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Organic foodstuffs as a part of healthy nutrition

Żywność ekologiczna jako element zdrowego sposobu odżywiania

INTRODUCTION

According to the American Centre of Diseases Control (Pasowicz 1996) the life style is the most important factor affecting human health. A notion "life style" comprises psychological status, material circumstances of life, environmental conditions, physical activity, and last but not least the nutritional pattern. The impact of the genetic background and medical service is not so important. It means that we can have a real influence on our health, because we can change our life style, in that our nutritional habits, into more proper.

The pattern of healthy nutrition is determined by two major factors: a proper diet and high quality of foodstuffs.

The proper diet means that we should construct our everyday menu according to current recommendations elaborated by professional nutritionists. The most important recommendation sounds: "health safety in diversity of consumed foodstuffs". We should eat all kinds of the foodstuffs in order to provide our organisms with all necessary substances and to avoid too many poisoning substances.

The second major factor of healthy nutrition is high quality of the foodstuffs. Their nutritional value is measured by the optimal content of desirable compounds and minimum content of the harmful substances. There are several factors affecting the quality of raw food products. Among them two factors are most important: the environmental conditions and the method of farming. It is obvious that the crops grown in contaminated environment can contain harmful substances and - consequently - can't be healthy. Therefore it is so important to keep uncontaminated soil, air and water in the agricultural areas.

The method of farming has also an important influence on the crops' quality. At present we have two main systems of agricultural production: conventional and organic. Consump-

tion of the organic foods is often combined with a special ecological lifestyle; anthroposophic system of nutrition is a good example of it.

ANTHROPOSOPHIC SYSTEM OF NUTRITION AS A GOOD EXAMPLE OF ECOLOGICAL LIFESTYLE

Anthroposophic diet belongs to the alternative ways of alimentation, basing on the philosophical background. A base of it is anthroposophy created by Rudolf Steiner, a holistic philosophical system in which spiritual aspect of all creatures and phenomenon is very important. Steiner created a.o. a system of biodynamic agriculture belonging to the organic agricultural systems and anthroposophic education, medicine and nutrition (Childs 1995). The most important features of the anthroposophic nutrition manner are the following (Kokornaczyk 2000):

Food quality is considered as very important. The products produced in bio-dynamic farms are preferred. Unprocessed or slightly processed products are recommended. Seasonal and regional products are applied in diet. A lot of coarse-grained different cereals are consumed. Level of vegetables and fruits consumption is high, and raw plant products are eaten everyday. Potatoes consumption is avoided. Meat consumption is limited or fully excluded. Alcohol consumption is forbidden. Alternative sweeteners (honey, brown sugar) are used instead of white sugar. Consuming of the mineral compounds and vitamins in pills should be avoided. Nutrition should be shaped according to individual features and needs of a person; especially important is a kind of human temperament. The meaning of rhythms in nature is taken into account; permanent everyday time of meals should be kept. Nutritional culture and nice atmosphere at the table are important. Nutrition is closely connected with a development of human consciousness.

Anthroposophic diet was rarely evaluated by the nutritionists except Leizmann et al. (1999). According to those authors it is a kind of lacto-ovo-vegetarian diet and has a lot of positive health effects, diminishing a. o. the risk of cardiovascular system disorders, cancer diseases, allergy and osteoporosis. Potential health hazard is connected with the low consumption of potatoes, which are important common source of starch, potassium and vitamin C, and very limited meat consumption by children, pregnant and breast-feeding women. These groups of consumers need more iodine, iron and vitamin B12, which are mostly available from meat products (Leizmann et al. 1999).

There are very few research studies on the potential impact of the organic foodstuffs on human health. The most interesting is a study of Alm et al. (1999). The authors found that the children from Steiner schools in Sweden had lower prevalence of atopy than children from the neighbouring ordinary schools. There was an inverse relation between the number of characteristic features of an anthroposophic lifestyle and risk of atopy. Alm et al. (1999) conclude that lifestyle factors associated with anthroposophy may lessen the risk of atopy in childhood. There are many factors probably having the impact on children atopy in the anthroposophic families: rare usage of antibiotics and antipyretics, few vaccinations, organic / biodynamic diet, a lot of naturally fermented vegetables in diet causing the large amount of lactobacilli in their intestinal microflora (Alm et al. 1999). The authors don't consider other factors connected with the anthroposophic lifestyle which can be also important, like more philosophical approach to life and better family atmosphere at home and during the meals.

THE IMPACT OF CONVENTIONAL FARMING ON CROPS QUALITY

Most of agricultural products are still produced and processed with the conventional methods. It means that a lot of chemicals are used during the production system: synthetic mineral fertilisers, pesticides, antibiotics, hormones etc.

Therefore unwholesome compounds can be dangerous in our food (Rejmer 1997). For example cadmium can be introduced into the food chain from the synthetic phosphoric fertilisers. Nitrates, nitrites, nitrosamines, pesticides, seed dressings, plant growth stimulators, antibiotics and hormones can be found in food products because of the conventional methods in agriculture, animal breeding and food processing.

