COMPUTER MODELLING OF AUTOCLAVING AND OPTIMAL UTILIZATION OF ITS RESOURCES

AUTOKLÁVOS HŐKEZELÉS SZÁMÍTÓGÉPES MODELLEZÉSE, ERŐFORRÁSAINAK OPTIMÁLIS FELHASZNÁLÁSA

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One of the factors determining the quality of the cans and primarily the meat cans is the heat treatment, the process which is the most significant regarding the energy demands of an enterprise, so its economic aspects cannot be disregarded.
A heat treating cycle can be divided into three phases: heating up, holding, chilling. Steam is used typically to achieve the necessary temperature and water is used for chilling. There are different regulations on temperatures and time of heat holding for each product so the duration of the heat treatment depends on the product. When operating more autoclave simultaneously certain phases of the process can overlap thus the steam and water demand can develop with big fluctuation. The availability of these resources is limited or they are accessible by extra costs. Hence it is practical to coordinate the operation of the different autoclaves in the interest of thrift.
To realize the process coordination one has to possess the mathematical model of the system and the computer programme achieving the timing and simulation.
The data of the model can be used in Microsoft Excel environment by modifying the timing parameters manually or with a Visual Basic programme developed for this task, where the utilization of resources can be monitored on a diagram.
To create the decision support system in Microsoft Excel environment, the database needed for the model has to be developed, a user friendly interface and the Visual Basic for Application software providing the timing and simulation has to be created.

Kulcsszavak: autokláv, hőkezelés, modellezés, szimuláció, optimalizálás