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DEVELOPMENT OF ORGANIC FARMING – THE RUSSIAN EXPERIENCE

*From the healthy ground – to a healthy plant.
From a healthy plant – to a healthy product.
From a healthy product – to the healthy person.*

[Nakaryakova, 2001]

1. Introduction

According to the opinion of many experts, ecological production differs from traditional production not only by an absence of harmful substances, but also by a curative effect. Animals which eat ecological feed are stronger and produce better offspring. The great taste and aroma of foodstuffs made at ecological farms cannot be compared with the taste and aroma of foodstuffs made in the traditional way using fertilizers.

So, ecological (also called biological, organic) farming is a form of agriculture in which promotion of a natural way of life is fundamental. It is not productivity and short-term profit that have paramount value, but protection of soil, water, air, plants, animals and people.

By purchasing ecological bread or an ecological apple, you not only help your health improve, but also you contribute to a highly worthy business. Excluding the use of hazardous substances and mineral fertilizers does not suffice for traditional agriculture to become ecological agriculture. A farmer involved in ecological agriculture cannot fight against weeds, pest or a lack of nutrients by chemical methods. Preventative maintenance becomes his or her indispensable duty. The basis of such preventive maintenance is attention to the soil and all the phenomena connected

with it. All the aims of the farmer are aimed at maintaining and increasing soil fertility, because productivity and quality of production depends purely on the health of the soil [Nakaryakova, 2001].

This paper analyzes the condition of organic farming in the North-West Region of Russia and the form of the institutional framework required for its development.

2. Characteristics of organic farming and its global expansion

The basic characteristic of organic farming lies in non-destructive methods, which are obtained by such preventive measures as crop rotation, soil nutrition and the fair treatment of livestock.

Different plants, pests and diseases influence the soil and production in different ways. Crop rotation not only preserves the quality of soil, but can also improve soil fertility, increase the stock of nutrients, their availability to plants and increase the resistance of plants to pests and diseases.

Enrichment of the soil using nutrients and stimulating its activity can be obtained by using only natural substances, for example, by using manure or spraying vegetable extracts. The constant replenishment of nutrients stimulates plant growth by means of so-called "active soil".

In order to provide plants with important nutrients, such as nitrogen, leguminous (peas, string beans) are cultivated by farmers. Plants with roots which deeply penetrate into the soil are good sources of potassium and phosphorus.

Fair treatment of livestock, according to their physiological needs, is an important component of ecological production. All the premises in which animals live must be naturally lighted. Productivity stimulators cannot be used in ecological farming and only natural methods for dealing with bacteria are permitted. Animal feed is produced on the same farm or comes from other organic farms [Nakaryakova, 2001].

Organic farming is extensive by definition, since it is based on using natural methods to grow plants and breed animals. Everything from fertilizers to feed additives and medicines for animals should be natural, organic, without any chemical substances and, of course, without genetically modified organisms (GMOs). Only natural methods should be used at all stages of agricultural production. This is why eco-production is characterized by low productivity and high price. Nevertheless, today eco-products occupy a unique niche of farming, in which demand continually exceeds supply. In spite of the fact that the share of organic farms

is very small (e.g. 2% in Western and Central Europe, 0.25% in North America, 0.5% in Latin America) as a proportion of all agrarian land, organic farms are the most dynamically developing sphere of agriculture [Tribunskij, 2005].

In the last 5 years the number of organic farms has doubled in the USA and increased by a factor of 12 in Spain.

Today, the area covered by ecological farms in the world is about 23 million ha. Almost a half of this land, 10.5 million ha, is in Australia. However, according to the percentage of agricultural land covered by ecological farms: Liechtenstein is the leader (17% of all farmland in the country) [Tribunskij, 2005].

The number of enterprises wanting to produce ecological products is increasing rapidly.

Governmental programs providing financial support to enterprises involved in organic production have been implemented in Germany, Great Britain, Sweden, Finland and other European countries [Nakaryakova, 2001].

