

17.05.06

[1].

[2].

[1].

[3-6].

«Novozymes» () « » ().

: Lypozyme RM IM, 1,3- ; Lypozyme TL IM, 1,3- Novozym 435, 1,3- Candida Antarctica,

-5,

(-6)

- 10 % - 60⁰

80⁰

[7,8]. .1.

(7)

665.3:577.152.31

• • ; • • ;

• • ; • • ;

• • ; • • ;

– Novozym 435.

().

In article enzymatic transformations triacylglycerols in mono- and diacylglycerols, known edible emulsifying agents, by means of reaction glycerolysis are considered. It is revealed the most effective enzyme is Novozym 435. Are chosen an interrelation of components of reaction (triacylglycerols and glycerin).

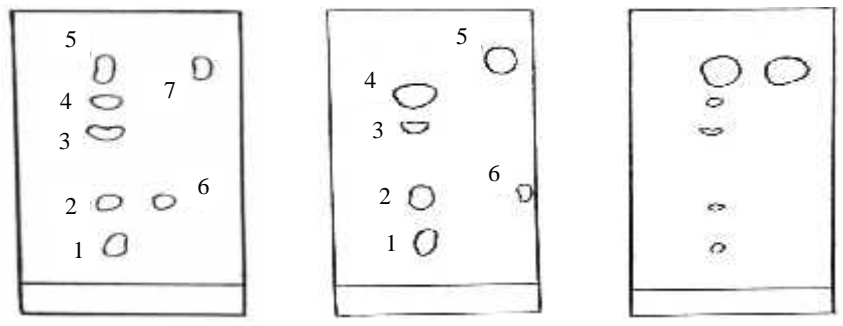
(3,4), (5). : (1,2)

2,4 %
86,4 %
3,6 %
1,6 %
6,0 %

20, 1 / 1,
.2 3.

(5) (1, 2,

3, 4).



.1. :
1-1- ;
2-2- ;
3-1,2- ;
4-1,3- ;
5- ;
6- ();
7- ().

.2. :
1-1- ;
2-2- ;
3-1,2- ;
4-1,3- ;
5- ();
6- ().

.3. :
1-1- ;
2-2- ;
3-1,2- ;
4-1,3- ;
5- ;
6- ().

[9].

(200), (1:9) (200),

1. Novozym 435,
: () - 1:0,5; 1:1,0; 1:2,0; 1:3,0.
67,4 % , 87,2 % , 84,0 %
80,0 % : 1:1.

	, %	%	, %
Lypozyme RM IM	81,0	17,4	1,6
Lypozyme TL IM	63,2	28,8	8,0
Novozym 435	9,3	85,5	5,2

- Novozym 435. ()
: = 1:1.

1. ... 1999. - 452 . 2.
« ». 3. McNeill G.P., Shimizu S. and Yamane T. Solid phase enzymatic glycerolysis of beef tallow resulting in a high yield of monoglyceride // J. Am. Oil. Chem. Soc. - 1990. - Vol. 67. - . 779-783. 4. McNeill GP, Shimizu S and Yamane T. High-yield enzymatic glycerolysis of fats and oils // J. Am. Oil. Chem. Soc. - 1991. - Vol. 68. - . 1-5. 5. Rosu R., Vozaki Y., Iwasaki Y. and Yamane T. Repeated use of immobilized lipase for monoacylglycerol production by solid-phase glycerolysis of olive oil // J. Am. Oil. Chem. Soc. - 1997. - Vol. 74. - . 445-450. 6. Coteron A.,

Martinez M. and Aracil I. Reactions of oil and glycerol over immobilized lipases // J. Am. Oil. Chem. Soc. – 1998. – Vol. 75. – . 657-660. 7. Donald C. Malins. Analysis of complex lipid mixtures by thin-layer chromatography and complimentary methods // JAOCS. – 1960. – Vol. 37, 11. - pp. 576-578. 8.

... I. 1. – : , 1967. – . 585. 9.

... I. 2 – : , 1967. – 1052 .

20.04.06

66.045.2.045.5-032.1

• • , . . ,
 • • , . . , « »
 • • , . . , « »

On the basis of free convection concept a diagram is cited for thermal engineering calculation of transformer oil air-cooling system. This diagram duly considers design, hydrodynamic and physic-chemical process parameters and may be used to develop heat exchangers under free convection conditions.

[1-2]

()

).

Q, ;
 t, ;
 , t, ;

h, ;

F, 2;

/(.);
 / 3;

[3], $\frac{d...}{dt}$, /(3.);

. 1,