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As a response to the growing pressure on the supply chains, developing a resource-efficient circular economy will be fundamental to satisfy the future demands for material resources. In this context, the Danish Government, in 2013, launched its Resource Strategy Plan, mandating that, by 2018 at least 60% of food waste – that cannot be prevented or reduced –generated by service sector, including in office areas, should be source-sorted and collected separately. In order to establish the baseline of the current situation, and to allow for any evaluation of performance against target indicators, data on solid waste generation and composition are required.

The overall aim of this study was to quantify the potential for source-sorted food waste in office areas, by quantifying food waste generation rates, source sorting efficiencies and the purity of sorted fractions. Additionally, temporal variations of food waste was investigated and biochemical methane potential of the collected source-sorted food waste were determined.

This study was carried out in the office areas of the Department of Environmental Engineering at Technical University of Denmark. In the course of this study, two plastic waste bins of 60 L each were placed in the kitchens: food waste bins and residual waste bins. Food waste and residual waste from these kitchens were collected and weighed separately, on a daily basis, during 133 working days (29 weeks). Furthermore, waste composition analyses were conducted every week to investigate the efficiency of the source-sorting campaign and the purity of the source-sorted food waste.

The result showed that food waste generation amounted to 23 ± 5 kg/employee/year, of which 20 ± 5 kg/employee/year was source-sorted, with a considerably high purity of 99%. Residual waste amounted to 10 ± 5 kg/employee/year and consisted mainly of paper (29 ± 13%), plastic (23 ± 9%) and missorted food waste (24 ± 16%). The waste generation rates were not significantly influenced by the seasonal variation, however, we found a significant difference in generation rates on weekdays. The methane potential of source-sorted food waste was 463 ± 42mL CH4/g VS. These results show that food waste in office areas offers promising potential for relatively easily collectable and pure source-sorted food waste, suggesting that recycling targets for food waste could be achieved with reasonable logistical ease in office areas.