



Fund “Nauka” Project № 25009 Resume – Competition-based Session 2025:

“A study of the effect of extracts and oils from Bulgarian medicinal plants with phytoestrogenic action on the sex hormones of experimental animals”

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The current project is focused on establishing the effectiveness of Bulgarian herbal substances in the treatment of menopausal symptoms. The scientific research aims to prove the phytoestrogenic effect of five Bulgarian medicinal plants (*Alchemilla vulgaris* L., *Oenothera biennis* L., *Humulus lupulus* L., *Vitex agnus-castus* L., and *Tagetes erecta* L.). Experimental animals with induced physiological changes that mimic the natural onset of menopause in women will be used for the project. The menopausal model will be induced using 4-vinylcyclohexene diepoxide (VCD), a molecule that causes progressive depletion of ovarian follicles without affecting peripheral tissues. Plant extracts derived from the five medicinal plants will be administered to the experimental animals. The outcomes will be monitored by tracking changes in blood levels of female sex hormones. Hormonal analysis will be performed using enzyme-linked immunosorbent assay (ELISA). The anticipated positive results will expand the theoretical scientific understanding of the subject and provide new opportunities for the prevention and/ or treatment of this socially significant condition.

The expected results have the potential to be applied in science and practice:

- It is expected that the unpleasant symptoms of menopause associated with the decrease in estrogen levels will be effectively managed;
- The positive effect of plant extracts will provide treatment options as an alternative to hormone therapy with milder adverse drug reactions;
- The social importance associated with the aging of the global population and the increasing number of women in menopause is undeniable.