Examining the theoretical basis of organic farming, one should emphasize the following requirements [<http://www.msh-samara>]:

1. maximal closure of the production cycle;
2. fertility of soil maintained by the efforts of farmers;
3. careful (non-destructive) use of natural resources;
4. animal feed is produced on site;
5. the peculiarities of particular species of animals are taken into account;
6. natural regulatory mechanisms;
7. high-quality food-stuffs.

From the point of view of sustainable development, organic farming covers many aspects of the ecological, social and economic dimensions. Firstly, interest in organic farming is rising, since it minimizes the level of harmful effects to the environment. It does not require additional investment for cleaning pollution, which is necessary in the case of traditional farming. Organic farming also preserves a balanced ecosystem. In particular, the soil becomes capable of accepting a lot of moisture. Hence, this protects against flooding. The health of various kinds of animals is protected, which directly influences the quality of production.

Secondly, social interest is connected to people's needs for quality food-stuffs. It is often said that a person is what he or she eats. In most cases, a fast food diet leads to a poor metabolism, obesity, illnesses and other undesirable effects. The human body cannot be deceived by substitutes or aromas, it will react accordingly.

Organic farming creates additional employment for the rural population, which makes it socially attractive. On average, employment in organic farming is 50% higher than in traditional farming.

Thirdly, in spite of the fact that recently in Western Europe social conditions have tended to deteriorate (salaries have not grown and production costs have grown), demand for non-polluting forms of production has grown. In Germany the annual sales of organic products is about 4 billion Euros. The market stimulates the development of any type of eco-management. In western markets the prices for organic products are 20–100% higher than for traditional products, which is a factor attracting producers of such products.

In European countries the prices of organic products differ widely. For example, the surcharge for eco-milk is rather low, but this surcharge is 93.2% on average for meat and 30% for wheat. The surcharge on vegetables is high. Hence, the prices of some of these products are rather attractive to producers.

As a whole, the market for environmentally friendly products is developing dynamically and becoming attractive both to investors and producers of organic products. For example, in 2003 total sales were 23–25 billion USD, in 2005 it was estimated to be 29–31 billion USD and by 2020 it is predicted to be at the level of 250–300 billion USD [<http://www.msh-samara>].

In Russia, in contrast to Western European countries, large agricultural enterprises prevail. The transition to organic farming is evidently more inconvenient for such farms. On the other hand, Russian agriculture never used such great volumes of chemical fertilizers as in Western European countries [Nakaryakova, 2001], which creates good preconditions for the development of organic farming. However, it is likely that only a gradual transition will be made from the standard form of agriculture to ecologically cleaner production and organic modes of agricultural production in Russian agriculture.

3. Preconditions for the transition to ecologically cleaner agriculture and the development of organic farming in the north-west of Russia

Russia possesses a huge supply of agrarian land (1707.5 million ha). However, arable land used for producing cereals, long-term cultivation (gardens and vineyards) and as pastures covers only 209.0 million ha of this area [Bodin et al., 2000].

As noted above, agriculture consists of two basic branches – plant cultivation and animal breeding and different areas specialize in different branches.. Each region of Russia specializes in a set of agricultural products. The differences in these production profiles depend on the local environment, including various characteristics of the area: such as amount of sunlight, heat and moisture, as well as soil quality. Also, zones vary according to the availability of manpower, ease of transportation and storage, the proximity of food processing enterprises and possibilities for export [Bodin et al., 2000].

The environmental conditions in Russia vary radically from the north of the country to the south. Therefore, cultivation of agricultural plants and the types of livestock bred vary greatly according to area.

The basic crops of the Russian Federation are cereals such as rye, wheat, barley, oat, buckwheat, millet, corn and leguminous plants such as peas, string beans, lentils and soya. Wheat occupies 23.9 million ha and compared with other cereal crops occupies the greatest area. However, the most widespread crop is barley, as it is raised in all regions, but mainly only as animal feed. Russia is a world leader in producing barley, oats and rye. Russia has the largest gross production of wheat. According to statistical data, Russia is the fourth largest producer of cereals and leguminous crops (after China, the USA and India). Buckwheat, millet, and rice are very important crops in Russia. Russia is the largest producer of buckwheat in the world with a gross production of about 0.8 million tons. The north-west region is the leading region in the world for cultivating flax [Bodin et al., 2000].

