

## COMPUTER-BASED SIMULATION OF AGRICULTURAL PLANTS

### MEZŐGAZDASÁGI ÜZEM SZÁMÍTÓGÉPES MODELLJE

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The long time-used simulation types and -methods in the industry are giving permanently helpful informations for the managers to manage the production processes in acceptable quantity and quality. There are some special fields (machine planning and developing for example) where the simulations are as correct and exclusive, that no production process can be started without a complete detailed simulation.

The agricultural production processes are so heterogeneous that a simulation of the whole process is hard to adapt. The reason is clear: working with biological organisms and production processes which are bounded to uncontrollable environmental factors means always a higher risk. But that is the point at all. This higher risk and the managers who have to work with that conditions are claiming correct simulations.

The specialties of the agricultural systems make more difficult to use the simulations which are used in the industry. This specialties can be collected around six key-factor:

1. Question of agricultural doubtfulness
2. Too less or too much information
3. Calculated information distortion
4. Efficiency of the rational decision-maker and the complex system of the goals
5. Heuristic decisions
6. Fuzzy character

As shown by the key-factors the construction of a good modell is not easy. But there is a simple method to handle the different and uncontrollable factors. Every process in the production means a conversion. There is a start-up status, the production process is using energy, material and living-work, pledging resources, generating costs. Every process can be described by this way including the smallest detail which plays the smallest role in the production process.

This new way of construction of agricultural models can give as accuracy and efficiency as in the industry used models. As the processes are correctly described, the simulation can follow the real production process, or can simulate any changing of the process, or the used resources to show results of the production or results of a malfunction or change of an environmental factor.