

Abstract:

A novel control structure for a potato storage facility is presented that is directly geared at the optimal preservation of product quality. The quality of the stored potatoes is defined as frying colour that depends on sugar concentration. The optimal storage conditions are estimated using models of both product behaviour and storage process to optimise quality and costs. The control structure is implemented in an industrial storage facility. Results show an improved product quality and lower energy cost. An important extension to the nominal product model is the consideration of product quality with its variation.