MEAT PRODUCT TECHNOLOGY

Tatulov Yu. V.
All-Russian Meat Research Institute, Talalikhina 26, 109316, Moscow, Russia
Giro T.M., Blinov V.A., Karpacheva L.V.
Saratov state academy of veterinary medicine and biotechnology, Russia

At present there are about 100 million people suffering from diabetes. One of the methods in disease treatment and prophylaxis is diet therapeutics. That is why it is necessary to produce food products of antidiabetic trend.

We have studied experimental problems of diabetes prophylaxis by using plant additives in meat products. These additives are able to raise human organism tolerance to carbohydrates, to reduce glycemia level in pathology and to stabilise glycogen production function in liver, moreover they have anti-inflammation effect.

We have worked out new technology of meat products (emulsified sausages, Paris sausages, pâté, hamburger) where vergetables were used as bioadditioves, for instance cultivated and wild herbs (haricot folds, blackberry leaves, sweetbrier and Jerusalem artichoke fruits, gallega grass) as they are rich in vitamins, glycosides, galegine, inulin, and other elements, which normalize organism metabolism status.

We have used beef liver, spleen, lungs, blood proteins, brains, soy bean proteins, cabbage, vegetable marrow, Jerusalem artichoke as meat product components. All above mentioned ingredients have the well-balanced amino-acid composition, they contain unsaturated fatty acid and rich in vitamins, mineral salts and elements which are necessary in digestion (cellulose, lignine, pectin), organic acids which help in assimilation of calcium, phosphorus and iron combinations. All these elements maintain acid-alkaline balance in body.

We have created recipes of meat products with plant collections of hypoglycemic effect in glucose metabolism normalization.

Sodium chloride, sodium nitrite content was reduced in meat product recipes; sugar was substituted by aspartam for better treatment effect.

We have researched some biochemical parameters for the full quality characteristics and treatment effect prognosis of meat products with plant additives.

The lack of insulin stops proteins synthesis in people suffering from diabetes. Negative nitrogen balance is the result of protein decay and intensive urea formation. That is why it is very important for food products to have large quantity of protein.

We have come to the conclusion that protein content in myosin extract from the stuff with plant additives is 2,5 % higher than in stuff without additives. It is necessary to indicate that this tendency is maintained even after thermal treatment. Protein content in myosine extract from processed product with plant additioves is 7,1 % higher than in products without additives.

Glucose concentration raises by 44,8 % after thermal treatment in products without plant additives . It is possible due to polysaccharide decay, in particular, glycogen in stuff. Glucose concentration was reduced by 12,2 % after thermal treatment of products with plant additives.

Vitamin C (ascorbic acid) content increase is of great interest in connection with plant collection usage. Vitamin C addition into diet prevents avitaminosis, raises capacity for work and resistance to various diseases. Besides, Vitamin C strengthens blood vessels, making them more elastic and durable.

Experiments showed that vitamin C concentration in myosin extract from the stuffs with plant additives of 0.23 +(-) 0.01 mg%, that is two times higher than in stuffs without plant additives. During heat treatment of processed Paris sausages without plant additives Vitamin C concentration reduced by 33,3 % and with plant additives only by 13 %. Introduction of plant collections raises product nutritional value.

Thus, the presented quality and quantity biochemical analysis of myosin extract from meat products with medicinal plant additives made it possible to determine concentration of biologically important organic combinations and to reveal the character and level of thermal treatment influence.

Clinical testing of new products was carried out. Glucose content reduction in blood of people with hyperglycemia is observed.

The worked out products can be recommended for hypercholesterolemia, obesity and diabetes prophylaxis.

NOTES