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Annotation- In the CIS countries, dietary supplements are regularly consumed by less than 2% of the population. While in Europe and the United States this figure exceeds 90%. In India and China, supplements are becoming part of the complex therapy of various pathologies. Currently, various dietary supplements based on honey have been developed using traditional ingredients that go well with honey, such as nuts, fruits, berries, and medicinal plants. However, there is currently little research on the production of honey-based functional foods using non-traditional ingredients of animal origin. One of these ingredients is maral breeding products. In Chinese medicine, dietary supplements based on pant and honey are widely used. However, in Kazakhstan, there are no studies on the development of technologies for creating dietary supplements based on combining honey and domestic maral breeding products.

Keywords: *natural honey, royal jelly, antlers, maral breeding products.*

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Development of Domestic Production of Biologically Active Additives (BAA) based on Beekeeping and Maral Breeding Products

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I. INTRODUCTION

During the COVID-19 viral infection pandemic, the nutritional factor is one of the most important components in maintaining public health in conditions of quarantine and self-isolation. Being in self-isolation and quarantine leads to such negative phenomena as physical inactivity, overeating, eating disorders, and the possibility of exacerbations of chronic diseases.

One of the reasons affecting the decrease in immunity in such conditions is the insufficient intake of trace elements - vitamins and minerals, as well as other biologically active compounds. Ongoing research in nutrition and disease is providing more and more evidence for the need for dietary supplements (dietary supplements) to support health and immunity.

BAA is a natural healing mixture, they contain only natural ingredients. Biological additives of plant and animal origin have been used by the population throughout the entire existence of mankind, but now they have a different look.

In the CIS countries, dietary supplements are regularly consumed by less than 2% of the population. While in Europe and the United States this figure

exceeds 90%. In India and China, supplements are becoming part of the complex therapy of various pathologies. According to the WHO, most people in Japan, the United States and other developed countries who take dietary supplements live much longer than the average person.

However, with the increasing global demand for dietary supplements, there is no single global classification of bioactive additives. It's all about defining them as a product. For example, in Kazakhstan, dietary supplements are classified as food additives, in Europe - as means for improving health, and in India and China, where traditional traditional medicine is developed, they are considered medicines.

Doctors subdivide dietary supplements as follows:

- **Nutraceuticals-** combined means, the reception of which is indicated in case of a deficiency of nutrients and the malfunctions of the body provoked by it, as well as to accelerate the evacuation of foreign organic and inorganic compounds;
- **Parapharmaceuticals-** bioactive additives used to increase mental and physical performance, strengthen immunity;
- **Eubiotics-** dietary supplements containing live cultures of bacteria and (or) a nutrient substrate for them, used to restore the intestinal and vaginal microbiocenosis.

Among the many natural ingredients used in the production of dietary supplements, a special place is occupied by beekeeping and maral breeding products.

One of the unique products created by Nature itself is honey and beekeeping products, which have established themselves as remedies that heal many diseases and prolong life and youth. Since ancient times, beekeeping products have been considered one of the most healing and truly unique natural medicines [1].

Bee honey is a natural concentrate of carbohydrates, enzymes, vitamins and minerals that has advantages over other sugars consumed by humans. Honey also contains growth factors that contribute to the normal development of the body. The use of honey strengthens the immune system of the human body, removes toxins from it.

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Currently, various dietary supplements based on honey have been developed using traditional ingredients that go well with honey, such as: nuts, fruits, berries, medicinal plants [2].

However, there is currently little research on the production of honey-based functional foods using non-traditional ingredients of animal origin. One of these ingredients is maral breeding products.

In recent years, the use of maral products for the treatment and prevention of health has gained great popularity in Kazakhstan. For example, pantotherapy - the use of fluid from the horns of young deer for health purposes. Also, blood from freshly cut antlers is used for treatment, which is a highly effective natural elixir.

The peculiarities of the antler deer organism, associated with the specifics of the habitat and physiology, cause unusually high concentrations of biologically active substances in the blood that are not found in other animals. This is the reason for the high adaptogenic properties of maral blood.

In Chinese medicine, dietary supplements based on antler and honey are widely used. Antlers in honey are an ideal natural remedy for healing and strengthening the immune system. However, in Kazakhstan, the technology of creating dietary supplements based on combining honey and domestic maral products has not been studied. Meanwhile, our republic produces natural bee honey and antlers in sufficient volumes [3]. In this regard, the development of a technology for the production of dietary supplements based on honey and maral breeding products of Kazakhstani manufacturers is an urgent task.

II. RESEARCH RESULTS

A team of scientists headed by Academician U. Chomanov conducts research on deep processing of beekeeping products (natural honey, royal jelly) and maral breeding (antlers, blood from cut antlers, antlers), as well as the development of a technology for the production of dietary supplements based on them. The results of preliminary studies show that the use of dietary supplements based on honey and antlers is highly effective in maintaining and maintaining human health, especially in a pandemic.

To achieve this goal, the following were investigated:

- Chemical composition of maral breeding products and their technological properties;
- Physical, chemical and biological properties of beekeeping products;
- The possibility of using maral and beekeeping products for the production of functional food products;
- Temperature regimes for preserving maral and beekeeping products.

Also:- studied various schemes for the processing of products of maral breeding and beekeeping;

-developed projects of technological conditions for processing maral breeding and beekeeping products.

III. FINDINGS

The use of natural ingredients of honey and maral breeding products will make it possible to produce natural products that are powerful immunostimulants and antioxidants. These dietary supplements, the components of which, complementing and enhancing the healing properties of each other, will contribute to the destruction of pathogenic bacteria, microbes and viruses.

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