



PHARMACEUTICAL AND TECHNOLOGICAL FEATURES OF THE DEVELOPMENT OF ADHESIVE FILMS WITH ASIAN MINT EXTRACT (*MENTHA ASIATICA* BORISS.)

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Relevance: Modern dentistry requires dosage forms that provide prolonged and localized release of active substances. Adhesive films are convenient to use, reduce systemic side effects, and improve patient compliance. Asian mint extract (*Mentha asiatica* Boriss.) possesses anti-inflammatory, antimicrobial, and analgesic properties, making it a promising component of dental films.

Research objective: To develop the composition and study the pharmaceutical-technological properties of adhesive films with Asian mint extract.

Research methods: Gelatin and collagen were used as the film-forming base, glycerin served as the plasticizer, and liquid Asian mint extract was the active ingredient. The technology included hydration of polymers, introduction of the extract, homogenization of the mass, and film formation by layered drying. Pharmaceutical-technological parameters were evaluated by thickness, mechanical strength, elasticity, adhesive properties, and disintegration time.

Results: A technology was developed for obtaining films, which included swelling of gelatin and collagen in water under controlled temperature, introduction of liquid Asian mint extract, addition of glycerin, homogenization of the mass, casting onto substrates, and drying until stable samples were formed.

The resulting films had a homogeneous structure, transparency, and smooth surface without cracks, bubbles, or other defects. The thickness of the samples ranged between 0.20–0.25 mm, which met the established requirements. Mechanical strength reached 2.5 N/cm², allowing the films to withstand bending and tearing stresses. Elasticity tests showed that the samples did not break and retained their integrity even after repeated folding.

The adhesive properties were pronounced: the films adhered to the mucous membrane within 3–5 seconds and remained fixed for more than 10 minutes, ensuring localized action. The disintegration time was 12–15 minutes, confirming the potential for prolonged release of the active substance.

Organoleptic testing revealed that the films had a pleasant fresh taste and aroma due to the liquid mint extract, which significantly increased their acceptability for dental use. The inclusion of collagen improved texture and enhanced mechanical strength compared to samples without it, while its combination with gelatin ensured flexibility and uniform structure.

Thus, the developed films combined optimal physical and mechanical characteristics (strength, elasticity, adhesion), prolonged release of the active substance, and high organoleptic appeal, making them promising for use in dental practice.

Conclusion: Adhesive films with Asian mint extract possess a balanced composition, optimal physical and mechanical characteristics, pronounced adhesive properties, and prolonged release of



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the active ingredient. The obtained results confirm the potential of this dosage form for implementation in dental practice..