

Reports of visits

BIODYNAMIC FARM, Education Center of R.STEINER Foundation in Prądocin

Maria Cecilia Medina Gutierrez

On July 25, 2005, we were welcomed by Prof. Barbara Kowalkowska, president of the Demeter Association Poland, the agrar engineer in charge of the farm and other personalities.

The biodynamic farm in Pradocin is one of the three farms certified by Demeter International in Poland. It had four years of conversion and was accepted two years ago as converted. Here are also the headquarters of the Demeter Poland Association and the Rudolf Steiner Foundation. In the house there are rooms for students, classrooms and a big dining room by the kitchen. Our dinner and breakfast were prepared by three women of the region. It was very tasty, because of the fresh vegetables from the farm. That night there was a big fire prepared for us to seat around and exchange our impressions.

The farm covers an area of 54 ha, in a region geographically known as Dunes of Forest. There are 14 km² of forest near the farm. The basins' border of the rivers Odra and Vistula are also near the farm border. Irrigation systems with dunes and channels that existed before World War II were destroyed during the comunist system. The soils are noted with 5,6 (in a range from 1 for a good and 6 for worse), pH is 4. The water is high in iron (20 mg Fe/lit). The location has 400 mm rain in a year. The farm has its own water purifying system. After being cleaned the water flows into a little purification pond.

The production in the farm is divided as follows: 25 ha meadow, 5 ha vegetables (carrots, parsley, cabbage, cucumber, beans). The rest is used for potatoes, animal fooder, pasture for silage with white clover (*Trifolium repens*), cereals (triticale, rye, spelt). The seven year rotation includes 3 years of pasture with clover. Some plants included in the rotation are lupin, mustard, and phacelia. The soil is kept covered most of the time.

There is a wooden construction designed as observation tower and for mixing the preparations. It consists of 2 pine wooden barrels with a stirring device. From this point you can see the homegarden, the orchard, the greenhouses and the fields.

In the greenhouses tomatoes were growing. The variety was obtained in a german Demeter farm and was chosen for their taste. It is not suitable for transport. The tomatoes were planted with paprika,

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beetroot and cellery, in order to achieve allelopathic effects. Normally the production of plants begins in March. The seeds are planted firstly in wooden recipients. The plantlings are raised then on a substrate with compost. There was an oven in the greenhouse we visited.

The main part of the vegetable production is used in the kitchen of the Rudolf Steiner Center, which also buys products from other organic farms. Often, products are sent to other markets like Germany. Because of the low income in Poland, people cannot pay the high prices of biodynamic products.

Near the greenhouses there were the compost piles, one of them with a pumpkin plant growing on it. Generally the composts are treated in a different way according to the time of the year, being the humidity one important factor. Water is added when the weather is too hot. There are different compost types for vegetables and for the fields.

The animals kept in the farm are Jersey and Polish Black and White cows (polish-Crovinska). The milk is sold to a conventional milk processor and the meat to an organic meat processor. The cow manure produced is used as the activator in the preparations.

The most important personalities in biodynamic agriculture in Poland were Stanisław Karłowski (who assisted to Steiner's Agricultural Course in 1924) and Julian Osetek. They initiated the biodynamic agriculture in Poland. Nowadays the Rudolf Steiner Center works following the international biodynamic regulations.

Biodynamic agriculture uses organic ecological agriculture as its base. Although there is no "definitive" definition of what biodynamic farming is or is not, it currently is described by objective standards rather than systems. Crucially biodynamic farming treats the farm as a whole and aims to keep a balance between animals and plants. The farm is considered as one organism. Within biodynamic agriculture much use is made of working with the rhythms of nature, for example the light of sun, moon, planets and stars, and of working with preparations.

The moon calendar includes other planetary cycles as well. Various phases of the moon (waxing and waning) will have terrestrial effects; accordingly the principle parts of plants (roots, leaves and flowers) are affected. Certain types of plants are sown or transplanted at particular times. In this farm, some positive results are being observed, for example in plants sown on „seed days“ and harvested on „fruit days“.

The preparations were developed by Rudolf Steiner. They were mentioned in his Agricultural Course in 1924. At the beginning they were referred to with cover names like 500 for hornmist (horn filled with mist) and 501 for hornkiesel (horn filled with silica SiO₂), which remain in use until now. The aim of the preparations is to enhance the soil quality and stimulate plant life. Preparations are made through the year in a certain

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season following special recipes, with elements coming from plants, animals and minerals.

