Manufacture of Specialized Children's Foods from Local Supplies in Sakha Republic

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ABSTRACT

This article reviews data on manufacturing children's foods derived from animal raw materials supplied by local farms of Sakha Republic.

Study of reindeer milk from different farms revealed that it might serve as a substitute for human milk after certain processing. This is mainly due to its high nutritional value and technological features.

This is also true for horse milk. It contents is significantly different from cow milk but close to human milk.

Considering close similarity of fat from young species of Yakut horse to milk fat in contents of middle-chain fatty acids, it may be viewed as an additive for adjustment of fat contents.

Keywords: breast-feeding, horse milk, fat of young species of Yakut horse, children's foods.

During the past 5 years in the Sakha Republic (Yakutia) the number of breastfed children up to 6 months remains almost at the same level and ranged from 48.1% in 2007 to 49.7 % in 2012, but the number of children up to 12 months is almost 2 times lower (26.7% in 2007 and 29.5% in 2012). For comparison, in the Russian Federation in 2010 number of breastfed up to 6 months was 40% of children, up to 12 months - 39.9%.

The main reason to stop breastfeeding at any stage is the reduced lactation – 70% of all causes. The reason for stopping breastfeeding was also hypogalactia in 60,7% of the cases, in the second place is the refusal of the child (17,3%), in the third place is lack of time (5,1%).

Increasing of breastfeeding duration in the Sakha Republic (Yakutia) remains a serious problem. In this regard the establishment of breastfeeding centers, increasing the number of schools for the pregnant that are aimed to improve the hygienic education to support and promote breastfeeding in the Arctic North deserve careful consideration.

Scientific and Practical Centre for the Protection and Support of Breastfeeding under the Health Ministry of the Sakha Republic (Yakutia) has been working to support breastfeeding on the basis of Yakutsk city clinical hospital. That work helped to increase the rates of breastfeeding

in the obstetrics of Yakutsk city clinical hospital: it has increased from 63% in 2006 to 99% in 2013 at discharge.

Currently, the problem of child nutrition, especially infants, is of great importance in terms of health strengthening of the younger generation. There is no secret that in maternity hospitals more mothers refuse from newborns, that's why maternity homes, orphanages have a great need for artificial feeding for babies. Moreover, about one-third of the babies from the first days of life require additional food. [5]

The most balanced food for infants is breast milk, which is considered as the "gold standard" of optimal nutrition, experienced by thousands years evolution of mammals and man. According to the research of YSC of SB RAMS (Yakut Scientific Center of the Siberian branch of the Russian Academy of Medical Sciences) the rate of breastfeeding widely varies from 13% to 95% in the settlements along the Arctic coast of Yakutia.

Still on the territory of Russia there are cases when infants are fed by wjole cow's and goat's milk and non-adapted milk mixtures. [6]

Research shows that the breast milk of indigenous women of the North (Khanty and Chukchi), who are historically leading the traditional nomadic way of life, is more nutritious in biochemical parameters. [1]

Nutritionists, specialist of infant feeding institutions have developed recipes and cooking techniques of various breast milk substitutes based on cows' milk enriched by a dozen of components. But even the best components do not contain biologically active substances, that's why children have eating disorders, allergies, diathesis. [3, 6]

Comparative analysis of chemical composition of breast milk and the milk of farm animals bred in the Sakha Republic (Yakutia) showed that mare's milk in its composition is close to breast milk, and contains on average per lactation: 2,20% of protein, 1,40% of fat, 6,3% of milk sugar; meanwhile breast milk contains 1,25% of protein, 3,5% of fat, 6,5% of milk sugar; reindeer milk contains 11,5% of protein, 24,8% of fat, 3,4% of milk sugar; cow's milk contains 3,4% of protein, 3,8% of fat, 4,7% of milk sugar. Mare's and women's milk have an acidity in the range of 5.5 °T, cow's and deer's – 3 times higher and reaches up to about 17-19 °T, however, the high nutritional and technological properties of reindeer milk after processing might probably be a worthy contender to replace breast milk when feeding children.

At the same time mare's milk can serve as full nutrition for children. Its composition is significantly different from cow's milk and is close to breast milk. Under the action of gastric juice mares' milk is not folded into cheesy clots in the digestive tract of the child, as cow's, unacceptable for the infant [2].

Medical requirements are very strict to the quality of mares' milk. In the Republic of Sakha (Yakutia), especially in recent years, ecological purity of mares' milk is provided when the soil has almost no fertilizers and pesticides.

In the diet of children who are bottle-feeding, the mares' milk can be 50% of the total needs of breast-milk substitutes.

In accordance with the modern concept of a balanced diet biologically high-grade dairy products should be in the diet of children, appropriate to age-related physiological features of child's organism.

