OPTIMIZATION OF DAILY AND CYCLIC RATION FOOD SYSTEMS FOR THERAPEUTIC ACTION

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In the present article we are formulated three fundamental problems of creating long-term food systems for prophylactic treatment, and approach their solution. Problems that considerate: balance groups of nutrients that connected between each other by scientifically based relationships; maintenance of high biological value protein in some products and dishes that serve as components of diets, and in most food rations; providing scientifically based daily norms in nutrients and energy values.

Based on the totality of single intake rations of various purpose (for the first and second breakfasts, lunches, dinners etc.), which were designed at earlier stages of the study, we developed an improved algorithm for design and optimization of daily diets that maximize providing daily needs of a large number of nutrients and energy values. Daily rations are combinations of single intake rations for various purposes and are the part of cycle diets that may cover a period from two to three weeks. The set of cycle diets lasting form of long-term ration food system for the prevention and treatment of diseases arising against calcium deficiency.

The difference of the proposed algorithm consist in introducing a new objective function for daily rations optimization and average relative underperformance of daily needs in nutrients and energy values. For the objective function adopted minimum sum of relative underperformance daily needs in nutrients and energy value; proposed index of relative underperformance offered daily needs in nutrients and energy value is the ratio of the minimum value of the objective function to the number of parameters, of which there is a shortfall of daily needs of this diet.

Considered stages of research ends, with appropriate design of single ration sets of various types is completed solve of three formulated fundamental problems of creation health-care food systems.

Keywords: food systems, scarce nutrients, daily rations, cyclic rations, optimization.