The north-west region of Russia has poorly developed agriculture. Agricultural land occupies less than 25% of the total area. Agricultural land occupies the majority of a district only in the Kaliningrad district (54% of its territory). However, the structure of the soils used for farming varies over the region. In the Kaliningrad region arable land, which is the most intensively used soil, occupies only 48% of the total area of agrarian land. In the neighboring Baltic countries arable land occupies 67–68% of the total area of agrarian land [Bodin et al., 2000].

The region specializes to livestock breeding. Hence, plant cultivation is based on producing animal feed, especially in northern areas. For example, in the Leningrad region cereal crops occupy only 9% of the land used for plant cultivation, whereas animal feed occupies 86%. As a whole, the region specializes in cultivating animal feed, instead of foodstuffs for human consumption. Flax and rape are also of great importance. Potatoes and vegetables are grown in insignificant amounts. Only the Leningrad region specializes in the production of vegetables and potatoes, which are consumed by the population of St. Petersburg [Bodin et al., 2000].

By virtue of its geographical features and historical development over the last ten years, Russia possesses a unique opportunity to become a large scale producer of environmentally friendly products. In the opinion of one of the main supporters of Russia's transition to organic farming, the Chairman of the Committee of the Federation Council for Agrarian-food policy Ivan Starikov, "...our lacks are in fact our opportunities. First of all, we have an abundance of land resources and large farms, inherited from the Soviet system of collective-farming. This enables the application of uniform techniques and specification of cleaner farming practices over large areas. Also, "due to" the decline in agriculture over the last 10 years, Russian arable land has been cleansed from the residues of chemical and mineral fertilizers, which the majority of farmers would envy" [Nakaryakova, 2001].

According to the definitions of the European Commission, the terms "ecological", "biological" and "organic" are similar in their meanings.

Table 1. "Myths" about the impossibility of organic farming in Russia

Myth № 1	All Russian soil is polluted. Organic farming is, in general, impossible in all territories and at best is possible only in small areas. However, this is not true. On the contrary, due to the agricultural crisis, Russia has become the largest stabilizer of the biosphere, since over the last 20 years the use of chemical fertilizers has sharply decreased. This creates good preconditions for a transition to organic farming.
Myth № 2	Everything is "ecologically clean" in Russia. Besides, due to the economical crisis, the use of fertilizers and pesticides ceased and production became environmentally safer.
Myth № 3	It will require great investment. However, organic farming is possible to introduce even in gardens and on allotments. For example, in 2002 about 92.5% of Russian potatoes were grown in gardens or on allotments. Therefore, great investments are not necessary for such types of farming.
Myth № 4	Organic farming is rather expensive and is accepted as being expensive. The prices of organic products are very high. However, this is mainly due to growing demand, especially in large industrial centers and the small levels of output. Potentially, the prices for organic products could be lower than prices for standard products, as manpower costs are low in Russia.
Myth № 5	The yields of organic farming crops are lower than the yields of standard crops. In the case of Russia this statement is really a myth, as only a quarter of the population lives in the countryside and only 12% are involved in farming. Also, agricultural productivity is so low that it cannot be any lower. Production is almost ecological.
Myth № 6	Organic farming returns us to a primitive-communal system. In truth, organic farming does not reject the use of technical equipment at all. Taking into account the condition of technical stock in Russia, organic farming also gives us an alternative to using technical equipment.

Public discussions lead to the conclusion that “ecological farming” is the appropriate name for such forms of agriculture. Vocabulary does affect consciousness. The development of ecological farming is held back by the mass-media distributing “myths” about the impossibility of organic farming in Russia.

So, organic farming is possible practically all over Russia, except those places where ecological accidents have taken place.