The organization of industrial production of baby food is a new trend in the industry. It provides the expansion of the product range, improving the quality of children's dairy products and transferring their production to the modern scientific-industrial base. [3, 6]

The production of dried product on the basis of mare's milk will expand the range of baby products, manufactured in our country, and will facilitate the task of the artificial feeding of children from birth to one year, who are sensitive to cow's milk.

Choice of mare's milk component is not accidental, because it has high content of albumin like the milk of the woman. Albumin is precipitated in the form of small flakes, because of this mare's milk proteins are well absorbed by the stomach of the child and have high biological activity [7, 2].

Albumins contain a lot of sulfur. Mare's milk casein consists of fractions of α-, α -, β-, γ-casein. While α - and β-casein makes up 86.7% of the total casein and B-lactoglobulin and α-lactoglobulin - 77% of whey proteins. Mare's milk, like human milk contains large amounts of immunoglobulins up to 9.5%. Essential amino acids of mare's milk proteins are the most favorable ratio for the infant.

The fat of mare's milk is finely dispersed; fat balls are smaller and better absorbed than the fat globules of cow's milk. The content of linoleic acid in mare's milk and in female milk is much higher than in the fat of cow's milk. This acid belongs to the group of essential acids, as it is not synthesized in the body and activates the immune function of the child's organism.

Compared to cow's milk the average diameter of the fat globules of mare's milk as well as in human milk is smaller. The fat of mare's milk is of white color. It consists of small grains that are in the gel state.

Compared with cow's milk mare's milk like woman's is much richer in C, b vitamins, but poorer in vitamin PP. Adaptation of vitamin composition is carried out by adding vitamins A, D2, E, PP, SC, B1, B2,B3 and B12. The acidity of mare's milk, as the acidity of woman's milk is low - 6° [2].

The use of infrared or spray drying to obtain a solid powder product is required in order to preserve all biological qualities of milk. The following usage of dried reindeer and mare's milk, including milk products are available: development of therapeutic feeding mixtures for gastrointestinal, post-surgical and other patients; additive to infant formula or as the basis for new environmentally healthy baby food. Reindeer milk can serve as the basis for creating not only medicines, but also for the production of prophylactics. We should assume that the biological qualities of reindeer and mare's milk will provide the demand of these products on the world market [4].

One way of approaching composition of substitutes to breast milk is the refusal of using fat cow's milk as the base and replacing it by a composition of beef and pork fat, and also coconut and other vegetable oils. In the preparation of such compositions it is needed to consider the fatty acid structure of the components and also to achieve identity of the melting temperature and other physico-chemical parameters to woman's milk fat.

It is remarkable that composition of garbarini fat and milk fat is close by content of medium chain of fatty acids. Our studies revealed that by the content of medium chain of fatty acids (MCFA) foals' lipids aged of 6 months approach the lipids of milk fat. Their number is significantly higher (7-9 times) than in the foals' fat aged of 30 months. At the same time, the number of MCFA in horse meat fat obtained from 6 months foals, 7-8 times higher than in beef fat (content of capric acid, respectively 0,82 and 0.10%, lauric - 3,03 and 46%). Triglycerides containing, MCFA unlike triglycerides with long chain are quickly hydrolyzed by pancreatic lipase, do not require the presence of bile acids for hydrolysis, are more easily absorbed into the cells of the intestinal mucosa without prior complete hydrolysis, and after suction enter directly into the system of the portal vein, but not in the lymphatic system. All these digestion and absorption features of triglycerides with an average carbon chain length of fat acid make possible their utilization for various disorders of fat intake [5].

Therefore, one way of approaching composition of substitutes to breast milk may be the usage of the garbarini fat as the basis and it will help to reduce the number of children with stunted growth and malnutrition.

Taking into account the significant prevalence of nutritional imbalances among children and teens including insufficiency of essential micronutrients (vitamins and minerals) in the feeding, which is observed in 60-90 % of children and teens, the most important task is to increase the nutritional value of food used in preschool and school nutrition. With regard to milk and dairy products, the main way to increase their nutritional value is the enrichment of essential nutrients (from 20 to 50 % of the daily requirement for the amount of product provided daily set of products): vitamins (C, b vitamins, β-carotene, complex AES), minerals (Fe, Ca, I, F, Se and others), dietary fiber, probiotic and prebiotic components.

The most common and economically justified here is the enrichment of the product with vitamin-mineral premix, containing a complex of vitamins and minerals, usually 8-12 nutrients, deficiency of which is a priority for this region. Another way of increasing the nutritional and biological value of products is a special selection of raw materials and development of science-based formulations of products for preschool and school feeding (food purpose).

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Problems of Alienation and Stigmatization in Psychiatry

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ABSTRACT

The article considers the problem of increasing the number of depressed patients worldwide. The main reason for this phenomenon is the phenomenon of “alienation”. The author lists three main types of alienation. The main problem in Russian psychiatry is the stigma - hanging shameful labels on people seeking help from a psychiatrist or psychotherapist. Social measures to combat depression and anhedonia are considered.

