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RESEARCH IN THE FIELD OF DEVELOPMENT OF BIOLOGICALLY ACTIVE SUPPLEMENTS BASED ON PLANT EXTRACT

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Annotation: Based on the study of the pharmaco-technological parameters of the dry extract, the composition was scientifically substantiated and a technology was developed for obtaining a biologically active food supplement in the form of capsules. Quality control was carried out and compliance of the qualitative and quantitative indicators of the developed capsules with the requirements of the State Pharmacopoeia of the Republic of Uzbekistan and the State Pharmacopoeia XIV (RF) was ascertained. Using the natural storage method, the shelf life of the dietary supplement is 2 years. The Technical Conditions and Technological Instructions for the production of the dietary supplement “Cholenorm” based on the dry extract of Samarkand immortelle have been approved.

Keywords: immortelle Samarkand, biologically active food supplements, dry extract, capsules, excipients, technological indicators, selection of composition, technology, quality assessment, shelf life.

Scientists at the Tashkent Pharmaceutical Institute have developed a

technology for obtaining a dry extract from Samarkand immortelle flowers, ascertaining its pronounced choleretic activity and the absence of acute toxicity.

The aim of this research was to select the composition and develop technology for a biologically active food supplement in the form of capsules based on the obtained dry extract.

Based on the results of studying the pharmaco-technological parameters of the dry extract of Samarkand immortelle, the need to introduce a complex of excipients and the use of the granulation method was ascertained to achieve the required degree of flowability of the encapsulated mass. Based on the bulk density of the dry extract, the size of gelatin capsules No. 1 was selected.

For a scientifically based approach to the selection of capsule composition, more than 20 compositions were considered. The masses obtained from 7 of them were analyzed according to such indicators as flowability, bulk density, angle of repose, disintegration, fraction of size fractions of 0.2-0.5 mm, residual moisture. Based on the results of the research, the following composition was selected:

Dry extract of Samarkand immortelle – 200 mg, lactose – 52 mg, calcium carbonate – 10 mg, starch – 35 mg, magnesium stearate – 3 mg. 70% ethyl alcohol was used as a wetting agent.

Quality control of the capsules was carried out. According to the results obtained, the analyzed capsules No. 1 have light brown content, which give a positive reaction to flavonoids (color reaction with magnesium powder and r-concentrated HCl). The average weight of the capsules was 0.368 g, with the norm being 0.347-0.403 g, and the deviation did not exceed the regulated 7.5% ($\pm 0.80\%$). The average weight of the encapsulated mass was also within acceptable limits and amounted to 0.294 g $\pm 2\%$. The disintegration time of the capsules was 8 minutes 10 seconds.

For dietary supplements, the quantitative content of biologically active substances is not regulated, but we decided to conduct these studies. The amount of flavonoids in terms of isosalipurposide was 26.67%, with a norm of at least 25%. Thus, the developed food supplement in the form of capsules based on the dry extract

of Samarkand immortelle meets the quality requirements of the State Pharmacopoeia of the Republic of Uzbekistan and the State Pharmacopoeia XIV (RF) [1, 2].

In a separate series of experiments, the shelf life of the developed dietary supplement was ascertained. The study was carried out using the natural storage method [3]. Samples of capsules were packaged in contour-cell packaging in accordance with BA 64-074-91 from polyvinyl chloride film in accordance with SSt 25250-88 (container 1) and contour-cell packaging in accordance with BA 64-074-91 from printed aluminum foil, varnished in accordance with TC48-21- 270-78 (package 2). Re-monitoring of quality indicators was carried out every 3 months of experimental storage. According to the results obtained, the shelf life of the analyzed capsules was ascertained to be 2 years in both types of packaging.

Based on the data obtained, together with “Makro Farm Andijan” LLC, Technical Conditions and Technological Instructions for the production of dietary supplement “Cholenorm” based on dry extract of Samarkand immortelle were developed and approved by the Committee of Sanitary-Epidemiological Welfare and Public Health of the Republic of Uzbekistan.

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