

## **Influence of Transportation Mode to the Deterioration Rate: Case Study of Food Transport by Ship**

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**Abstract :** Food as perishable goods represents a specific and sensitive part in the supply chain theory, since changing of its physical or chemical characteristics considerably influences the approach to stock management. The most delicate phase of this process is transportation, where it becomes difficult to ensure stability conditions that limit the deterioration, since the value of the deterioration rate could be easily influenced by the transportation mode. Fuzzy definition of variables allows taking into account these variations. Furthermore an appropriate choice of the defuzzification method permits to adapt results, as much as possible, to real conditions. In the article will be applied the those methods to the relationship between the deterioration rate of perishable goods and transportation by ship, with the aim: (a) to minimize the total costs function, defined as the sum of the ordering cost, holding cost, disposing cost and transportation costs, and (b) to improve supply chain sustainability by reducing the environmental impact and waste disposal costs.

**Keywords :** perishable goods, fuzzy reasoning, transport by ship, supply chain sustainability

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