

An Assessment of Tray Waste Measurement Techniques

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Abstract

Objective: To determine which of two tray waste methods provides the most accurate approximations of actual waste, when compared to weighing tray waste.

Design, Setting, and Participants: Researchers set up a measurement station in an elementary school cafeteria in Western New York where they carried out three waste measurement methods: photographing trays; reporting whether none, a quarter, half, three-quarters, or all of each selected item was wasted (quarter); weighing the amount of each wasted item. At a later date, researchers examined the photographs and reported whether 0% to 100% of each item was wasted.

Outcome Measures and Analysis: Researchers weighed a serving of each item offered in the cafeteria so that the visual estimates for food waste could be converted to grams and compared to the weighing method. T-statistics of the difference between the weighing method and the other two methods provide evidence for each method's accuracy.

Results: Except for green beans ($p < 0.01$), there were no statistical differences between the weighing method and the quarter method. Statistical differences between the weighing method and the photograph method were significant for chicken nuggets and chicken strips ($p < 0.01$ in each case), applesauce ($p < 0.05$), 1% milk ($p < 0.01$), and flavored milk ($p < 0.01$).

Conclusions and Implications: Visual methods-photograph and on-site methods-for measuring tray waste are less costly than weighing waste of each individual item, but vary in accuracy. Photograph methods are useful but limit food visibility, where as on-site visual estimates are much more accurate.

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