

Human error major driver of food waste

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Human errors caused by a lack of standardised procedures and insufficient training are the major drivers behind loss in food manufacturing, a new study has found.

Researchers at Brunel University London and Ghent University studied the production processes at 47 <u>food manufacturers</u> in Belgium to determine where the highest losses were observed.

They found that <u>human error</u> accounted for 10.9% of all food waste, second only to the losses recorded as a result of product change – changing the food output of a manufacturing facility. The findings will be published in the journal *Annals of Operations Research*.

"At most of the companies we went to, there was no standardisation of work or visual management in place," said Dr. Manoj Dora of Brunel Business School, who led the study. "It's a management issue."

"In many instances there wasn't proper training or a standardisation of work being applied in their workplace, and as a result there was a greater tendency towards errors, and therefore, more <u>food waste</u>."

The researchers gathered data from a wide variety of companies, ranging from ready-meal manufacturers producing 6,300 tonnes of food per year, to drinks manufacturers producing nearly 130,000 tonnes of products per year. On average the manufacturers suffer a loss of 1 tonne of food for every 35 tonnes they produce.



Where 10.9% of this loss was accounted for by human error and 13% was caused by product changes, a further 8.7% was attributed to product defects and 6.4% as a result of buyer contracts.

"Aside from human error, another key area of loss is product changes," said Dr. Dora.

"Say you're making a tomato sauce and when you've finished you want to make a mustard sauce, then this means the whole process must be cleaned. This whole process contributes a significant amount of loss."

Dr. Dora and his team also identified the relationship a company has with its suppliers and customers as being an area of significant loss, especially when considering seasonal goods.

"When dealing with suppliers, it's important when you order, how you order, and how you keep the produce," said Dr. Dora.

"But then dealing with the buyers – the supermarkets – is also critical. Let's say a retailer orders a thousand kilos of sausages predicting <u>good</u> <u>weather</u>, but then it clouds over and rains, so retailer cut down their demand. This would mean the <u>manufacturer</u> bears these losses, and there is significant waste."

"This shows a lack of collaboration in the supply chain – the farmer, the processor and the buyers aren't in sync. They're talking, but not enough to predict each other's demand and supply."

One of the most interesting findings, said Dr. Dora, was how unaware many manufacturers – particularly the smaller ones – were of how much food they were wasting.

"We were amazed to see how little companies didn't actually measure



how much they were throwing away, and they were surprised to see in monetary terms how much they're losing because of food loss," said Dr. Dora.

"Good collaboration, appropriate measurement systems and the implementation of lean management tools in the production process can significantly reduce food loss".

The paper – Importance of Sustainable Operations in Food Loss—Evidence from the Belgian food processing industry – will be published in the *Annals of Operations Research*.

More information: *Annals of Operations Research.* <u>link.springer.com/journal/10479</u>

Provided by Brunel University

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