The 500 hornmist is prepared as follows: cow manure is used to fill a cow horn (a discarded one), dug into the soil on St. Michael's day (Michaelmass) 29th September, and harvested on the Day of St. John (Midsummer Day) 24th June. After 3-4 months this preparation is ready for use. One handful of the pure mixture (the quantity in the horn) is diluted in water (the portion in one horn is given to the quantity of water necessary to cover 0,25 ha). The water used must be clean water from the well, tap water or rain water. The water temperature must be 36-38 °C. When this mixture is stirred it is necessary to create a vortex in the water, first stirring in one direction, then in the other, slowly, rhythmically and always maintaining the vortex. This preparation should be applied in the autumn and at the beginning of the growing season, during the afternoon (evening) and under cloudy sky. Large drops should be applied, so that conventional sprayer nozzles are not suitable. The horn manure preparation has an effect on the soil and on the root systems of the plant. Due to the smell all the positive soil organisms are attracted to the surface and help incorporate the preparation into the soil as a means of improvement.

There is a second horn preparation, the horn-silica (powdered quartz packed inside a cow horn and buried in the soil for six months through spring and summer). For the application of this preparation fog is created. Atomised spray is applied in the morning for effective absorption by leaves, stems etc. during the day. Care has to be taken that one does not spray before rainfall as this would wash the preparation away. This preparation is applied to grain crops (cereals) at 10-15 cms and sprayed on two consecutive days in a two week period.

Some preparations are used in the compost. After the compost pile is ready, preparations are strategically placed inside the pile with an wooden stock. Some of these are:

- 502 Yarrow blossoms (*Achillea millefolium*)
- 503 Chamomile blossoms (*Chamomilla officinalis*)
- 504 Stinging nettle (*Urtica dioica*)
- 505 Oak bark (*Quercus robur*)
- 506 Dandelion flowers (*Taraxacum officinale*)
- 507 Valerian flowers (*Valeriana officinalis*)

The valerian preparation is a liquid, and is therefore sprayed or hand watered.

Another preparation to protect the plant against fungal diseases is the preparation from horsetailplant (*Equisetum arvense*), 508.

The preparations are kept in glasses within in a wooden box filled with peat. It is recommended not to store the preparations along with vegetables.

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ROLMIĘS

Mervyn Tucker and Andrzej Szeremeta

Second farm we visited was the Zdziarskis' family farm of 150 ha: 30 ha meadows and grassland, 120 hectares arable land mainly cereals with legumes. They plant mixes cereals – lupins and cereals - peas, rye is grown on 30 ha and recently they start trials of 2 ha of spelt to investigate if the soil conditions are enough for these crop. The crop rotation is not fix till now. The best one is still being searched with aim to maintain and improve soil fertility. The problem is really bad soils and low rainfall, which makes a lot of trouble to prepare appropriate crop rotation. The climate and rainfall on the farm is similar to that in Biodynamic farm of Education Centre of The R.Steiner Foundation as the farms are located in distance of around 12 kilometres.



The purpose of plant production is animal production. All harvested plant produces are used as feed for animals on the farm. Somebody can be surprised that cereals are not sold for human consumption. They found more appropriate from the market point of view to produce animal products.

The family loves animals and the main production on the farm is cattle and pigs. However we could see the vietnam pigs, rabbits, hens (special breed - green legs hens) and some cattle highlanders. They kept also some sheep 4 years ago, but quit it as they have not seen the profitability of the production.

The farm is one of the main centres of breeding the "Złotnicka pstra" pig. Farm owners cooperate with scientists from Poznań Agricultural University. Farmers have got 5 genetic lines of which two lines are pure, on the farm. It's the biggest controlled breed group of 54 sows.

The pigs are reproducing on the farm. Part of the piglets is fattening on the farm and many are sold for other farmers.

Pigs on the farm are weaning at 5-6 weeks. For the processing pigs are kept on the farm up to 7-9 months and 100-110 kg with 2,5 cm fat. The meat is very tasty as the breed is fat meat breed. Pigs at beginning up to 30kg are feed by mixes which are based on the own grain with added fish meal, later main feed is cereals mixes. As they very often buy pigs grown from their piglets on other farms, they also provide advisory for farmers whose cooperate with. It's ensuring the

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company that bought products are produced in proper way and in appropriate conditions.

