



## DEVELOPMENT OF A TECHNOLOGY FOR OBTAINING LIQUID EXTRACT FROM THE PLANT ANTHEMIS TINCTORIA L.

Sadikova N.S.<sup>1</sup>

Tulaganov A.A.<sup>2</sup>

Tashkent Pharmaceutical Institute, Tashkent city, Republic of Uzbekistan

e-mail: nozima974032757@gmail.com

<https://doi.org/10.5281/zenodo.17318994>

**Relevance:** In recent years, the extraction of biologically active substances from medicinal plants and their use in the production of pharmaceuticals has been one of the most pressing areas of research. One such plant is *Anthemis tinctoria* L. (yellow chamomile), which is widely used in folk medicine. The plant contains flavonoids, essential oils, coumarins, organic acids, and vitamins, which have anti-inflammatory, antiseptic, sedative, and antispasmodic effects. The aim of this study is to develop a technology for obtaining a liquid extract from yellow chamomile raw materials. The plant *Anthemis tinctoria* L. (yellow chamomile) is found in Uzbekistan in natural conditions. In folk medicine, the use of plant raw materials causes choleretic, antipyretic, and hemostatic insomnia, irritability, and increased anxiety, including menopause, neurodermatitis, dermatoses, eczema, flatulence, dyspepsia, colitis, anorexia, dysmenorrhea, and pain during menstruation.

**Research objectives:** Obtaining a liquid extract from the raw material of the plant *Anthemis tinctoria* L. (yellow chamomile).

**Methods and techniques:** The maceration method was used in this study. The word maceration comes from the word macerate, meaning to moisten. Crushed raw materials (1-8 mm) are placed on a mesh bottom, the specified amount of separator is added, and the mixture is left at a temperature of 15-20°C for 7 days, unless otherwise specified, with periodic stirring. After the specified time, the extract is drained. The residue is compressed. The raw materials are washed with a small amount of clean separator and pressed again. The extracts are combined and brought to the required volume with clean separator. Purified water and ethyl alcohol with various percentages of concentration, i.e., ethyl alcohol 40, 70, 90, 96%, were used as separators. The maceration method was used in this study. The word maceration comes from the word macerate, meaning to moisten. Crushed raw materials (1-8 mm) are placed on a mesh bottom, the specified amount of separator is added, and the mixture is left at a temperature of 15-20°C for 7 days, unless otherwise specified, with periodic stirring. After the specified time, the extract is drained. The residue is compressed. The raw materials are washed with a small amount of clean separator and pressed again. The extracts are combined and brought to the required volume with clean separator. Purified water and ethyl alcohol with various percentages of concentration, i.e., ethyl alcohol 40, 70, 90, 96%, were used as separators.

**Results:** The aerial parts of the medicinal plant *Anthemis tinctoria* L. (yellow chamomile) were collected and dried at moderate room temperature. The dried plant was ground according to the grinding index specified in the State Pharmacopoeia. To extract biologically active substances from the above-ground part of the crushed medicinal plant, it was crushed to various sizes. In order to separate the biologically active substances contained in plants, the following separators were studied on the basis of experiments. To extract the biologically active substance from the plant *Anthemis tinctoria* L. (yellow chamomile), a series of experiments were conducted using the following separators. Purified water and ethyl alcohol with various percentage concentrations, i.e., 40, 70, 90, and 96% ethyl alcohol, were used as separators. The degree of plant grinding was 0.5, 1, and 2 µm, and the extractant ratio was 1:5 and 1:10. The extractants were obtained using methods described in



the literature. Based on the experiments, a maceration method was used, based on a degree of grinding of 0.5  $\mu\text{m}$  in a ratio of 1:5, using a biologically active substance contained in the yellow chamomile plant, purified water as an extractant, and ethyl alcohol in concentrations of 40, 70, 90, and 96%. As a result of scientific research, extracts with a size of 0.5, 1, and 2  $\mu\text{m}$  were isolated from the aerial part of the yellow chamomile plant. An extract was prepared from the crushed yellow chamomile plant by maceration using ethyl alcohol as a separator in a ratio of 1:5 and at various concentrations. During the maceration process, the medicinal raw material measuring 0.5, 1, and 2  $\mu\text{m}$  was poured into a separator in a ratio of 1:5 and left for 24 hours. After 24 hours, the extract was filtered through 8-layer gauze for separation. The filtered extract was placed in a brown container and left for 7 days. Based on the experiments, the amount of flavonoids isolated during filtration of the finished extract was studied. The studies showed the selection of optimal conditions for obtaining a liquid extract from yellow chamomile flowers. A 70% ethanol solution allowed for maximum dissolution of bioactive substances. The resulting extract was standardized for flavonoid and essential oil content in accordance with pharmacopoeia requirements. The results show that yellow chamomile extract has anti-inflammatory and antibiotic properties.

**Conclusions:** A technology for obtaining a liquid extract from the plant *Anthemis tinctoria* L. has been developed. A 70% ethanol solution was selected as the optimal conditions. The extract obtained has high quality indicators and can be used in pharmaceutical practice in the form of syrup, drops, and tincture. Further in-depth study of the pharmacological properties of the extract and its use in the development of new dosage forms is advisable.