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Delphinium ajacis l. Evaluation of the effect of vegetable oil on memory and cognitive functions of experimental animals

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Abstract: Most studies have investigated the role of monounsaturated fatty acids and other dietary factors in preventing cognitive decline, but the short-term effect of a low dose of olive oil on cognitive function in the elderly has not yet been studied. Our goal was to determine whether replacing all vegetable oils with less extra virgin olive oil as part of the Mediterranean diet would improve the cognitive functions of older Italians. Researchers from the Institute of Plant Chemistry's alkaloid laboratory synthesized Delphinium ajacis L. seed oil. Every study that has been done has revealed that the body weight is between 180 and 220 g, and every experimental animal was housed in the same vivarium both before and throughout the trial. C. Hall's "open field" method is used to evaluate the motor and search activities of experimental animals. The measurement of the cognitive activity of experimental animals was conducted out using a maze designed by Barnes. Oral doses of 1.0, 5.0, and 10.0 mg/kg of Delphinium ajacis L. vegetable oil were given to experimental animals, while white rats in the control group received distilled water based on the volume of the test material. Therefore, it was discovered that Delphinium ajacis L. vegetable oil considerably boosts experimental animals' motor activity, particularly in modest dosages and quantities-search activity. This enables us to draw conclusions regarding the nature of this chemical's sedative activity, which necessitates extensive research based on this substance.

Vegetable oil from Delphinium ajacis L. enhances experimental animals' capacity to memorize and pick up new situations and abilities fast. This leads to the conclusion that this drug has a beneficial impact on cognitive function, which necessitates extensive research based on this drug.

Keywords: motor activity, C. Hall, labyrinth of Barens, memorize, quickly learn new environments, skills, and search activity.

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Introduction. Since ancient times, many applications of vegetable oils have been known, such as the food, industrial, biofuel, and pharmaceutical industries. Vegetable oils have important pharmacological properties such as antioxidant, anti-inflammatory, antifungal, antipyretic, analgesic, antibacterial and antihyperglycemic, which have gained popularity in the pharmaceutical industry. Since ancient times, many applications of vegetable oils have been known, such as the food, industrial, biofuel, and pharmaceutical industries. Vegetable oils have important pharmacological properties such as antioxidant, anti-inflammatory, antifungal, antipyretic, analgesic, antibacterial and antihyperglycemic, which have gained popularity in the pharmaceutical industry. These oils are very popular among the population in countries such as India for the treatment of many diseases due to their effectiveness, controlled value, low side effects and beneficial effects. Vegetable oils such as sunflower, sweet almond, olive, and coconut, among others, have been successfully used to improve liver function, boost immunity, stimulate hair growth, treat skin and scalp diseases, superficial wounds, sore throat, obesity, cancer, and many other pathological conditions [1,2,3]. It is known that vegetable oils are considered products of high value not only in cosmetology or the food industry, but also in the pharmaceutical industry because of their significant biological activity. Their important pharmacological properties have been used for many years in many countries of the world to treat various diseases that occur among the population. Naturally, vegetable oils are considered products of high value not only in cosmetology or the food industry, but also in the pharmaceutical industry because of their significant biological activity. Their important pharmacological properties have been used for many years in many countries of the world to treat various diseases that occur among the population. In particular, their antioxidant, anti-inflammatory, antifungal, antipyretic, analgesic, antibacterial and hypoglycemic properties include. It is worth noting that although vegetable oils have high therapeutic efficacy, they are less toxic and have a very low chance of side effects. This, in turn, can pave the way for the production of high biological value products based on them, which will allow them to be widely used in medical practice. It should be noted that although vegetable oils have high therapeutic efficacy, they are less toxic and have a very low probability of side effects [4-11]. Today, the number of cognitive impairments among the world's population is growing, which, in turn, causes serious medical, economic and social problems. A noteworthy aspect is that cognitive impairments occur not only due to mental or mental overstrain, but also as a complication of various pathologies, especially neurodegenerative diseases. Today, the number of cognitive impairments among the world's population is growing, which, in turn, causes serious medical, economic and social problems. A noteworthy aspect is that cognitive impairments occur not only due to mental or mental overstrain, but also as a complication of various pathologies, especially neurodegenerative diseases. In this regard, there is a growing demand for low-toxic drugs that exhibit high activity with a natural base that positively affects cognitive activity. Many studies conducted in recent years have investigated the role of monounsaturated fatty acids and other dietary factors in preventing cognitive decline. To this end, scientists at the Institute of Plant Chemistry are conducting extensive research on the isolation of vegetable oils and the study of their biological activity [12-16].

