THE USE OF VEGETABLE RAW MATERIALS IN THE PRODUCTION OF MEAT PRODUCTS

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The flora of Kazakhstan is rich in medicinal plants: traditional medicine has more than 700 species, both native and cultivated, as well as about 6 thousand species of higher plants accidentally brought into the country from various groups. It is now known how rich these plants are in biologically active substances. In this regard, the development of functional food products with a long shelf life based on medicinal plants is relevant. The advantage of medicinal plants is their low toxicity and the possibility of long-term use without serious side effects.

Plants of the hawthorn family (*Crataegus L.*, *Rosaceae family*) are widely distributed not only in the territory of the Republic of Kazakhstan, but also abroad. Currently 12 species of plants of the hawthorn family are used to obtain raw materials, of which the scarlet hawthorn is found in much larger quantities. Scarlet hawthorn (*Crataegus sanguinea Pall.*) is a high-yielding, vitamin, medicinal, ornamental plant with large attractive flowers (pic. 1).

Picture 1. Scarlet hawthorn

The chemical composition of hawthorn fruits determines the direction of their use as food and medicinal raw materials.

Medicinal sage (*Salvia officinalis L.*) is a perennial semi-shrub, up to 70 cm tall, belongs to the spongy family (*Lamiaceae Lindl*). The leaves are oblong, cruciferous, cycad-shaped, folded, the underside is pubescent, gray-green, 3.5-8 cm long (pic. 2). When the period of plant life ceases, the color of the leaves changes to silver-gray.

Picture 2. Medicinal sage

Medicinal sage leaves contain 0.8-2.5% of the essential oil, flavanoids, phenolic substances, coumarins (coumarin, esculetin), up to 10.0% tannins, triterpene acids, diterpenic acids, B and P vitamins, ascorbic and nicotinic acids, phytoncides, sterols, lipids (triglycerides of fatty acids), amino acids, enzymes, polysaccharides. The essential oil of cineol has a bactericidal effect, which is associated with the phytoncidal properties of the plant. Tincture and decoction of sage leaves have antiseptic, anti-inflammatory properties.

Cloves (*Syzygium aromaticum, Eugenia aromatica* or *Eugenia caryophyllata*) are aromatic dried bud flowers that are commonly used as a seasoning in all cuisines of the world (pic. 3).

Picture 3. Carnation bud (*Syzygium aromaticum*)

Cloves are one of the main plant sources of phenolic compounds, such as flavonoids, hydroxybenzoic acids, hydroxycinamic acids and hydroxyphenylpropenes.

Common basil (*Ocimum basilicum L.*) is an annual herbaceous plant of the reed family (*Lamiaceae*) with an average height of 51 cm. The leaves are short, ovate oval, less often toothed (picture. 4).

Picture 4. Common basil (*Ocimum basilicum L.*)

Basil contains from 3.6 to 6.2 mg of vitamin C, up to 0.31 mg of vitamins B1, B2, soluble tannins – 1.67 %, tannins – up to 6%, essential oil from 0.02 to 0.32% (maximum up to 1.5%), as well as minerals and glycosides.

Due to its spicy-aromatic properties, Rayhan is widely used as a seasoning in the production of alcoholic beverages in the food industry, for canning fish fillets, in the production of cheese, for flavoring sausages, in the preparation of sandwich butter and stew. Green basil leaves with a delicate taste and aroma are added to meat soups, offal dishes, minced meat, salads, pates, canned food.

There are experimental data revealed by various researchers on the quantitative composition of the main components of medicinal plants, such as basil, thyme, hawthorn, lilac, cloves (table 1).

Table 1

Chemical composition of medicinal plants

Indicators	Mass fraction, %				
	Thyme (thyme thyme)	Raikhan	Zhupargul	Cloves	Hawthorn
Humidity	38,7±2,2	41,0±3,5	43,1±2,9	6,85	76,97-74,97
Protein	5,71±0,2	19,5±0,1	11,7±0,5	5,9	6,65-7,45
Oils	2,44±0,02	9,6±0,01	8,4±0,1	21	1,63-2,63

As can be seen from the data in Table 1, medicinal plants contain all the main components of the chemical composition, so this indicates the importance of their inclusion in the composition of meat products. The listed medicinal plants are rich in minerals, which are biologically active food components.

Analyzing the literature data (table 2), it can be seen that the mineral content in medicinal plants has a different amount of all macro- and microelements. Medicinal plants selected by their mineral composition are valuable food biological raw materials, as they contain organically bound

trace elements, that is, in the most accessible and digestible form, as well as in the aggregate inherent in wildlife as a whole.

Table 2

The content of macro- and microelements in medicinal plants

Medicinal plants	Mass fraction mg, MCG/100 g in the product								
	Macronutrients, mg				Trace elements, McG				
	Ca	Mg	P	K	Fe	Cu	Co	Zn	Mn
Raikhan	197,4	56,0	76,3	–	157,0	29,5	15,7	4,0	27,0
Zhupargul	90,1	61,0	35,0	–	47,0	23,1	41,0	71,0	40,6
Hawthorn	300,0	99,0	–	1311,0	4001,0	29,0	37,0	7,0	4,0
Slightly	4092,0	919,0	–	2291,0	80000,0	1548,0	80,0	9741,0	9919,0
Thyme	63,2	21,2	54,3	–	370,4	32,5	49,2	7,5	11,2
Carnation	644,0	265,0	105,0	1101	8678,0	346,0	–	1091,0	30031,0

Based on the above, it can be concluded that the combination of medicinal and spicy – aromatic plants (hawthorn fruits, sage leaves, thyme, lilac grass, basil, clove bud), the extraction of useful substances from them and the addition of a combined extract to meat products can increase the biological value of the finished meat product.

EXPANDING THE PRODUCTION RANGE OF CANNED MEAT AND VEGETABLES FOR CHILDREN'S FOOD

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Introduction. Nutrition is one of the important factors contributing to the adaptation of the child to the external environment and determining the growth and development of the body. According to the recommendations of pediatricians, a child's diet from 6-7 months should include meat, because for rapid growth and development, the body needs a complete animal protein with all the essential amino acids.

The purpose of the work is to improve the quality indicators of the product, the degree of balance of the finished product and expand the range of canned food for children.

Canned meat for small children not only undergoes strict hygienic control, but also the best raw materials are initially selected for them. Modern technologies make it possible to increase the content of essential