Testing improvements in the chocolate traceability system: Impact on product recalls and production efficiency

The primary aim of food traceability is to increase food safety, but traceability systems can also bring other benefits to production systems and supply chains. In the literature these benefits are extensively discussed, but studies that quantify them are scarce. In this paper we propose two hypothetical improvements of the traceability system within the chocolate production system and supply chain and we illustrate the resulting benefits by using a case study. Based on the case study, we quantify the influence of these improvements on production efficiency and recall size in case of a safety crisis by developing a simulation tool. These results are aimed to illustrate and quantify the additional benefits of traceability information, and could help food industries in deciding whether and how to improve their traceability systems.

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