

DEVELOPMENT OF SPECIAL-PURPOSE BREAKFAST TECHNOLOGY WITH ANTIOXIDANTS

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The relevance of the work. The performance of combat and combat training tasks by military personnel in extreme conditions, which are associated with intense physical exertion and pronounced psycho-emotional stress, leads to negative changes in the functional state of almost all organs and systems of the body, disorders of metabolic processes, and thermal state. The inability to fully adapt to these living conditions is often associated with the formation of a complex of dis adaptation disorders, the manifestation of which covers all levels of integration of the body, including; reduction of work and combat capability, suppression of immune resistance and reactivity, increased anxiety, which has been called "chronic ecological and professional overstrain".

Therefore, the problem of maintaining health in these conditions, maintaining a proper level of work and combat capability, high resistance to adverse environmental and professional factors, preventing the development of emerging dis adaptation conditions, and timely; and complete correction in military personnel is urgent and requires its solution.

The uniqueness of the new technology consists of the complex processing of plant raw materials to obtain dietary supplements containing preventive and therapeutic norms with high antitoxic properties, including due to the content of dietary fiber and protein compounds.

The objects of research are grain crops as raw materials for special-purpose food (army food) based on functional ingredients, and ready-made products based on them.

The purpose of the work is to study and prepare laboratory prototypes of breakfast cereals, technological processing, evaluation of the quality indicators of the developed products; approval of the organization's standard.

Research results. Based on the patent search and the conducted research, technological schemes of bulk and extruded instant breakfasts of special purpose have been selected and worked out:

1. Experimentally, the recommended size of corn grinding for bulk types of special-purpose cereals, passage through sieves No. 3 (23), particle size 0.33 mm was established, and the effect of heat treatment of bulk types of special-purpose breakfasts on antioxidant activity was studied.

2. It is recommended to use water heated to 80°C to preserve the amount of antioxidants and to be fully ready for use.

The technology of instant breakfast has been developed (Figure 1).

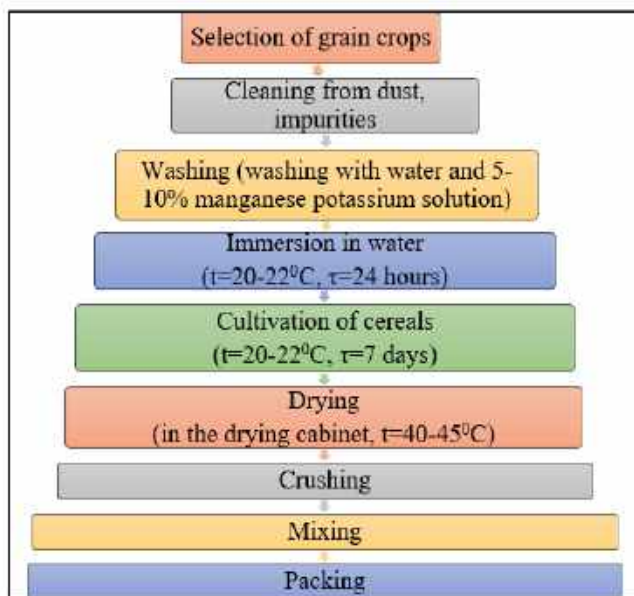


Figure 1. The scheme of the development of fast breakfast technology

Scientific research was carried out within the framework of the initiative topic №0118RKI0596 "Development of technology for special purpose food (army food) based on functional ingredients".

The research was conducted at the Research Institute of Food Safety of the ATU, Almaty of the Republic of Kazakhstan. An organoleptic evaluation was carried out and the qualitative indicators of the prototypes were determined, 2 types of bulk and 4 types of extruded special-purpose breakfasts were selected. The food safety of the prototypes was determined, according to the indicators toxic elements, pesticides, and microbiological contamination met the requirements of TR CU 021/2011. The organization's standard has been approved.