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Study of Specific Activities of Black Seed Oil with Vitamin E and Black Seed and Sesame Oil with Vitamin E

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Abstract: Blackthorn is an annual plant with purple or white flowers. It is common in Central Asia, the Caucasus, and the Balkan Peninsula. Black cumin seed oil is used in the beauty industry, pharmacology, and cooking. As a dietary supplement, this product is used as additional help for the body: cumin contains useful substances, vitamins, and minerals that have a beneficial effect on well-being. One of the main components of black cumin oil is thymoquinone. This is a powerful antioxidant that has an anti-inflammatory effect, increases overall tone, and improves performance. It is also a source of fatty acids, phosphorus, potassium, magnesium, and calcium.

Keywords: Fatty acids, phosphorus, potassium, magnesium, and calcium.

Introduction: The oil contains a complex of useful substances, including amino acids with vitamins and phytosterols. Thymoquinone. Biologically active component of cumin. The effectiveness of thymoquinone in the treatment of a number of diseases has been proven. These include Alzheimer's disease, Parkinson's disease, liver dysfunction, periodontal disease, stomatitis, cancer and many others. Thymoquinone fights inflammation, participates in metabolism and relieves pain. Phytosterols. Substances that help remove cholesterol from the body. Among plant products, vegetable oils are record holders in phytosterol content. They play a special role for the skin, as they produce collagen and reduce its loss. Amino acids. More than 85% of black cumin oil is fatty acids. The main one is the polyunsaturated fatty acid omega-6. In addition, the oil contains omega-3 and omega-9 acids. The acid complex regulates cholesterol levels, removing “bad” cholesterol from the blood and increasing “good” cholesterol. Acids support the endocrine system, improve metabolism and strengthen blood vessels. The caloric content of 100 grams of butter is 890 kcal. [1].

One of the ways to find a source of new highly effective and safe medicines is to turn to the centuries-old experience of traditional medicine. Nigella sativa can be considered one of such potential sources of medicines taken from traditional medicine. The history of its use goes back about 2000 years, and the seeds of this plant (Semen Nigellae sativae), also known as black cumin, are used. Today, one commercial product is obtained from nigella seeds - fatty oil (nigella oil) - by

cold pressing, used as a biologically active food supplement. The active substances of nigella oil are a complex of essential acids and terpenoid compounds. These and other valuable pharmacologically active substances contained in nigella seeds give reason to consider this raw material promising for obtaining not only useful food and parapharmaceutical products, but also medicines. In order to identify the prospects for using Nigella sativa in official medicine, it seemed appropriate to first analyze and summarize the available results of the pharmacochemistry of this plant. Black cumin oil can help strengthen the immune system, reduce allergic reactions and normalize weight.

Alleviates the symptoms of rheumatoid arthritis. In 2016, 43 women diagnosed with mild to moderate rheumatoid arthritis were divided into two groups: one took a placebo every day, the other took black cumin oil. After a month, patients receiving the oil showed a reduction in symptoms of the disease, a decrease in the level of inflammation markers in the blood and joint swelling [1-3].

May help with allergic rhinitis. There is still no clear understanding of why some people are susceptible to allergies and others are not. There are opinions that this disease can be inherited. In some cases, patients suffering from allergies are prescribed medications for the symptoms. Analysis of the healing properties of black cumin oil has shown that it helps in the treatment of sinusitis due to its anti-inflammatory and antihistamine properties [2-6].

According to an article published in the American Journal of Otolaryngology, black seed oil reduced nasal congestion, itching, runny nose, and sneezing within two weeks of starting to take it [6,7].

Helps fight diabetes. Scientists have found that the use of black cumin oil can help fight diabetes. "Roman coriander" helps lower blood sugar and cholesterol levels, but clinical trials are needed to confirm this effect.

Alleviates asthma symptoms. Chronic respiratory disease occurs as a result of a person's encounter with an allergen or triggering factors. According to research published in 2017, people with bronchial asthma who took capsules with black cumin oil felt better [4, 8,10].

Helps normalize weight. During the experiment, women were divided into two groups: one group consumed black cumin oil, the other group — a placebo. All subjects followed a low-calorie diet for eight weeks. At the end of the period, the weight, waist circumference, and blood cholesterol levels of women who took the oil decreased more significantly than those who received a placebo. Another study in which overweight women exercised and took black cumin oil showed that after eight weeks of such a regimen, their cholesterol levels decreased.

Black cumin oil is also used as an aid in digestive disorders, headaches, high blood pressure, eczema, and hepatitis C. However, its positive effect on their course has not yet been fully studied and requires additional research [11,12]. Black cumin oil contains quite a lot of unsaturated fatty acids, of which about 60% are omega-6 and only 24% are omega-9, an important lipotropic factor phosphatidylcholine, bioflavonoids, phytosterols, saponins, B vitamins (B1, B2, B3, B6, and B9), D, C, E, and carotenoids (precursors of vitamin A), eight essential amino acids, and the most valuable and biologically active component, thymoquinone, which is responsible for the beneficial properties of the oil [13].

In naturopathic medicine, the oil is traditionally used as a powerful anti-inflammatory, analgesic, hepato- and nephroprotective, antipyretic, antibacterial and immunomodulatory agent. It is worth noting that today there are already data from small RCTs (randomized controlled trials) that confirm the antibacterial, antioxidant (anti-inflammatory), cytoprotective, hypoglycemic and hypolipidemic properties of caraway, as well as its ability to bronchodilate and modulate the immune response. The antitumor effect on animals is also being actively studied, where special properties are due to the active thymoquinone, nigellidine, alpha-hederin included in the composition, which are able to enhance the immune response at the molecular level. The effect of caraway on angiogenesis (the growth of new vessels) is also known, which requires special care in studying due to the fact that it is especially intense in tumor processes.

