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PROSPECTS FOR USING SOUTH KAZAKHSTAN PLANTS

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Republic of Kazakhstan practically has no its own pharmaceutical industry. Almost 90% of pharmaceuticals is imported from far and near abroad countries. A vast amount of money in foreign currency is spent in the state scale. At that, quality of imported preparations does not always meet GOSTs and technical conditions. Pharmaceuticals prepared from plant raw materials are especially effective at treatment of chronic diseases, do not cause ghost effects at their usage and are non-toxic in comparison with pharmaceuticals derived synthetically. Probably, therefore, recently in such developed countries as America, Japan and countries of European Union, basic components for production of pharmaceuticals are natural compounds of plant and animal origin. More than 20 thousand kinds of plants grow in Kazakhstan, 6 thousand of them contain biologically active substances. 600 kinds from these 6 thousand can be used as semi-finished products for production of pharmaceuticals, ready pharmaceuticals can be produced from more than 500 kinds. However, available technologies for production of pharmaceuticals have very labor intensive, multistage and expensive processes. Besides, purity of these products leaves much to be desired, therefore, they are not competitive in the world market.

Such pharmaceuticals as codein, papaverine, etc., are produced at Shymkent chemical pharmaceutical factory from plant raw materials by means of extraction, and accompanying alkaloids flow to waste, as some of them toxic, others – inefficient, and some have no physiological activity. Up to the present moment these byproducts are stored in storage facilities unrealized. However, structures of these alkaloids allow produce on their basis known or new biologically active substances by modification of their structure, by introduction of new functional groups -OH, -OCH₃, -OC₂H₅, -NO₂, etc. When producing pharmaceuticals in the usual manner, yield of the target product is not high. Offered by us technology for extraction of valuable biologically active substances raises the yield of the product up to 80% at the high purity. It is offered to use drug plants of South Kazakhstan for production of biologically active additives. However, mentality of Kazakhstan population is such that the people does not like use dietary supplements, thinking

that they are pharmaceuticals. Therefore, we offer principally new solution – take the dietary supplements in the form of herbal teas with different actions: from hypertension, vitaminized, calming, for improvement of digestion, etc.

The growth in the production and consumption of soft drinks in Kazakhstan is mainly due to increase in the share of drinks based on artificial flavors, dyes and sweeteners. Recently, along with increase in output of products, changes have been observed in the direction of their quality, expansion of assortment, increase in the share of production of drinks based on natural juices, sugar, as well as new types of special-purpose drinks, including low-caloric and energy drinks.

It is proposed to use natural supplements using SKO drug plants in this paper. Such composition of cold drinks allows not only to allay thirst, but also to compensate necessary vitamins and other useful substances in a human body.

There are other compounds in the composition of plants that are not desirable in the composition of drinks. Therefore, it is very important to separate and obtain necessary biologically active compounds, which positively influence the useful and organoleptic properties of drinks. We have studied trends and prospects of the market of various soft drinks in Kazakhstan and abroad. The assortment of vitaminized drinks or as they are called “tonics” is increasing every year, since these drinks can relieve fatigue, have a thirst-quenching effect, and also have other medical properties.

It is established that a man is adapted to the consumption of a large number of biologically active substances, the sources of which are representatives of more than 300 plant genera. With plant food, a man receives necessary nutrients, as well as vitamins and minor elements, and not only that. Studies in recent years have identified the need for many minor components of plant food to preserve health and, to a greater extent, reduce the risk of developing a number of chronic diseases. These components are called chemoprotectors or chemopreventers. Among the most intensively studied natural chemopreventive compounds are flavonoids, food indoles and isothiocyanates, dietary fibers, etc. Although the clinical picture of phyto-compounds’ insufficiency is not established, their low concentration in the diet is accompanied by a significant increase in the risk of developing cardiovascular, oncological diseases, diabetes. Some researchers even consider such diseases as manifestations of the state of maladaptation as a result of the constantly low intake of components with food that are absolutely necessary to ensure the protective-adaptive capabilities of a human body. Exceptionally important and the only reliable means of improving the structure of nutrition and achieving the optimal balance of the diet of the population is use in daily

diet of healthy and sick people the biologically active additives to food (dietary supplements). In our work we tried to analyze advantages and disadvantages of biologically active additives, and also reflect state of the dietary supplements in Kazakhstan and the most pressing problems associated with production and sale of this product through the pharmacy network.

For production of dietary supplements, food and drug plants are used that contain a rich complex of biologically active substances such as bioflavonoids, vitamins, polysaccharides, amino acids, minor elements, etc. Modern technologies and equipment allow not only extract the whole complex as much as possible, but also preserve its natural combination. Often this leads to the fact that bioavailability and effectiveness of each of the biologically active substances is greatly enhanced. For example, phenolic compounds are more active in combination with polysaccharides, vitamin C is more effective in combination with flavonoids (rutin).

Concentration of biologically active substances in extracts from plants is such that it allows then to use the obtained food additives in relatively small amounts (doses), sufficient for both prevention and complex therapy of diseases.

Use of a large assortment of drug plants containing various natural substances allows create dietary supplements to food with wide possibilities for correcting various disorders in a human body

We have studied trends and prospects of the market of various soft drinks in Kazakhstan and abroad. The developed recipes for enriched cold drinks using dietary supplements derived from SKO drug plants have high biological activity. The obtained cold drinks will be the first domestic products, obtained with the use of SKO drug plants.