They have not too much problem with diseases as they base on the prevention.

Rolmięś was the first organic meat organic processor in Poland. They start processing in 1991 and recently, it developed to quite big company which process 1000 pigs a month and 150 cows a month. They started organic processing in 2000 and 10% of production is organic meat products. The farm is the main source of raw materials. Company is also cooperating with other farmers, which supply both the conventional and organic raw materials. They produce up to 40 organic products. Company produces cooked meat, cold meat, giblets and wide range of sausages. During the organic production they do not add additional water to the products. In the process of production even part of natural water of meat is take off. So the productivity is lower than 100%. 1 kg of product is made from more than 1 kg of meat mass. The meat products are made according the traditional recipes and natural methods of smoking. That's why consumers are appreciating products from this company.

They market their products on the small shops. It is easier for them to sell by this channel than by supermarkets, where they lost some income due to lower price and lost communication with consumer. In marketing they cooperate also with other small meat processors. As the market of organic food in Poland is still undeveloped, they have problems with selling their organic products in surroundings. They sell their organic products mainly to specialized organic/natural shops in Warsaw (over 35 shops) and to some shops to Poznań and Gdańsk. Distribution of organic products is done by their own. Every week there are delivered to shops. Big advantage of it is the direct communication with shop sellers, so they collect easier the feedback form consumers than in the case of distribution by wholesale or other agents.

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Bakery SŁODKA

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In the afternoon of 26th July the group visited owned by Ryszard Paisecki the bakery "Słodka" (what means 'sweet') in Toruń. The bakery



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was established in 1989 as conventional. Organic production started in 1993 and it was the first bakery in Poland producing organic breads. Recently it has already experience of organic bakery production for more than 10 years. The interest of bakery owner in organic production was raised by Babalski, who was looking for customers for his flours. Mr Piasecki received support of Ball Foundation which found oven. It helps to develop production.

The bakery produces only 30% organic products, production is limited due to small demand. As it leads production organic and non-organic great care of authenticity of organic products is taken. Both types of production are divided. As the place is the same the production type and time are factors which differentiate these two types of production. Organic production as whole grain breads is running twice a week. At this time no conventional production is running. Conventional "white breads" are produced every day but during the "Organic days" only very short time in the morning. 10 years ago the bakery started with one type of organic bread, nowadays it produces 5 types all whole grain: rye, rye/wheat, wheat, spelt and wheat buns. As it was mentioned bakery start organic production due to Mr Babalski pressure, so till now company buy raw materials from Babalski's Mill.

Even the nearest competitors are more than 100 kilometers; the bakery has some difficulties to sell its organic products. The demand is quite low. The company produces around 1000 loafs of organic bread per week (including 100 spelt breads). Main market is Toruń; the city the bakery is located. Produces are not selling through general food stores, but only by specialized shop in organic, natural, healthy food. Next to bakery, there is the shop where consumers can buy "fresh, hot" organic and conventional production.

At the bakery and shop is working Owner of the bakery, his family and hired labour are working on the bakery: owner, his wife, two sons and 5 additional workers as well.

Prices of organic bread are around 50% higher than conventional. There is no non-organic spelt bread on the market so the prices premia could not be calculated. The price of spelt products are very high, for the example one 500g rye bread cost 1,4 PLN where spelt 500g bread costs 4PLN. (1 PLN \approx 0,24 EURO) The most important reason for the high price of this bakery products is the quite high price of organic raw materials.

Webpage and leaflets are used as the main way of promotion and additionally mass media and press promote in general organic food and farming including products of this bakery. Rye and spelt bread are advertised as unusual and healthy products.

Technology of production is based on natural milk fermentation. That ensures the speciality of their breads among conventional products. Sometimes in winter the yeast are used when they have problems with keeping high temperature needed for natural fermentation. 650 grams raw dough goes to ½ kg bread. Due to natural fermentation, longer

baking and content (whole grain flour) breads stay appropriate for consumption for 7 days. For baking are used steel forms spread by organic rape seed cold press oil. The problem of technology is using town water.

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FARM of THE KUJAWSKIS

Andrzej Szeremeta

After visit at the University Experimental farm in Bałcyny we went to the farm of the Kujawskis in Kurzętnik. It is the agro tourism farm located among fields, far away from other buildings of the village. The farm is nowadays led by young student of agriculture. His parents still are helping him.

