cold weather; minor burns; cuts and scrapes; rashes and insect bites, etc. One of the most versatile, frequently needed and economical finds of natural origin to help relieve these skin irritations is Calendula.

The flowers of the *Calendula officinalis* plant, also known as the Garden marigold, have been used topically for generations to naturally heal skin irritations. As the active ingredient in topical medicinal forms calendula temporarily protects and helps promote healing of burns.

Aim. To justify the performance and perspectives of creating a soft dosage form - gel with calendula for the topical treatment of burns.

Materials and methods. Calendula officinalis was chosen as the object of the study. Methods of analysis of literature data about usage of gelling agents for the creation of soft medicinal forms were used.

Results and discussion. Currently, the use of gels of acrylic polymers in the preparation of dermatological topical drugs, which are widely used in pharmacy preparation in Ukraine, is very relevant and promising.

In this case, petrolatum-containing bases are most often used, which have a number of negative properties: a violation of many functions of the skin (heat, moisture and gas exchange), an allergenic and sensitizing effect. In some cases, petroleum jelly causes irritation, severe eczema and dermatoses. Ointments with petroleum jelly are very poorly removed from the skin surface, stain clothes, etc. The same applies to a certain extent to the hydrophobic components of ointment bases related to petroleum jelly. Delivery of drugs to the skin is an effective and targeted therapy for local skin diseases. Topical gel formulations are a suitable drug delivery system because they are less oily and can be easily removed from the skin. Gels are semisolid drugs, which have an external solvent phase, may be hydrophobic or hydrophilic nature.

Conclusions. In this regard, the development and analysis of gels with the replacement of petroleum jelly in them with gels of lightly cross-linked acrylic polymers is relevant. It will significantly improve the quality and safety of these drugs, reduce their cost and improve working conditions.

DEVELOPMENT OF HOMEOPATHIC MEDICINES OF ROSEMARY

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Introduction. Rosemary (*Rosmarinus officinalis L.*) is an evergreen bushy shrub, which grows along the Mediterranean Sea, and sub-Himalayan areas. In folk medicine, it has been used as an antispasmodic, mild analgesic, to cure intercostal neuralgia, headaches, migraine, insomnia emotional upset, and depression. Rosemary has significant antimicrobial, anti-inflammatory, anti-oxidant, anti-apoptotic, anti-tumorigenic, antinociceptive, and neuroprotective properties. Furthermore, it shows important clinical effects on mood, learning, memory, pain, anxiety, and sleep. In ancient Greece and Rome, rosemary was thought to strengthen memory. Research indicates that inhaling rosemary oil helps prevent the breakdown of acetylcholine, a brain chemical important for thinking, concentration and memory.

The use of homeopathic medicines has spread more and more, and nowadays it is widespread not only in the European region but also in south Asian countries and North and South American countries. With the worldwide increase in the use of homeopathic medicines and the rapid expansion of the global market, the safety and the quality of homeopathic medicines has become a major concern for health authorities, pharmaceutical industries and consumers. The safety of the homeopathic medicines largely depends on their quality. Furthermore, the quality of the homeopathic medicines is influenced both by the quality of the procedure used during their production and the quality of the raw material.

Rosemary mother tincture is a homeopathic medicine that is used to treat weak memory problems in elderly people; it promotes healthy growth of hair and rejuvenates the skin and can be used as a depressant to central nervous system. This alleviates the pain in nerves and keeps body tension at bay.

As is known, the initial homeopathic preparation made from source material that can be further potentized (also called "liquid stock"), sometimes used as homeopathic medicines, is regarded as the most concentrated form of a finished homeopathic medicine. Mother tinctures are obtained classically by maceration or percolation techniques from source materials according to a procedure prescribed by a recognized homeopathic pharmacopoeia. Sometimes a mother tincture corresponds to the first decimal dilution, "1D" or "1X", mostly when dry plant material is used as starting material.

Aim. Development of the homeopathic medicines of rosemary for the treatment of memory problems and pain in nerves.

Materials and methods. The object of study was dried medicinal plant raw materials – rosemary leaves. Mother tincture *Rosmarinus D1* was prepared according to method 4a of the State Pharmacopoeia of Ukraine (SPhU, 1 ed., 3 suppl.). Preparation was carried out by maceration method: one part of dried crushed leaves of rosemary is mix with 10 parts of 90 % ethyl alcohol. Preparation of homeopathic granules *Rosmarinus D3* was carried out by saturation method: for 10.0 g of unsaturated sucrose granules (gomeopathic pillules) add 0.1 g of 60 % ethyl alcohol and 0.1 g of mother tincture *Rosmarinus D1*.

