

Technological research to create foam therapeutic systems

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Purpose - technological research to create foams therapeutic systems (FTS) in medicine and pharmacy. In our study as samples were prepared solutions of sodium lauryl sulfate, egg protein and liquorice infusion at three concentrations of each of these blowing agents [1, 2].

They were studied: foaming capacity, dispersion foams by microphotography, stability, kinetic stability and the multiplicity of foam. The study of foaming capacity model solutions were performed by whipping on an overhead mixer US-2000. As follows from the results of the study, the maximum area for the foaming of sodium lauryl sulfate is observed at a concentration of 1.5%, egg protein - 6%, the infusion of liquorice - 6%. Next, the basic characteristics were studied by weight of foam: dispersibility, stability, kinetic stability and multiplicity of foams [1,2].

The particulate composition was measured by microphotography in a laboratory microscope Konus Academy (zoom 40). The average size of the gas phase was determined from measurements of the size of 100 vials. The results are shown in Figures 1-12.

According to the results of microscopic research it have been identified the dispersion of foam bubbles of sodium lauryl sulfate, solution of egg protein and the infusion of liquorice, as well as the dynamics of the fluid outflow channels of the Plateau and the "lifetime of foam" (Table. 1)

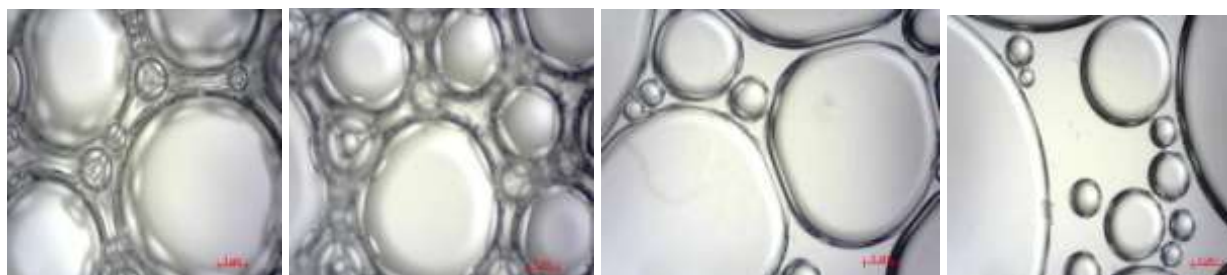


Fig. 1,2,3,4. Photomicrographs of foam sodium lauryl sulfate (study for 210 sec.)

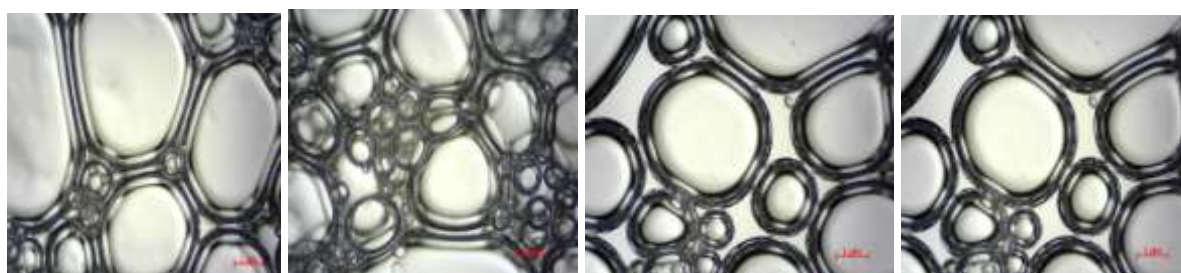


Fig. 5,6,7,8 micrographs of egg protein foam (study for 300 sec.)



Fig. 9,10,11,12 micrographs of foams infusion of liquorice (study for 200 sec.)

The kinetic stability of foam stability evaluation index was defined as the ratio of the volume of foam column after 10 minutes of the formation of the foam to the original volume (%). The results are given in Table 1.

Table 1

№	Surfactants	Dispercibility (d, мм)	Stability («life time of foams», с)	Kinetical stability (%)	Multiplicity of foams
1	Sodium lauryl sulfate 0,5	1,0 ± 0,01	6 ± 0,01	34 ± 0,02	2,0 ± 0,04
2	Sodium lauryl sulfate 1,0	1,5 ± 0,03	10 ± 0,01	60 ± 0,02	1,5 ± 0,02
3	Sodium lauryl sulfate 1,5	1,8 ± 0,04	30 ± 0,01	75 ± 0,02	1,0 ± 0,05
4	egg protein 4,0	1,8 ± 0,02	210 ± 0,04	45 ± 0,01	2,0 ± 0,03
5	egg protein 5,0	2,2 ± 0,01	250 ± 0,03	55 ± 0,05	1,5 ± 0,01
6	egg protein 6,0	2,3 ± 0,03	300 ± 0,05	45 ± 0,06	1,0 ± 0,02
7	Infusion of liquorice 4,0	1,0 ± 0,02	6 ± 0,02	10 ± 0,05	5,0 ± 0,03
8	Infusion of liquorice 5,0	1,5 ± 0,01	10 ± 0,03	15 ± 0,02	3,3 ± 0,02
9	Infusion of liquorice 6,0	1,8 ± 0,04	20 ± 0,02	25 ± 0,01	2,5 ± 0,01

n = 5, P ≤ 0,5

CONCLUSIONS: The study of the defining characteristics formed the basis for: relaxing bath foam - a solution of sodium lauryl sulfate 2%; intragastral cocktail for the treatment in the treatment of gastritis - an egg protein solution 6%; expectorant intragastral cocktail - an infusion of liquorice 6%.

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