Favorable factors for the development of organic farming are [Hodus, 2006]:

- low manpower costs;
- expensive and inaccessible means of production;
- low productivity;
- “ecological compatibility” of the Russian consciousness, *e.g.* chemical substances used in agricultural production are already regarded as something bad;
- soils where the ecosystem is already in equilibrium;
- good market opportunities for selling organic products;
- the possibility of production on allotments;
- absence of genetically modified food stuffs.

4. Institutional frameworks for developing organic farming in Russia

Institutional frameworks for developing organic farming include normative and legislative laws, schemes, systems and procedures for certification, the accepted practices for organic farming, as well as the traditions and customs of the population.

The certification system includes standards (rules, requirements), inspections (checking whether the requirements are satisfied) and certification (after a positive assessment by a third party) of production [Nakar-yakova, 2001].

4.1. Legislative requirements

The European Union has implemented procedures for certification, labels (marks) and inspections of agricultural products and foodstuff. Products from ecological farms can be easily distinguished thanks to labels with the following words: “biolygico” (Portugal), “ecolygico” (Spain), “oekologisk” (Denmark), “oekologisch” (Germany), “organic” (England), “biologique” (France) and “biologico” (Italy) [Council Regulation № 2092/91/EEC].

Russia the term "ecological production" is not legally defined. Therefore, there is a possibility that manufacturers of foodstuffs dishonestly use ecological labeling on packing [Nakaryakova, 2001].

The adoption of the Russian Federation Act №184-FA "On Technical Regulation" on December 27, 2002 and, later on, Decision №32 of the Russian Federation Government "On the registration of and fees for a system of voluntary certification" on January 23, 2004 may well stimulate the development of a system of ecological certification. The act defines the goals, types and implementation of the technical rules introduced. Both the technical and legal rules are of equal value [<http://www.biodynamic.ru>].

Chapter 2 of the Act establishes that "technical rules aim to protect: life, health, property of individuals and corporations, state and municipal property, the environment, the life and health of animals and plants, as well as and preventing actions that mislead purchasers» [The Russian Federation Act, 2002].

The technical rules have established minimal requirements that ensure the safety of products and services with respect to: radiation; biological effects; explosions, both thermal and chemical; etc. International standards and/or national standards can be used in their entirety or adapted as a basis for developing technical rules. Technical rules can be general or special. It is supposed that technical rules on ecological safety are adopted as general rules.

In 2004 the Russian Federation began to develop a project of a technical rule "on organic farming, ecological wildlife management and corresponding labeling of ecological farming." This project is led by the Noncommercial Partnership on the Development of Ecological and Biodynamic agriculture, "AGROSOFIA", which is based in Moscow. 12 months of public discussion on the project is planned, which was due to end in April, 2006. This technical rule was based on EU Directive 2092/91 and if accepted by the State Duma of the Russian Federation, it should solve a number of problems concerning terminology and the normative-legislative basis of regulating eco-production [Kartamisheva, 2005].

To summarize, it is possible to conclude that the process of preparing these technical rules on organic farming and ecological labeling, as well as the development of an appropriate system of certification, is slowly advancing.

4.2. Russian organizations certifying organic products

The certification of products is carried out according to the target market. The purpose of inspection and certification is to guarantee consumers that a product is produced according to the norms of ecological (biodynamic) farming and wildlife management.

Ecological certification has various features. First of all, the production process will be certified, not the end-product. Certification is carried out at all stages from the field to the counter. The independence of inspection bodies means that inspectors should only be interested in the production process: qualitatively assessing the conformity of the procedures to ecological standards [<http://www.msh-samara>].

Russian certifying organizations demand from producers all the necessary information for customers about ingredients, absence of harmful substances, such as GMOs, pesticides, etc., as well as on packaging, which should not contain harmful chemicals and not react with the product. Any appropriate information should be placed on the product label. It is necessary to explain to consumers how to use a product correctly. Such an approach to the certification of eco-production, in our opinion, differs from other approaches accepted elsewhere in the world.

