

Section 2. ENERGY SYSTEMS FOR FOOD CHAIN

Subsection 2C IntelligentControl Systems

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INTELLIGENT SYSTEMS IMPLEMENTATION IN BREWING MALT PRODUCTION

Malt production currently requires substantial changes in process control, which is related with uncontrolled many physical, chemical and biological processes during production.

A lot of scientists engaged in malting process researching, most of the work is devoted to malt germination and drying research, because of complexity, processes studying incompleteness, greatest quality impact.

Many researchers are involved process models making, that with certain assumptions and limitations described process. Models can be classified into classical (like dif. equation) and intelligence (like neural networks). The authors note that classical models are created with certain assumptions and should be re-built, even for similar malt plant with other parameters. Authors that use neural networks mainly explore moisture content changing, without paying attention to other parameters, or for visual malt color evaluation.

It is impossible to solve the aforementioned problems by leaving management system at the same level.

By adding to existing control system decision support system (DSS) control system will get a reducing of «human factor» influence and delays in decisions. By adding system predictive model — the possibility to leveling output malt indicators fluctuations.

The use of intelligent systems can get rid of the need to hand-build models for each new object by using different adaptation mechanisms, but also requires a deep object parameters relationships study and close cooperation with experts (to create DSS).

This system appropriate to use for the improvement of existing malt production systems to betterment product quality.

KEY WORDS: malt quality, intelligent system