

# RELEVANCE OF DEVELOPMENT EXTEMPORANEOUS VITAMIN HERBAL MIXTURE FOR HYPOVITAMINOSIS USE

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**Introduction.** Meeting our vitamin needs is crucial for both our physical and mental health. A diet rich in essential vitamins can boost our immune system. Besides following basic preventive measures to reduce the risk of infection and spreading diseases like SARS-CoV-2, it's essential to focus on complete nutrition.

A healthy and balanced diet can provide many vitamins. But the most important ones are A, B6, B12, C, D, E and K. A deficiency of these vitamins can lead to various diseases and exhaustion.

Vitamin A plays a crucial role in maintaining healthy vision, promoting immune function and reproduction, and preventing skin problems. It can also lead to brittle hair, nails, tooth and bone disease, as well as poor health and vision problems. Most vitamin A is found in animal liver, as well as fish oil, dairy products, and eggs. Plants contain provitamin A - carotene. Most of all carotene is found in carrots, pumpkin, chard, zucchini, carrots, melon, sweet peppers, and red peppers.

Vitamin D deficiency can cause fatigue, muscle pain, joint pain, weight gain, and digestive issues. It additionally prevents calcium absorption leading to brittle bones and dental problems. To regain lost vitamin D during the colder months, just 10-15 minutes of sunlight exposure daily is sufficient. Oily sea fish are the primary dietary source of vitamin D, with cod liver containing the highest amounts. Mackerel is listed first, followed by other fish such as salmon, herring, sardines, and fish caviar.

Vitamin E is a highly potent natural antioxidant. Objective assessment shows that sunflower oil has the highest vitamin E content. Smaller quantities of this vitamin can be found in almost all unrefined vegetable oils, seeds, and nuts.

Vitamin C is an important vitamin for the immune system. It is also involved in a number of essential processes. Vitamin C is not rare and is found in varying amounts

in almost all vegetables and fruits, as well as in greens. Summer berries and fruits are definitely worthy of attention: strawberries, currants, blueberries, gooseberries.

Of course, this is not the entire list of vitamins necessary for proper nutrition and human health. A balanced diet should also contain the necessary minerals, amino acids and other nutrients.

**Aim.** Substantiation of the extemporaneous vitamin herbal mixture for hypovitaminosis use development.

**Materials and methods.** To achieve the goal, general scientific methods of research were used: analysis, synthesis, comparison, generalization, comparison, systematization for processing literary data.

**Results and discussion.** The assortment of the modern pharmaceutical market is quite full of various vitamin complexes from a large number of manufacturers, standardized, registered and other dietary supplements.

If a person is experiencing symptoms of vitamin deficiency that may indicate an inadequate level of vitamins in the body, he or she should seek immediate medical attention. The utilization of dietary supplements or vitamins without a doctor's professional justification may produce both positive and negative effects in disease treatment or preventative use. However, unmonitored and independent use of such products can have serious adverse effects on the organism.

A large number of experimental studies confirm that synthetic vitamins have a much lower bioavailability in the human body than natural ones. Today, there are many options for preserving plant biologically active substances, such as freezing, freeze-drying, canning, etc. One solution to address vitamin deficiency caused by the inability to consume specific foods is to utilize plant extracts that are high in a specific vitamin. For instance, the Ukrainian pharmaceutical market provides options to address vitamin deficiencies by utilizing plant mixtures and extracts, innovative-gallic preparations, tinctures, and other means.

One of the simplest forms of using medicinal plants is herbal preparations, i.e., the preparation of aqueous extracts, among the advantages of which are ease of manufacture, complex action, and high bioavailability of active pharmaceutical

ingredients.

We propose a vitamin herbal mixture for hypovitaminosis to be used as a tonic and vitamin preparation. The composition of the tonic and vitamin preparation includes the following medicinal plant materials: rose hips, black currant leaves, peppermint leaves and dried blueberries.

According to the literature, such medicinal plant materials as rose hips, blueberries, and mint leaves are concentrators of vital elements necessary for human life. These plants are selectively able to absorb manganese, copper, chromium, vanadium, etc.

The main active ingredients of blackcurrant leaves and rose hips are manganese and ascorbic acid, which is used in pharmacy for manganese deficiency and vitamin deficiency. The active substances of blueberries are tannins and anthocyanins, which are used in case of copper, manganese and chromium deficiency. Mint leaves contain terpenoids and flavonoids and are used as an antispasmodic and choleretic agent.

In this case, the collection is a mixture of several types of dried crushed medicinal raw materials. The degree of grinding of each raw material must comply with the requirements of the regulatory documentation for a particular medicinal product. Given the fact that medicinal herbal preparations are a semi-finished product, i.e. an intermediate dosage form, the final product of which is aqueous extracts prepared at home.

**Conclusions.** Considering the above, we consider it rational and relevant to develop vitamin herbal mixture for hypovitaminosis use containing rosehip fruits, black currant leaves, peppermint leaves and blueberry fruits as APIs can be recommended for further research in order to expand the range of modern medicinal products intended for hypovitaminosis use.