Results and discussion. Dry rosemary leaves (10.0 g) were pre-ground into a coarse powder and poured by 100 ml of 90 % ethyl alcohol, mixed thoroughly and left for 8 days in a tightly closed vessel at room temperature with daily stirring (for the most complete impregnation of raw materials with alcohol) in a dark and cool place. The liquid was strained and pressed by presser; both liquids were mixed, left for 8 days to settle, after which the tincture was filtered.

The obtained rosemary tincture is a greenish-brown liquid with a specific odor and bitter taste; without particulate matters. The content of medicinal substances in rosemary tincture is 1:10. This tincture corresponds to the first decimal dilution D1.

Saturation of sucrose granules was carried out using a glass bottle of capacity in 1.5 or 2 times more than volume of granules on mass. In our investigation the sucrose granules of number 5 were used. 20.0 g of unsaturated sucrose granules weight in a glass bottle add 0.2 g (by drops) of 60 % ethyl alcohol and 0.2 g (by drops) of tincture *Rosmarinus D1*. Close bottle by cover, turned in a parchment paper, immediately begin to shake a bottle during 10 min – potentization method. After shaking granules place on the parchment paper for air-drying. Transfer the granules in the container, close and keep in a cool dark place at the room temperature.

For quality control of prepared granules, the following characteristics were studies: description, amount of the stuck together granules, quantity granules in 1.0 g, losses in mass at the drying, ability to decay, average mass of one granule and filling volume.

Obtained homeopathic medicine *Rosmarinus D3* are globular granules with white colour and sweet taste; amount of the stuck together granules – 0.60 ± 0.02 (pieces); quantity granules in 1.0 g – 45 ± 1 (pieces); losses in mass at the drying – 0.95 ± 0.04 (%); ability to decay – 2.5 ± 0.5 (min); an average mass of one granule – 0.22 ± 0.2 (g); filling volume – 0.75 ± 0.02 (g/cm^3).

Conclusions. As can be seen from obtained results, prepared granules have good organoleptic, physical-chemical, technological quality, which are correspond to the standards according to the SPhU.

THE CORRECT SELECTION OF LUBRICANTS AS ONE OF THE WAYS TO A SUCCESSFUL TABLET COMPOSITION

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Introduction. As known, excipients are required ingredients in most drugs. Despite the small amounts in which lubricants are generally applied, they are the most commonly used substances in tablet formulations.

Aim. It is to characterize the effectiveness of lubricants as auxiliary substances in the development of drugs in tablet form.

Materials and methods. The study was conducted based on a literature sources analysis.

Results and discussion. Nowadays there is a wide range of lubricants produced under various brands: stearic acid, magnesium and calcium stearate, talc, silica, hydrogenated castor oil, poloxamer 407, PEG 4000, PEG, 6000, sodium lauryl sulfate, etc. These excipients, as a rule, are added to the powder (granular) mixture just before pressing process. Their main function in the composition is to ensure the proper ejection force of the tablet from the die of the press tool and thereby facilitate the tabletting process. This function becomes especially important when high pressing forces are used, since significant compaction of the mixture can lead to its adhesion to the surface of the punches. In addition, it is of great importance to ensure accurate dosing of the tablet mass into the die of the tablet machine and good ejection force of the obtained tablets at high speeds of the tabletting process, which, in turn, affects the productivity and economy of the equipment, as well as service life of the press tool. According to the literature sources, some lubricants can additionally affect the technological parameters of the mixture, since, along with the main function (ejection force), they have properties to improve flowability, remove static electricity, etc.

However, despite all the advantages, many lubricants are known for being difficult to work with, since even in small quantities they affect the technological properties of both the mixture and the tablet itself. Thus, a lack of lubricant can lead to adhesion of the material to the punches and die and, accordingly, the destruction of the tablets, which would lead to a halt in the process of the finished product obtaining. On the other hand, over-lubrication can lead to insufficient strength and poor disintegration and dissolution of the tablets.

Conclusions. Therefore, in the development of tablet formulations, an important aspect is a complex of studies on the selection of a suitable lubricant and determination of its rational amount in the composition of solid dosage forms.