

Disposing Large Amount of Food from their Fridge? : A Case Study with Waste Composition Analysis and Questionnaire Survey in Japan

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INTRODUCTION

The Japanese government estimated that the amount of avoidable household food waste in Japan was about 2.84 million metric tons in 2017 (Sawaji 2020). In order to reveal its actual situation, we have conducted investigations of household food waste in several municipalities (Watanabe, K., Okayama, T. et al. 2020). Among them, our previous research indicated that there were 5 in 92 waste bags containing a large amount of untouched food, which accounted for about 50% of the untouched food (Yamakawa, H., Okayama, T. et al. 2019). We conducted another food waste composition analysis and questionnaire survey in 2019 in the same area. This paper reports the results of the new investigation.

MATERIALS AND METHODS

We conducted waste composition analysis of 151 kg of food waste, which was contained in 300 kg (95 bags) of combustible waste collected by municipality from a rural area of Seika Town in Japan in Dec. 2019. We introduced Tokyo method which we developed (Watanabe, K., Okayama, T. et al, 2020), and categorized food waste as shown in Table 1. We also conducted a questionnaire survey to the households located in the area after the food waste composition analysis. We received responses from 74 households (responding rate:37%). We analysed frequency to dispose large amount of food from their fridge.

RESULTS AND DISCUSSION

Household food waste composition of a rural area of Seika Town

Table 1 shows the result of the food waste composition analysis. 50% of food wastes were classified into avoidable parts, same as our previous study. About 14% was leftovers and about 37% was unused food. Table 1 also shows that about 50% of unused food was "large amount of unused food in a waste bag". In this waste composition analysis, we defined "large amount of unused food in a waste bag" as more than 2kg unused food which was contained in a waste bag. This percentage is further higher than that of our previous research in the same district. These large amount of unused food was contained in 7 in 95 waste bags.

Frequency to dispose large amount of food waste from their fridge

We asked about average frequency to dispose large amount of food from their fridge, except home-grown

produce. Here in this questionnaire, we defined "large amount" as "more than 5 items". Table 2 shows the result.

62% of the respondents rarely discarded large amount of food from their fridge, although 10% of respondents disposed it more than once a month. We estimated the average rate of waste bags that contains large amount of food from their fridge at a time of combustible waste collection and it becomes about 4% of all bags. On the other hand, large amount of unused food in Table 1 was actually found in 7 in 95 bags. December is a clean-up season in Japan and this might increase the rate of large amount of unused food.

Detailed results of our analysis will be given in our presentation.

Table 1 Household food waste composition in a rural area of Seika Town in Japan (Dec. 2019)

	Ordinal	Large Amount*	Total	Rate	Rate of Large Amount
A1: Unopened ingredients (in packaging)	3.099	4.311	7.41	4.9%	58.2%
A2w: Unused ingredients in whole (no packaging)	7.099	4.935	12.034	8.0%	41.0%
A2wf: Home-grown vegetables etc.	0.205	3.377	3.582	2.4%	94.3%
A2p: Partly used ingredients	9.669	10.891	20.56	13.6%	53.0%
Subtotal of A:Unused Ingredients	20.072	23.514	43.586	28.8%	53.9%
B1: Unopened food in packaging (ready to be eaten)	1.851	3.723	5.574	3.7%	66.8%
B2: Uneaten food (not in packaging or opened packaging)	4.448	1.722	6.17	4.1%	27.9%
B': Unopened drinks				0.0%	
Subtotal of B:Unused Ready to be eaten	6.299	5.445	11.744	7.8%	46.4%
C: Leftover food (partly eaten)			20.673	13.7%	
C': Leftover drinks			0.128	0.1%	
Subtotal of C: Leftovers			20.801	13.7%	
Subtotal of Avoidable Food Waste	26.371	28.959	76.131	50.3%	
De: Potentially edible residues (possibly avoidable)			35.5446	23.5%	
Di: Inedible parts			36.1134	23.9%	
Subtotal of D: Intentionally removed parts			71.658	47.3%	
E: Unclassifiable			3.575	2.4%	
Total			151.364	100.0%	

* "Large amount" means more than 2kg unused food(A or B) which was contained in a waste bag

Table 2 Frequency to dispose large amount of food waste from their fridge

	More than 4 times in a month	1 to 3 times in a month	Once in a few months	A few times in a year	Rarely	Others	Total
No	3	4	4	7	42	8	68
Rate	4%	6%	6%	10%	62%	12%	100%

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