It's very difficult to control the production system in conventional agriculture, even if the level of applied chemicals is considered as moderate. Therefore the residues of the nitrates and pesticides are regularly found also in Polish vegetables, potatoes and fruits (Raport 2001).

THE IMPACT OF ORGANIC FARMING ON CROPS QUALITY

Organic food is produced in the controlled conditions according to the guidelines of the Council Regulation (EEC) No 2092/91. Organic plant products are produced without synthetic pesticides and mineral fertilisers, but with the natural animal manure, composts, green manure and diversified rotation. Certification in the organic farming means that a control unit testifies the product according to the accepted rules and production system is obligatorily controlled.

The organic crops were analysed in many respects in order to find out whether their quality was really better than conventional crops. There were many evidences that the average nitrate level in organic potatoes and vegetables was twice lower than in conventional ones (a.o. Abele 1987, Lindner 1991, Rembialkowska 2000). The organic manure, if properly prepared, doesn't cause the high concentrations of the nitrates in the plants, while the mineral fertilisers very often do.

The level of vitamin C was determined quite often in the organic crops. In most analysed crops the content of vitamin C was higher than in the conventional ones. It was found that the organic crops contained on average 36,3 % more vitamin C than the conventional ones (a.o. Kolbe et al. 1995, Rembialkowska 2000). The lower content of the nitrates and the higher content of the vitamin C in organic crops have an importance for the health. The nitrates are easily converted in our digestive tract into the poisoning nitrites (Eichholzer and Gutzwiller 1998). These substances are especially dangerous for the young babies, children and chronically ill and elderly people. Nitrates and nitrites are the precursors of the carcinogenic nitrosamines, the substances dangerous for everybody regardless the age. They are responsible for some kinds of the leukaemia and stomach cancer. Therefore the organic vegetables can help us in anti – cancer prophylactics.

Not only vitamins but also mineral compounds are desirable in the plant products. There are several evidences that the organic vegetables and fruits contain more important elements like calcium, magnesium, potassium, phosphorus and iron (Kolbe et al. 1995).

It's also important to tell that many studies confirm better sensory quality of the organic vegetables and fruits. They are recognised as more tasty, with better smell and consistence (Abele 1987, Lindner 1991 and Rembialkowska 2000). The impact of the organic food on the health of examined animals was also studied. It followed that the animals fed with the

organic fodder (mice, rats, rabbits, hens) showed better fertility and better health parameters (Plochberger et al. 1992).

CONCLUSIONS

1. According to Steiner's anthroposophy nutrition is closely connected with a development of human consciousness. It should be shaped according to individual features and needs of a person; nutritional culture and nice atmosphere at the table are important.
2. Anthroposophic diet based on the organic foodstuffs is a kind of lacto-ovo-vegetarian diet and has a lot of positive health effects, diminishing a. o. the risk of cardiovascular system disorders, cancer diseases, allergy and osteoporosis
3. Lifestyle factors associated with anthroposophy may lessen the risk of atopy in childhood: rare usage of antibiotics and antipyretics, few vaccinations, organic / biodynamic diet, a lot of naturally fermented vegetables in diet causing the large amount of lactobacilli in their intestinal microflora
4. Many data indicate that a lot of food contaminants are coming from the conventional methods in agriculture, animal production and food processing. Organic methods in agriculture are safer and therefore very important.
5. In European and Polish studies it was found that organic crops contained less nitrates and nitrites, more vitamin C and more sugars than conventional ones. The organic crops had also better sensory quality and contained fewer pesticides and more mineral compounds. They had also higher storage value and better influence on animal health and fertility.
6. Nutrition based on the organically produced foods and anthroposophic lifestyle can play an important role in health prophylaxis.

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SUMMARY

Human health is very much dependent on the life style, psychological status and nutritional pattern, as well as on the environmental conditions. It means that we can have a real influence on our health. According to Steiner's anthroposophy nutrition is closely connected with a development of human consciousness. It should be shaped according to individual features and needs of a person; nutritional culture and nice atmosphere at the table are important.

Anthroposophic diet based on the organic foodstuffs is a kind of lacto-ovo-vegetarian diet and has a lot of positive health effects, diminishing a. o. the risk of cardiovascular system disorders, cancer diseases, allergy and osteoporosis. Lifestyle factors associated with anthroposophy may lessen the risk of atopy in childhood: rare usage of antibiotics and anti-pyretics, few vaccinations, organic / biodynamic diet, a lot of naturally fermented vegetables in diet causing the large amount of lactobacilli in their intestinal microflora.

Chemicalization in agriculture, animal production and food processing introduces a lot of food contaminants into the food chain. Organic methods in agriculture are safer and therefore very important.

In European and Polish studies it was found that organic crops contained less nitrates and nitrites, more vitamin C and more sugars than conventional ones. The organic crops had also better sensory quality and contained fewer pesticides and more mineral compounds. They had also higher storage value and better influence on animal health and fertility.

Nutrition based on the organically produced foods and anthroposophic lifestyle can play an important role in health prophylaxis.