The certification requirements of Russian organizations meet European standards. At present, the most active actors in this field are “ECONIVA” and “AGROSOFIA”. On the basis of its own standards, “ECONIVA” has created its own System for the voluntary certification (SVC) of organic farming. The “Eco-control” company has already developed the “BIO” SVC on the basis of the eco-standards of “AGROSOFIA”, the discussions about the new act “on organic farming, ecological wildlife management and corresponding labeling of ecological farming”, as well as EU Directive 2092/91, NOP (the USA), JAS (Japan) and Demeter (Germany) [Kartamishcheva, 2005].

The “ECONIVA” system of certification, which carries out the control of ecological production in Russia, operates within the framework of the Russian Federation Act “On Technical Regulation” as a form of voluntary certification.

Qualified inspectors from “ECONIVA”, which has internationally recognized certificates, will certify agricultural enterprises according to the Standards of “ECONIVA”, and production intended for the European market according European Union law [Nakaryakova, 2001].

The non-commercial Partnership “AGROSOFIA” operates both in the certification of organic products and strengthening the legislative base of such certification. Specialists from “AGROSOFIA” have translated world standards on ecological certification into Russian, which has made them more accessible to Russian producers. EU standards have been accepted and adapted to conditions in Russia. Also, a strategy for the creation of technical rules has been developed. Firstly, this strategy is based on the concept of sustainable development. Secondly, this strategy should be harmonized with European requirements and focused on the target markets. The next important element of this strategy is the protection of producers, as all produc-

ers should pass strict controls. One more component of this strategy is the generalization of Russian experience in the development of organic farming and wildlife management, taking into account the specific conditions present in Russia. Also this strategy aims to unite the efforts of state organizations, producers, food processing companies, sellers, research establishments and public organizations to define an appropriate legislative base.

When the public discussion of these technical rules has finished, many agricultural enterprises will express their readiness to transform to organic farming. Thus, it is reasonable to expect the further promotion of the Act in the State Duma and its subsequent acceptance [<http://www.msh-samara>].

The "BIO" system of voluntary certification of organic and biodynamic farming was registered by The Federal Agency of Technical Regulation and Metrology of the Russian Federation (GOSSTANDART). The developer of this certification system, the non-commercial partnership "Eco-Control", is a certification body in the field of organic and biodynamic farming and wildlife management.

The "St. Petersburg quality brand" system is registered in the Uniform Register of Systems of Voluntary Certification № ROSS RU.V 255.04PN00.

These systems of certification are designed to cover practically all goods, work and services produced, carried out and rendered by Russian and foreign organizations of various organizational-legal forms and by individual businessmen on the local St. Petersburg market.








In contrast to the voluntary certification system of GOST R and other voluntary systems used in Russia, the "St. Petersburg quality brand" system of voluntary certification (Table 3) provides acknowledgment of conformity to vital and interesting parameters, from a consumer's point of view, such as [<http://www.quality.spb.ru>]:

1. Requirements for the ecological safety of products, work and services with regard to human life and health.
2. Requirements for informing consumers about the properties of products.
3. Requirements regarding the contents of genetically modified substances in food stuffs.
4. Requirements for the conformity of vocational training of personnel to national standards.

The most common Russian eco-labels are presented in Table 3.

The organic label "Pure Dew" developed by NP "AGROSOFIA" is represented by a circle with the image of a trefoil and drops of dew with a green background. This emblem reflects the integrity and stability of nature, society and the economy. The trefoil represents three spheres which are crucial with regard to organic production: soil monitoring,

Table 3. Common Russian eco-labels

Label	Name of the label	Organization
	"Pure Dew"	NP "AGROSOFIA"
	SVC "BIO"	The "Eco-Control" company in association with NP "AGROSOFIA"
	"Ecological product"	NP "Moscow ecological products"
	"Leaf of Life"	NP "St. Petersburg Ecologi- cal Union"
	"Eco-TEST-Plus"	ANO "TEST-Saint-Peters- burg"
	"Healthy Nutrition. Lenin- grad region"	The State department of employment for the Lenin- grad region
	"St. Petersburg Quality Brand"	The "PETEKS" Quality and control center

Source: Authors' own elaboration

certification of the production process and certification of the end-product according to the requirements of the GOSSTANDART certificate [<http://www.biodynamic.ru>].

