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**Volodimir POLUPAN**

serunder@mail.ru

National University of Food Technologies, Kyiv

**UKRAINE**

### **DECISION SUPPORT SYSTEMS IN SUGAR INDUSTRY**

An adjustment process of production is carried out by automation systems and requires no manual control. However, a poor reliability of system elements, imperfection of control laws, caused by insufficiency and imprecision of information about controlled object — all these can cause problems in production process. That is why an operator must permanently oversee automation system operation and, if some problems occur, operator must get involved into production process. Operator's decision depends on the information about the object condition, the adjustment system, criteria and his expertise. Thus, one needs to use a decision support system.

Such a decision support system must meet next requirements:

- fast problem solving;
- self-directed learning;
- system adaptation;
- response to unforeseen events;
- intervene into production process without operator, if necessary.

An algorithm of decision support system operation is following:

1. Evaluation of production process condition.
2. Selection of criteria and assessment of their importance.
3. Report to operator about decisions.
4. Dynamic analysis of consequences of operators' decisions.
5. Collection of information about all the introduced decisions and consequences.

Problems, which are solved by decision support system, usually have huge amount of uncertainties. These uncertainties can be integrated into following groups: uncertainties due to insufficient information about problem; uncertainties due to imprecise predictions of production process reaction onto the interventions; uncertainties due to unfaithful understanding of the problem by an operator. However, an expert, who teaches the system, defines the influence of each uncertainty on the system's decision.

**KEY WORDS:** *Decision Support System, sugar, DSS*