


Chapter 63

Special Legume–Based Food as a Solution to Food and Nutrition Insecurity Problem in the Arctic

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ABSTRACT

Amid the progressing growth in the world's population, changing climate conditions, and increasing demand, food production transforms to ensure food security for the mankind. On the national level, the concept of food security is defined as an economic and agro-industrial capacity of a country, which allows the people consuming environmentally friendly and healthy food products on a continuing basis, at reasonable prices, and above the scientifically based nutrition threshold. In circumpolar territories, the people are especially vulnerable to food and nutrition insecurity due to a number of reasons, including severe climate, underdevelopment of local agricultural production, heavy reliance on imported food, higher nutrition requirements, among others. This chapter discusses the potential of legume-based food products to contribute to the improvement of food and nutrition security in northern communities.

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INTRODUCTION

Over the past few years, the Arctic has become firmly entrenched in the geopolitical interests of not only the Arctic countries, such as Russia, the United States, Canada, Denmark, Norway, and Iceland, but also the states located far from this region, i.e. China, Japan, and the Republic of Korea, and also a number of international organizations that had not previously participated in the Arctic affairs – North Atlantic Treaty Organization (NATO) and the European Union (EU). The countries which have not been actively involved into the Arctic-related issues so far also took an interest in the development, exploration, and governance of the North. The strengthening of geopolitical, economic, military, and political interest to the northern parts of the planet is related to new opportunities offered by the development of transport routes (Northern Sea Route (NSR)), exploration of natural resources, and other factors. Nordic countries, which possess circumpolar territories, are getting increasingly concerned in the security-related issues: not military defense only, but also climate change, environmental protection, biodiversity, and food production.

Food provision is the most important basis for life support and healthy life in the harsh climate conditions of the Arctic. Food production and nutrition security are the crucial issues of national security in all Nordic countries. The study considers historical, archival, and statistical data, academic papers, and reports, as well as national and international legislation and regulations in the sphere of food and nutrition security issues in circumpolar territories.

According to the Food Security Doctrine of the Russian Federation (President of the Russian Federation, 2010), the main criteria of food security are well-balanced consumption rates of food products, economic and factual affordability, and food independence.

The authors propose the development of the specialized products with different functional orientation for mass consumption and a predetermined level of protein content, as well as essential food components, in particular, macro- and microelements and fibers based on the raw materials of animal origin with the addition of plant ingredients.

BACKGROUND

The issue of food security is especially relevant in the Arctic zone of Russia, the biggest and the most sparsely-inhabited circumpolar territory in the North, where settlements are extremely remote from the mainland, almost isolated during long winter, and thus critically dependent on the stable supply of high-nutritious food. The relevancy of the issue is confirmed by the high level of attention paid to the development of food production and ensurance of food security in the High North by the Russian government, research institutions, and non-governmental organizations.

Establishment of food and nutrition security in the Arctic should be considered not only in the view of expenses. It is a composition of many factors, including the contamination of food products by various kinds of xenobiotics, geography, climate change effects, lack of the advanced infrastructure, various economic issues, and other factors (Inuit Circumpolar Council, 2012; Rautio et al., 2015). Numerous studies in the sphere of food supply in the Arctic have all arrived at common conclusion: the principal priority in the establishment of a food supply system in circumpolar territories is the development of a sociological form of food supply system based on the import of the majority of food and agricultural products (Polbitsyn, Drokin, & Zhuravlev, 2012).

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