Black cumin oil has a wide range of pharmacological activity and is therefore widely used in folk medicine in Eastern countries. Today, there are a large number of scientific papers devoted to the study of the pharmacological activity of this plant material [14].

Promotes strengthening and enhancing immunity. Source of vitamin E and microelements.

METHODS

The study used the "Methodological recommendations for assessing the effectiveness of dietary supplements" edited by M.M. Ruzieva, approved by the Ministry of Health on 04.06.2004 [17].

Purpose of the research: Evaluation of the effectiveness of the dietary supplement "Black cumin oil with vitamin E". Evaluation of the effectiveness of the dietary supplement "Black cumin and sesame oil with vitamin E".

RESULTS AND DISCUSSION

The efficiency of the dietary supplement was studied by the method of determining the quantitative characteristics of activity under mixed (anaerobic-aerobic) power loads. For the experiment, a model of swimming white mice with a load to failure was used. The initial indicator of animal performance is the maximum time of swimming with a load, the mass of which is equal to 7% of the animal's body weight at a water temperature in the tank from + 29 ° C to + 30 ° C. The estimated indicator is the time of swimming to failure, recorded during control tests in the dynamics of observation after the introduction of the dietary supplement. For this, 12 mice were weighed and marked. To assess the swimming time, a 20X20X80 cm organic glass tank filled with water was used, the distance from the water surface to the edge of the tank was at least 10 cm.

The animals were divided into 2 groups of 6 animals each, the dietary supplements were administered as follows:

Group 1 - control - water;

Group 2 - experimental - intravenous dietary supplement "Black cumin oil with vitamin E" The animals of the experimental groups were placed in water 15 minutes after the administration of the dietary supplements. The obtained data were processed using the "STATISTICSA" program [16].

The obtained results showed that when the dietary supplement was introduced into the experimental group, the physical activity of the mice increased, extending the time the mice spent swimming with a load by 18% compared to the mice in the control group (Table 2).

Table 2

№ жив.	Вес, г	Доза БАДа в мл/кг	Продолжительность плавания в мин	% эффекта
Контрольная группа				
M ± m	19-21	5	38,9 ± 1,2	100
БАД «МАСЛО черного тмина с витамином Е»				
M ±m	19-21	5	46,2 ± 0,69	118

Note: *- reliability of differences in comparison with the control at P<0.05.

Thus, the conducted studies have shown the effective effect of the biologically active supplement "Black cumin oil with vitamin E" during physical activity.

"Black cumin and sesame oil with vitamin E" Helps strengthen and improve immunity. Source of vitamin E and microelements. Method of administration and dosage: 1 (take orally 30 minutes before meals or 2 hours after meals, 2-3 capsules 2 times a day. The effectiveness of the dietary supplement was studied by determining the quantitative characteristics of activity under mixed (anaerobic - aerobic) power loads. For the experiment, a model of white mice swimming with a load to failure was used. The initial indicator of animal performance is the maximum swimming time with a load, the mass of which is equal to 7% of the animal's body mass at a water temperature in the container from + 29 ° C to + 30 ° C. The estimated indicator is the swimming time to failure, recorded during control tests in the dynamic observation after the introduction of the dietary supplement. For this, 12 mice were weighed and marked. To assess the swimming time, a 20X20X80 cm organic glass container filled with water was used, the distance from the water surface to the edge of the container was not less than 10 cm.

The animals were divided into 2 groups of 6 animals each, the dietary supplements were administered as follows:

1. Group - control - water;

2. Group - experimental - intravenous dietary supplement "Black cumin and sesame oil with vitamin E" at a dose of 5 ml / kg.

The experimental animals of the 1st group were lowered into water 15 minutes after the introduction of dietary supplements. The obtained data were processed using the program "STATISTICS". [16].

2. The results obtained showed that when the dietary supplement was introduced into the experimental group, the physical activity of the mice increased, extending the time the mice spent swimming with a load by 12% compared to the mice in the control group (Table 2).

Таблица 2

№ жив.	Вес, г	Доза БАДа в мл/кг	Продолжительность плавания в мин	% эффекта
Контрольная группа				
M ±m	19-21	5	42,2 ± 0,97	100
БАД «Масло чёрного тмина и кунжут с витамином Е»				
M ±m	19-21	5	47,3 ± 1,0	112

Примечание: *-достоверность различий в сравнении с контролем при P<0,05.

Таким образом, проведенные исслсдования показали эффективное воздействие биологичсски активной добавки «Масло черного тмина и кунжута с витамином Е» при физичсских нагрузках.

CONCLUSION

1. Полученные результаты показали, что при введении БАДа в опытной группе физичсская активность мышей увеличилась, удлинив время плавания мышей с грузом на 18 % по сравнению с мышами контрольной группы. Экспериментальное изучение биологически активной добавки «Масло черного тмина с витамипом Е» показало, что биологическая активная добавка к пище обладает общеукрепляющим действием.

2.Экспериментальное изучение биологически активной добавки «Масло черного тмина и кунжута с витамином Е» показало, что биологическая активная добавка к пище обладает обшеукрепляющим действием.

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