Keywords: suicide, depression, alienation, mass media, stigma in psychiatriy, struggle with depression and anhedonia.

Worldwide there is a growing number of peoples suffering from mental illness. The main reason for this negative process, we consider the phenomenon of "alienation''. Alienation when this takes place in three different planes: 1) the alienation of modern man from his own nature; 2) alienation from people and society; 3) alienation from oneself.

"Alienation from nature" leads to the fact that people begin to depend on technology. "The technologization of the spirit", "technologization of mind" can result in a loss of spirit and mind. The technique separates the person from the ground and stabs his religious and spiritual values and is changing the biological organization of people's life. "Alienation from nature" leads, for example, to that in the world there is a growing number of homosexual couples.

"Alienation from the peoples" leads to loneliness, even sociophobia, the reason of which is the passion of young people playing computer games, Internet communication, at which live communication between people disappears.

"Alienation from oneself" or "self-alienation" is manifested in the loss of meaning of life. The loss of meaning of life in modern humans is confirmed by the data of world statistic on suicides die men are 3-4 times more often than women. Most women have the meaning of life in the presence of their own children. Therefore, the peak of suicides in women occurs at the age of 65, when grown-up children and grandchildren leave her house, and she feels abandoned and useless.

Negative phenomenon "alienation" leads modern people to anhedonia and depression, neurotic disorders.

According to the World health organization, up to 20% of the population in need of specialized mental health care, and in the Russian Federation, this figures reaches 25% [1]. Among mental disorders in the world leads depression – it affects more than 350 million people. According to expert estimates, the number of people who have one or the other light neurotic disorders in our country reaches 9 million. According to various sources, from 18 to 39% of cancer patients and up to 20% with ischemic heart disease suffer depression.

According to the head of the Department of mental and behavioral disorders, Moscow Institute of psychiatry, doctor of medical Sciences A. Avedisova, in Russia up to 50% of somatic and neurological patients suffer depressive disorder [ibid].

Directly with depression related to the problem of suicide, the frequency of which exceeds in Russia some who critical level of 20 suicides per 100 thousand population. In the world the average frequency of suicide is 14 cases on 100 thousand population.

According to the gradation of the World health organization, in Yakutia, the suicide rate is estimated as critical. In our country the number of suicides was (in recalculation per 100 thousand population): 2010 – 40.8 (in Russian Federation – 23.5). 2011 – 39.7 (RF – 21.7), 2012 – 40.1 (RF – 20.2). In1995, Russia was recorded 42 cases of suicides per 100 thousand populations. Dynamics of suicides in the Republic of Sakha (Yakutia) has no tendency to decrease and three times the global figures, two times higher than likely to be national figures.

In the Russian Federation a major problem in the treatment of depression is the stigma of psychiatry in society and the associated social consequences.

The word “stigma” in translation from Latin means “open wound” and comes from the Greek word “stigma”. From the second half of the XIX century, the word began to be used figuratively as “a label”.

In the modern world the concept of “stigma” is used in sociology as a specific feature, when a person is ascribed to some negative traits, the person seeking help from a psychologist or psychiatrist, afraid that society will consider it for “crazy”.

First, the most common stigma associated with conviction of the majority of Russian people that mentally ill people are dangerous. When “the dangerous” no matter what disease they have and how this disease in a particular patient manifests. Therefore they should be avoided, even to isolate from society.

The second common stigma associated with conviction of the people is that mental illness is a chronic disease, and therefore it is impossible to get rid of it.

The third stigma is to persuade people that all mentally ill people are mentally retarded people, fools. Hence all these are common in our society taunts like “idiot”,”imbecile”.

Ultimately, the above stigma prevalent in society stamp, labels prevent people suffering from depression and other neurotic disorders to seek help from a psychiatrist, the psychotherapist, the psychologist. These patients are forced to seek the help of sorcerers and witch doctors that in our society is not objectionable. This "aid" does not help, but only confuses judgments and inferences in the psyche of the patient, leading to irrational thinking.

Psychiatrists must take responsibility for the stigmatization of mental disorders, because nobody else is going to solve a social problem. We must become active advocates for people with mental disorders, to try to improve the quality of life of patients, to monitor cases of discrimination against them in society.

The mass media can be an important source of knowledge in the coverage of mental health issues and become a source for the formation of new social relation and attitudes. TV programs should be alive, vibrant, and dynamic, in order to stay for long in the memory, like they give information in channels “Discovery” and “National Geographic”.

Recently available source of knowledge is the Internet, therefore, psychiatrists should provide easy to understand information about mental disorders, to be weighed the facts and to refute incorrect information.

The most important task of the medical community and the state is the organization of effective and humane care to patients with mental disorders, including depression. Patients need psychological support and social protection, therefore, knowledge about mental health should be disseminated in society.

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