The farm offers for tourists two double rooms and two 4-beds rooms with two bathrooms. The attractions on the farm are:

- silence and tranquility – as the farm is located in some distance from the village,
- organic food including home baked bread, many regional and vegetarian dishes,
- very beautiful garden with arbor,
- many place and space for walking and biking,
- possibility to rent bikes and car with horses,
- opportunity to ride a horse in nearby farm,
- small river Drwęca in distance of 4 kilometers.

On the farm we ate vegetarian dinner prepared of organic food made of mother of the farmer. It consisted of: vegetable salad, very delicious pasta (of Babalski) with tomato and vegetables sauce and tasty cake with fruits. The food is wonderful and it is worth to visit this farm especially for it.

We tried to test the hypothesis that providing attractions for tourists, farmers are increasing the biodiversity of the farm. This hypothesis was verified positively in small extent. It was verified positively as farmers for purpose of supply of raw materials for kitchen keeps vegetable garden and orchard, where many vegetables are planted. It was verified only in small extent as many of us expected also bigger diversity in animal production.

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Agro tourism farms are playing very important role in organic farming development. Thanks to visits of tourist at the farm, new consumers of organic food are educated. The education on the farm is the best way of consumer education as the tourist during visit of the farm can observe, test condition of production himself and learn how organic food is produced in every details. It can be gained more knowledge and practical experience, e.g. about crop rotation, animal production, natural pest management and fertilization. It can be state that organic food market is increasing as visitor of organic agro tourism farm are becoming new organic food consumers.

The main production on the farm is cattle for beef meat and cereals. The farm cooperates closely with Professor Józef Tyburski from University of Warmia and Mazuria. Professor in cooperation with farmer is carrying out research on the cultivation of spelt. The few varieties of spelt are grown on the farm and the different type of fertilization and sowing density is tested. It was very good opportunity to compare research on spelt done at the university experimental farm and at the farm. The main advantage of the research at farm is the real conditions of the cultivation on organic farm. The main disadvantage is potential problems with cooperation between scientist and farmer; however in this case cooperation is perfect.

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FARM and MILL of THE BABALSKIS

Andrzej Szeremeta

Wednesday afternoon we visited organic farm of The Babalskis. It is very special farm as it is one of the oldest organic farms in Poland (organic production started in 1985) and it is led by Mr Babalski who is the vicepresident of Association Ekoland and President of Brunch Kujawsko-Pomorskie of Association Ekoland. The association is the oldest organic farmers NGO in Poland. During many years at the beginning of organic farming development in Poland it was the most important association and the most important key actor on the political national scene. Nowadays, other associations of organic producers also start to develop and play important role in development of organic farming. The Babalski Mieczysław has very strong personality and he is a leader in surroundings. He also pushed other 7 farmers in his commune to organic production. However, Babalski is not active in the commune but also in province and whole country. He helped a lot in training of many other farmers in organic farming and helped in farm conversion.



The farm is quite small. Only 10 ha in six separate pieces: arable land cover 4,37 ha, pastures 2,42 ha, vegetable garden and orchard 1,2 ha. Two cows and calves are kept for better balance of production and for manure.

There is the mill and pasta processing plant on the farm. Mill processes the raw materials from the farm, and as the farm is not so big cereals is brought from almost all the country. Why is like this? Mainly due to quite high demand for flour, especially spelt flour and not enough supply in surroundings. Produced flour is used on the farm in the pasta processing and sold to the organic bakery in Toruń. The mill produced next to the flour other products like: cereals flakes, groats and bran. Together with produced pasta all these products are sold by direct supply or through wholesales almost in every organic food shop in Poland. The pasta as the one of the first processed product is the most known organic food in Poland.

Pasta of the Babalskis is very special, because is produced:

- from the flour milled on the farm,
- of whole grain flour, with or without herbs,
- in small special Italian equipment suitable for production of whole grain pasta
- in drier, which used hot air from solar panels located on the roof of the processing plant,
- in different shapes,

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- from different cereals: popular wheat and less popular rye and spelt.

Additionally to organic food pillows and matrassess made of buckwheat hulls and spelt chaff are produced on the farm. They are really nice and comfortable, ecological and as we were told very healthy.

