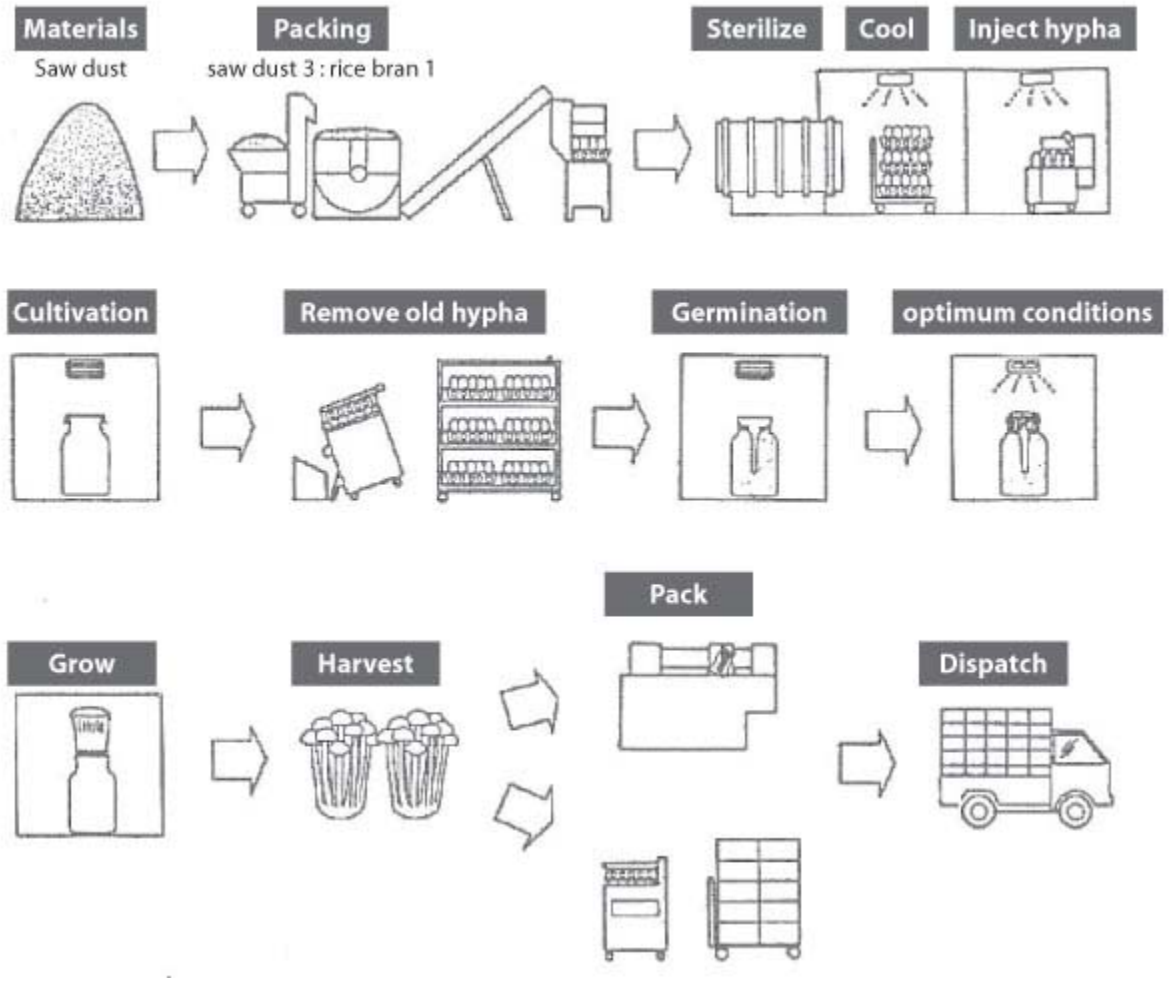

Table 1. Yield of Oyster Mushroom on addition of Neusilin®

Bottle No.	Neusilin® FH1 (g/bottle)		
	0	1	6
1	52	66	100
2	48	64	100
3	44	55	100
4	59	68	92
5	49	72	96
6	42	66	92
7	40	64	104
8	48	54	100
9	44	54	100
10	55	66	103
11	40	66	100

12	44	53	97
13	52	57	84
14	52	-	81
15	40	-	-
16	48	-	-
Average	47.3	61.9	96.4

Addition of 6g of Neusilin® FH1 per 560-570g of culture media/bottle resulted in almost 100% increase in the yield of Oyster mushroom.

Typical properties of Neusilin® grades:

Grade	FH1	FH2	S1	US2	UFL2
pH of 5% Slurry	9.7	9.7	9.4	7.4	7.4
Form	Powder	Powder	Granule	Granule	Powder
Oil Absorbing Capacity	1.3 ml/g	1.5 ml/g	1.3 ml/g	3.2 ml/g	3.2 ml/g
Particle Size Distribution	10-20 mm*	10-20 mm*	70-110mm	60-120mm	2-8 mm*
Residue 330 Mesh sieve	<10%	<10%	-	-	<0.5%
Specific Surface Area	110 m2/g	110 m2/g	110 m2/g	300 m2/g	300 m2/g
Angle of Repose	45°	45°	30°	30°	45°
Bulk Density (Loose)	0.27-0.34	0.31 g/ml	0.33 g/ml	0.15 g/ml	0.08 g/ml
Bulk Density (Tapped)	0.36-0.45	0.43	0.4	0.19	0.13
Loss on Drying	13-20	2.80%	16%	1.4	1.8

Conclusion

Oyster mushroom cultivation yields increased 100% by including **Neusilin®** in the cultivation process. It is likely that **Neusilin®** (FH1) provided buffering capacity in the mushroom growth media that helped maintained optimum pH conditions for significantly higher yields.

To obtain **Neusilin®** sample or to find your local distributor, please contact us. For more technical information, please visit www.fujichemical.co.jp/english/neusilin.html

Meet us at CPhI WW 08

*Please note our booth has been transfered to 42F42.

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