

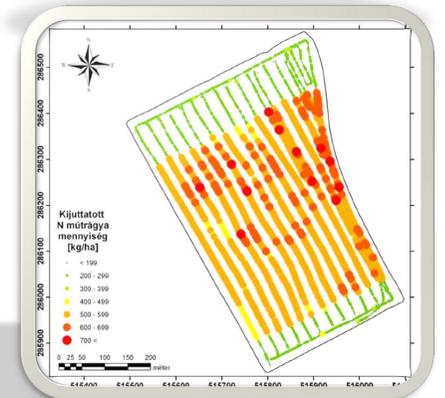
# From field to fork

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## Development of methods for precision crop production (Institute of Biosystems Engineering, Institute of Crop Sciences, Institute of Environmental Sciences)

Food begins with soil which is one of the most precious natural resources. The proper utilization of soils is the basis of successful plant production and environmentally friendly effective agriculture. A new method of the proper and sustainable utilization of this basic natural resource is precision agriculture which was an important element of this project. This sub-programme was realized by the Institution of Crop Production and the Institution of Biosystems Engineering. Precision agriculture basically is a management system that includes measurement, data handling, analysis and decision making elements. The precision agriculture programmes covered almost all aspects of plant production including soil sampling, soil and plant analysis, soil cultivation, seeding and maintenance works, intercultivation, nutrient management, plant protection, harvest and yield mapping.



VRA fertilizer replenishment based on earlier soil sampling

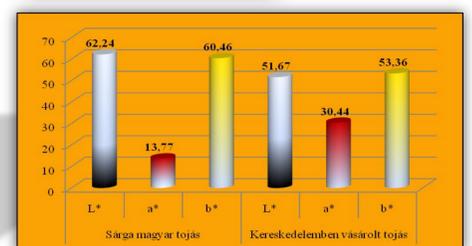


## Nutrition research and development (Institute of Animal Science, Department of Nutrition)

There has been an increased interest in recent years in ways to manipulate the composition of animal products (meat, milk and egg) to meet with human demands. Fat content and fatty acid composition of animal originated food have great importance in terms of human nutrition. A considerable number of studies proved the different fatty acids to have a number of effects on our health, based on their different physiological roles.

## Animal Science Research (Institute of Animal Science)

In the programme experiments were carried out with poultry (broiler and laying hen) to increase the conjugated linoleic acid (CLA) proportion of fat in broiler meat and egg. Fish takes up an unfortunately low proportion in the nutrition of Hungarian people. The production of quality food products using new high quality hybrids can modify this situation. Experiments were carried out in the programme with African catfish and sturgeon hybrids fed on special linseed supplemented diet in order to improve the fatty acid composition of their fillets. The animal breeding background of the programme was supported by modern biotechnological methods. In one of the projects PCR-RFLP method was used to study gene polymorphisms in the traditional Hungarian Mangalica pig and Hungarian Yellow chicken in order to discover the genetic basis of certain traits important from food production point of view.



## Research and development in the field of food science and technology (Institute of Food Science)

Our food-related R&D activities focused on three major areas as follows: (1) determination of mild heat treatment parameters resulting in destruction of clostridial spores in raw waterfowl livers; (2) development of *Spirulina*-enriched functional fermented milks; and (3) transglutaminase treatment of milk to improve the retention of whey proteins in cheese, thereby increasing the profitability of cheese-making.