



About the AGROKRUH[®] system

News from Slovakia

September 2009

For those who decided 15 years ago to produce organic vegetables there were just two choices; either to use existing machinery, or to work manually. Existing machinery used in intensive mass production in agriculture, was not acceptable, simply because it was not possible to solve any problem with the machines which created it. Specialized machinery for organic farming, known as gantry technology, was too expensive and not effective. Mr. Jan Slinsky decided to develop his own machinery. He accepted the principles of gantry technology but he fixed one end of the gantry and created AGROKRUH[®] (circle).

Now we have machinery which does exactly what we need in sustainable production of organic vegetables. It is noiseless, does not produce a smell, is a stationary technology fulfilling up to 70% of the tasks necessary for the production of bio-vegetables in an automatic robotized regime. The technology enables the production of bio-vegetables at relatively low operating costs not only in accordance with the respective laws of the Slovak Republic and the European Union, but it is able to improve the quality of organic products.

This AGROKRUH[®] technology markedly improves the quality of the cultivated soil, especially in that it does not become hypertrophied and that no undesirable change of soil bacteria takes place. The soil acquires, step by step, the qualities of mellow forest soil. The method enables production in areas with limited water resources, because sub-surface trickle irrigation is aimed directly to the root system of plants rather than with spraying.

The AGROKRUH[®] gantry is attached at one end to a fixed joint and at the other has an electromotor propelling a wheel. The spanning arm can be equipped with almost a complete set of implements, appliances used in vegetable production. Thanks to the rotation of the arm, the implements move on a spiral from the outer side of the circle towards its centre. Its operation is very simple and highly effective. Our crop rows are in a spiral.

The circle as the basic shape used in the production of bio-vegetables, is an optimal and natural shape. The project we are finishing now, assumes the preparation of an area suitable for 15 circles arranged in triads. Every triad will be served by one facility which will move between the joined centres of the circles. Thus the production of bio-vegetables on 15 circles will require only 5 gantry facilities.



At the outer end of the Agrokruh gantry is an electrically powered drive wheel which rotates the frame around its centre. All manner of implements can be attached to the frame and these are automatically indexed inwards or outwards as the unit rotates, creating a precise spiral

The centre of every circle is served by water and electricity.



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The use of agro circles will improve the quality of the cultivated land which will naturally increase the crops without degradation of other environmental elements. Focusing on a local group of vegetable consumers will have a positive effect resulting from a community supported agricultural production. The technology allows the production of a wide variety of vegetables, which is useful from the agronomical point of view and also for supplying the consumer with a wide range of vegetable products grown in their immediate area.

Let us be more precise about the question. What are the differences between using traditional tractor technology and the AGROKRUH[®] gantry?

Quality and structure of soil

All the equipment is hanging on the gantry and soil is not therefore compacted by either the wheels of a tractor or the implement. The soil is not ploughed; instead of this a spading machine is used. The spading machine does not turn the soil, which is an advantage for beneficial soil bacteria.

As a fertilizer, a compost of worms and extracts of sapropel (fresh water pool silt) is used. The soil improves in environmental quality (water storage, stability and other factors) and of course as a medium for growing vegetables.

Irrigation

The water is supplied by trickle irrigation to the root rather than by overhead spraying. This means we need less water and as the plant leaves are not wetted, it reduces the risk of fungal disease.

Nutrient quality of vegetables

The wide range of vegetables grown without chemicals on the farm using AGROKRUH[®] technology can be consumed within 6 to 12 hours of crop harvesting. This makes the food more valuable than vegetables from intensive farming and supermarkets. The accessibility of fresh and tasty vegetables can change gastronomic habits towards increased consumption of vegetables.

Structure of farming in the new EU countries

Nowadays the structure of agricultural farms in some new EU countries (Slovakia, for example), is a result of the transformation of communist agriculture. There are large farms, privatised former cooperatives, and then almost nothing, or a small number of small farms. The continuity of farming was interrupted for many years. More and more small farmers gave up. To survive in competition with large farms is very difficult. AGROKRUH[®] offers possibilities for them in areas where vegetables can be grown. Consumers accept higher prices and the technology allows a combination of production of vegetables with agro-tourist activities. It is possible that a family having around 5 ha could make a living from a farm. AGROKRUH[®] has the potential to increase the number of small farmers and to create new working places.

Environmental influences

Continued working of the soil with AGROKRUH[®] technology changes the negative influence of ploughing and stops soil degradation. The soil retains more water and flooding is reduced. As the equipment for crop production is always in the same place and following the same path, it's possible to have adjacent meadows for recreation, a lake for swimming or areas for sporting activities. From point of view of function and aesthetics, there are great new possibilities for shaping farms of the future.



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Social and psychological aspects

Consumer assisted agriculture creates new attitudes from the consumer towards the farmer and vice versa. The contact is no longer one way and anonymous. The consumer has the chance to be present during farm activities without disturbing the farmer and being negatively influenced by chemicals. Neighbouring farmers of the AGROKRUH[®] system are not competitors, but can always ask for help with the methodology because each producer has his or her own permanent clients. The most important problem for organic farmers is to produce, not to sell. This technology and farming system therefore tends to help rather than destroy a farmer's chances of continuing in business and being prosperous.

The first installation of AGROKRUH[®] technology is in Brnov Les village Hrubý Šúr, Slovakia, about 30 km from Bratislava - the capital of the Slovak Republic. The area in question occupies 15 ha (150 000 m²) on the bank of Malý Dunaj (Small Danube) river. Approximately one half of the area consists of fields and the other half comprises flooded forest. Within the above mentioned area there are 15 cropping circles covering 2 hectares.

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<http://www.youtube.com/watch?v=mYrJ0BJ4Qak>