Babalski is very aware of biodiversity. We visited his orchard where many species and varieties of fruit trees were planted. Among them we have seen a lot of old varieties of apples. He cooperates with scientists from the Botanical Garden in Powsin nearby Warsaw. Babalski has also own nursery-garden of fruit trees and he promote old varieties mostly among organic farmes all over Poland. Other his contribution in biodiversity maintainance is his cooperation with Gene Bank in Radzików. He keeps the small plots of over 50 different varieties of wheat, spelt, rey, barley and oats. Every plot is sown by around 100 seed. It seems that is really small. It is, however it is adequate to renew and refresh the seeds of certain variety. Gene Bank need to renew all seeds as seeds are getting old with time and there are loosing the rising and groth strength. Severals years ago, he started to multiply one variety of spelt. He started from less than 100 seeds and after few years, recently he has so many seeds, that he is selling them as sowing material for other organic farmers. It is something like Babalski is the father of 'reborn' spelt of this certain variety. He continues multiplification of other spelt varieties.

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BIOFOOD

Andrzej Szeremeta

Thursday morning we visited organic food and vegetables processing plant. It was established in 1994. Products are being sold with the brand RZEPKA what in translation means - "small turnip".

Company produces very special organic vegetables juices, so called bio-juices. They are



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made by natural lactic fermentation of different kinds of vegetables, pressed and pasteurized. These juices are made of:

- cabbage and cucumbers – they are the most popular;
- root celery with or without apple, beetroot with or without apple – very taste;
- carrot, tomato and multivegetable – quite regular, normal;
- root parsley, root parsnip – very special with “strange” taste.

Consumers are really appreciating the production method and buy these juices as opposite to “less natural” juices made off diluted concentrates. Especially, when juices are advertised among consumers with following arguments:

- 100% naturalness;
- magnificent taste and high nutritional value;
- many medicinal qualities of fermentation;
- high nutritional value as juices are not filtered, so they are full of natural vitamins, minerals and fibre;
- stored in brown bottles to prevent sunlight penetration and loss of nutrients;
- free of artificial additives, colourants and preservatives with no added sugar.

Next to special fermented juices company produces also fruit juices (apple, pear), fruit nectars (plum, red currant and cherry), vegetable preserves (gherkins, pickled cucumbers, sauerkraut, grated beetroots salad, root celery salad, grated pickled cucumbers, mix vegetable salad) jams, sesame butter and fruit pulps.

Company can glory of their products. Organic gherkins won the second prize of Organic World fair in Copenhagen in 1998.

The proof that fermented juices are healthy is the following example, that one company from France brought not pasteurized juice of fermented cabbage and cucumber in big tanks. Juices were repacked to small bottles and were sold in the pharmacies as the diet supplement.

At the beginning the company brought raw materials from organic farms located in the county and voivodeship. As the production year by year was increasing, Bio-Food got problems with insufficient supply. Recently, raw materials are delivered from organic farms located more than 300 kilometers from processing plant. The company has no problem with quality of delivered fruit and vegetables from old partners. However new partners, still tries to propose a cooperation, but the quality of raw materials is not satisfactory.

Few years ago the company started to cooperate with network of supermarkets TESCO. Bio-Food delivered some vegetables – potato, carrot, onion, beetroot and Chinese cabbage. However the cooperation finished quickly as both sides were not satisfied with the results. Supermarket network was not satisfied due to insufficient and not regular supply and with some problems of quality it decided to close cooperation. The company was not satisfied by the price, many

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problems and obstacles with delivery and very high requirements on quality and supply realization.

Juices are being sold in the bottles of 250 ml. They fit the best for consumers needs. The company tries to sell juices in bigger 1 liters or 750 ml bottles, however demand was very small, not significant for maintain this type of packaging. The company tried to promote big bottles with quite significant decreased in price. It finished with poor results, small was very minute. Consumers prefer only small bottles of 250 ml.

The company to keep the more ecological appearance tried to recycle the bottles. The use of recycled bottles in broader extent is too difficult. Even the consumers want to bring bottles to the shops, not every shop wants to take it back from consumer (need for space to storage them, supply buy wholesaler which not provided services of bottle recycling). The bottles from recycling were very often too dirty for proper and cheap cleaning (according to old equipment in the company and insufficient culture and knowledge of Polish consumers according recycling needs). So, as the results of all these issues the company use only small amount of recycled bottles provided in good clean conditions from only few shops from the region.

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