

It's still good! Date labels & food waste

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Abstract:

We examine a retailer that produces and sells a perishable product, facing three key decisions: the date label (i.e., effective shelf life) to print on the packaging, the frequency of batch production, and the quantity to produce in each batch. In making these choices, the retailer takes into account the product's biological shelf life, the associated costs and revenues, and consumers' attitudes and expectations regarding shelf life. We model different types of consumers based on their attitudes towards date labels and analyze how these variations affect the retailer's optimal decisions and resulting product waste. Our findings show that when consumers rely on date labels to guide their purchases, retailers are incentivized to set shorter date labels than the actual biological shelf life. This, in turn, leads to increased food waste, as consumers discard products that are still safe to consume.