4.3. Russian organic farms

Thanks to the certification and organization of the “organic” market in Russia, it is possible to stimulate farmers to transfer to organic methods of farming. In order to realize a program for the certification and marketing of organic production, the “ECONIVA” certification center was created. It has already opened regional branches, as well as the Association of Russian organic farms consisting of the regions of Kaluga, Tula, Kursk, Moscow and Pskov. Farms are engaged in the organic production of oat and buckwheat for children’s and dietary consumption, medicinal herbs, sea-buckthorn berries and hemp (fibre). “ECONIVA” cooperates with the following organic farming organizations in Europe and the USA: NATURLAND, EKOSEM, APOLLO (AHU) MICHAEL FIELDS AGRICULTURAL INSTITUTE, FARM VERIFIED ORGANIC (CIF), ECOLAND Poland. Scientific research institutes from the non-chernozem (non-black soil) zone of Russia are engaged in problems related to the creation of alternative systems of agriculture. Velikolukckaja State Agricultural Academy and VNII “Agroecoinform” are together developing a program to create alternative systems of farming in the Nevelskij district of the Pskov region within the framework of the “Nevel-21” project for a transition to sustainable development at local level. Important points for the realization of a similar program are the interest of farms and a creative approach of experts and managers towards the development of new technologies of organic production. There is a wealth of experience in organic farming in other countries. The program was implemented in 1995 under the initiative of an agricultural department with the support of farmers and regional committees for soil resources [Bannova et al., 2001].

Organic farms have been created for breeding poultry and cultivating fruit, vegetables and flowers. The Open Society “Agrofirm” founded the Sejmovskaja integrated poultry farm with 100 thousand hens in the Nizhniy Novgorod area in 1964. Presently, it is one of the largest agricultural enterprises (producing more than 310 million eggs annually). In order to ensure the production of high-quality products and optimize costs, the management of the poultry-farm chose a strategy based on a closed production cycle, including the production of grain, eggs, meat and milk, together with the subsequent processing and sales of these products. Antibiotics, bio-stimulators and preservatives are completely excluded from the process of poultry feeding [<http://www.seyma.ru>].

5. Conclusions

At present, the development of the production of organic food in Russia is constrained by a number of factors. First of all, the absence of any legislative definition of the concept of “organic” foodstuffs in the Russian Federation. Besides this, in the Russian Federation no normative-legal base has been created to regulate the development of the production of organic food and relations in the field of organic production and wildlife management. There is no system of governmental support for organic farming and the development of wildlife management.

Organic production is one of the promising directions for modernizing agriculture and the consumer market in Russia. Consumer demand for organic production is growing and many food producers are ready to invest in organic production. Also, Russia’s agricultural sector and natural resources possess great potential for organic production, both for internal consumption and foreign markets.

The further development of organic farming in Russia demands acceptance of the following measures:

- Development of a normative-legislative base regulating the properties of foodstuffs, including the definition of a concept of “an organic product” and its legislative control.

- Creation of a legislative base regulating the development of the market for organic products according to consumer interest, in order to attract all types of stakeholders, on the basis of international and Russian experience. Such steps have already been made in this direction, with the close cooperation of state and public organizations.

- Creation of a technical committee to create a strategy for developing the production of organic goods, extending the normative-legislative base regulating relations in the sphere of organic production and control over its activities.

- Development of national organic production standards on the basis of the IFOAM recommendations and the Alimentarius Code.

- Development of a specification-legislative base enabling full control over the labeling of organic products.

- Development of a national program to support organic farming, wildlife management, and the production of organic goods in the Russian Federation, taking into account successful cases in this field from other countries [<http://www.svsc.ru>].

The adoption of the Russian Federation Act “On Technical Regulation” creates the preconditions required for the further development of a normative-legislative base for organic farming. However, the process of preparing technical rules on organic farming and ecological labeling,

as well as an appropriate system of certification is advancing rather slowly.

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