The main purpose of the presented research paper *Delphinium ajacis L.* is to evaluate the effect of vegetable oil on the cognitive functions of experimental animals under research conditions.

The object and methods of research. *Delphinium ajacis L.* seed oil was synthesized by researchers from the alkaloid laboratory of the Institute of Plant Chemistry as the object of research. All conducted studies have shown that the body weight is 180-220 g. and all experimental animals were kept and kept in the same vivarium conditions before and during the experiment. Assessment of the motor and search activity of experimental animals performed by the ”open field" method proposed by C. Hall. The assessment of the cognitive activity of experimental animals was carried out using a maze proposed by Barnes. The results of the study used indicators such as memorization of a special area in the maze, proposed by

Barnes, perception of space and rapid learning of new skills. *Delphinium ajacis L.* vegetable oil was administered orally to experimental animals at doses of 1.0, 5.0 and 10.0 mg/kg, and distilled water was administered to white rats of the control group in accordance with the volume of the test substance.

Research results. In the conducted studies of Delphinium ajacis L., the motor activity of white rats exposed to vegetable oil decreased by 32.5% compared with the control group; to 47.1% and 16.3%, while the search activity decreased by 22.4%; to 21% and 10.3%, respectively. It should be particularly noted here that the “open field” method proposed by Hall is used in preclinical studies to determine mainly the adaptogenic, nootropic, neuroleptic, tranquilizing and sedative activity of biologically active substances. In a study conducted by Delphinium ajacis L. in the studied doses, vegetable oil significantly reduces motor activity, which prompts research into the sedative activity of this substance.

The Barnes maze is known to be an experimental method used to evaluate the memory and cognitive abilities of rats or mice, and this method is used to determine the ability to memorize, spatial memory, and learning. In the conducted studies, different indicators were recorded in each research group of experimental animals in order to find a specially defined area. In particular, Delphinium ajacis L. it was observed that white rats took up to 1.46; 1.17 and 1.18 times less time than the control group, respectively, to find a specific area marked in the studied doses of vegetable oil. This, in turn, is Delphinium ajacis L. a specific area noted in the studied dosavye skills.

Discussion. The short-term impact of a modest dose of olive oil on cognitive performance in the elderly has not yet been examined, but the majority of research has examined the role of monounsaturated fatty acids and other dietary factors in preventing cognitive decline. Our objective was to ascertain whether the Mediterranean diet, which substitutes less extra virgin olive oil for all vegetable oils, would enhance elderly Italians' cognitive abilities. *Delphinium ajacis L.* seed oil was created by researchers in the Institute of Plant Chemistry's alkaloid laboratory. Each experimental animal was kept in the same vivarium before to and during the trial, and every study that has been conducted has shown that the body weight is between 180 and 220 g. Experimental animals' motor and search behaviors are assessed using C. Hall's "open field" method. A maze created by Barnes was used to test the cognitive activity of the experimental animals. The experimental animals received oral doses of 1.0, 5.0, and 10.0 mg/kg of *Delphinium ajacis L.* vegetable oil, while the control group's white rats were given distilled water according to the volume of the test material. Consequently, it was found that *Delphinium ajacis L.* vegetable oil significantly increases the motor activity of experimental animals, especially at low doses and quantities-search activity. This allows us to make inferences about the type of sedative action of this chemical, which calls for a great deal of research based on this material. *Delphinium ajacis L.* vegetable oil improves experimental animals' ability to learn new skills and circumstances quickly. This leads to the conclusion that this medication has a positive effect on cognitive function, which calls for a thorough investigation of this medication.

Conclusions. Thus, *Delphinium ajacis L.* it was found that vegetable oil significantly increases the motor activity of experimental animals, especially in small doses, and in small quantities-search activity. This allows us to conclude about the nature of the sedative activity of this substance, which, in turn, requires large-scale research based on this substance.

Delphinium ajacis L. vegetable oil improves the ability of experimental animals to memorize and quickly learn new environments and skills. It is in this regard that it can be concluded that this substance has a positive effect on cognitive activity, and this, in turn, requires large-scale research based on this substance.

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