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# Deteriorating inventory model using preservation technology with salvage value and shortages

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**ABSTRACT**

In this paper, we attempt to develop an inventory model for deteriorating items with the consideration of the fact that the use of preservation technology (PT) can reduce the deterioration rate significantly. In this model the shortages are allowed and salvage value is incorporated to the deteriorated items. Demand rate is constant, deterioration rate is time dependent with Weibull's distribution. The model is solved analytically by minimizing the total cost of the inventory system and the numerical and graphical analysis is provided to illustrate the solution and application of the model. This analysis of the model shows that the solution of the model is quite stable. The model can be applied for optimizing the total inventory cost of deteriorating items inventory for the business enterprises where they use the preservation technology to reduce the deterioration rate of the inventory items.

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