



가 , pH 4 (pH 2 )

( ) , 10

가 ( : 97-25405 ), 30

10 ( 1 ),

가 ( : PCT/JP94/001675, 3-235667, 4-364123, 4-41434, 5-186335, 5-186336).

70

가

가 가

1

2

(seed)

1

2

1

( *Streptococcus* ), ( *Lactococcus* ), ( *Leuconostoc* ), ( *Pediococcus* ), ( *Enterococcus* ), ( *Lactobacillus* ), ( *Bifi-dobacterium* )

가 [Eudragit L30D, Eudragit LS30D, Kollicoat MP(BASF (MC), (HPC), (Guar gum), (Locust bean gum), (Xanthan gum), (aqua coat) ], (pharma coat), (Gellan gum), (Arabic gum)

가

1

1

가

1

가

1 80 %

1

2

1

2



i) 1 Zein-DP 80%  
 가 가 가 35 55  
 1 , ,

[ 1 ]

	1 차 코팅	2 차 코팅
유입공기온도(℃)	70	60
장치내 과립온도(℃)	45	45
유입공기풍량(m³/분)	9	9
배기공기풍량(m³/분)	10	10
Slit 공기유입풍량(m³/분)	7	7
Fluid 공기유입풍량(m³/분)	7	7
코팅액 분무속도(ml/분)	10	12
분사공기풍량(m³/분)	35	35
rotor 회전수(rpm)	300	300
교반기 회전수(rpm)	500	500
lump breaker 회전수(rpm)	2500	1700
spur jet (on-off)	매 20 초	매 20 초

2

1

(A) 1  
 : ( *Lactobacillus acidophilus* ):  
 ( *Lactobacillus bifidus* ):  
 ( *Streptococcus faecalis* )  
 = 1:1:1(w/w/w) 250g  
 : 3g  
 300Mℓ

(B) 2  
 : (A) 253g  
 : HPMCP 50g  
 / (1/1,v/v) 700Mℓ  
 3

1

(A) 1  
 : ( *Lactobacillus acidophilus* ):  
 ( *Lactobacillus bifidus* ):  
 ( *Streptococcus faecalis* )  
 = 1:1:1(w/w/w) 250g  
 : 3g  
 300Mℓ

(B) 2  
 : (A) 253g  
 : 40g

500Mℓ

4

1

(A) 1

:

( *Lactobacillus acidophilus* ):

( *Lactobacillus bifidus* ):

( *Streptococcus faecalis* )

= 1:1:1(w/w/w)

125g

125g

:

3g

300Mℓ

(B) 2

: (A)

253g

: Zein-DP(

가 ) 30g

80%

500Mℓ

5Mℓ

5

1

(A) 1

:

( *Lactobacillus acidophilus* ):

( *Lactobacillus bifidus* ):

( *Streptococcus faecalis* )

= 1:1:1(w/w/w)

125g

125g

:

3g

300Mℓ

(B) 2

: (A)

253g

:

25g

500Mℓ

3g

(pH 2.5 3.0 )

6

1

(A) 1

:

( *Lactobacillus acidophilus* ):

( *Lactobacillus bifidus* ):

( *Streptococcus faecalis* )

= 1:1:1(w/w/w)

125g

-

125g

:

3g

300Mℓ

(B) 2

: (A)

253g

:

940(Carbomer<sup>®</sup> 940) 10g

500Mℓ

7

1

(A) 1

:

( *Lactobacillus acidophilus* ):

( *Lactobacillus bifidus* ):

( *Streptococcus faecalis* ):

= 1:1:1(w/w/w/)

125g

125g

:

3g

300Mℓ  
(B) 2  
: (A) 253g  
: 30g  
( pH 7.2) 500Mℓ  
5Mℓ  
8

1

(A) 1  
:  
( *Lactobacillus acidophilus* ):  
( *Lactobacillus bifidus* ):  
( *Streptococcus faecalis* )  
= 1:1:1(w/w/w) 125g  
125g  
:  
3g

300Mℓ  
(B) 2  
: (A) 253g  
: 20g  
500Mℓ  
5Mℓ

1

1 8

[USP( )

]

-1(10<sup>8</sup> )

10g  
5

100Mℓ  
가

1

50rpm  
( : Elliker broth;

: , 37 , 72 )

100Mℓ

2

100%

1

5  
100

2

3

[ 2]

( )

	인공위액체류(1시간) pH 1.2	인공장액체류(5시간) pH 6.8 (붕해)	생존율(%)	비고
실시예 1	변화없음	1시간이내	65	
실시예 2	변화없음	30분이내	43	
실시예 3	변화없음	3시간이내	55	
실시예 4	변화없음	1시간이내	69	
실시예 5	변화없음	2시간이내	23	
실시예 6	변화없음	1시간이내	31	
실시예 7	변화없음	1시간이내	27	
실시예 8	변화없음	2시간이내	25	
A 사	변화없음	5시간이상	17	젤라틴 코팅
B 사	변화없음	1시간이내	3	

2

가

(57)

1.

(seed)

2.

1 ( *Streptococcus* ) , ( *Lactococcus* ) , ( *Leuco*  
*nostoc* ) , ( *Pediococcus* ) , ( *Enterococcus* ) , ( *Lactobacillus* ) ,  
( *Bifi-dobacterium* ) 1

3.

1 2 , 1 80 %

4.

1 가 , , ,

5.

1 2 가

6.

5 가 가 , , (HPMCP), (HPMC),  
(HPC), (HPMCAS), (CAP), (EC), (CMC), (MC),

7.

6 가 (HPMCP),  
1

8.

6 7 , 1 95 %

9.

5 가 , , , , , , ,

, 1,4- , , , 1

10.

1 5 , 2 , (myvacet),  
, , , , , 1 가

11.

10 , 가 2 1 50 %

12.

1 5 , 2 35 70 .