



# Coffee to go: Handling of customers' own reusable cups when dispensing hot drinks

Denise Eble, Gertrud Winkler

## Abstract

Food businesses were tested for compliance with guidelines published by Food Federation Germany and Environmental Action Germany containing recommendations for handling reusable cups brought in by customers for receiving hot drinks. Fifty test purchases were carried out at randomly selected businesses serving coffee to go. Filling of the cups was observed in a direct and well-structured yet covert manner, with active participation in the interaction. Compliance with the recommendations was documented using checklists and the data was analyzed in a descriptive manner. In two of the 50 test purchases, the staff did not dispense the hot drinks into the customer's reusable cup. In 46 of the remaining 48 test purchases, the coffee was dispensed by staff; in the other two cases, the hot drink could be obtained via self-service. In four of the test purchases, all of the tested criteria were met. Three of these purchases took place in branches of a large chain of bakeries with > 350 branches. Dispensing of hot drinks into reusable cups at the request of customers was already in practice almost everywhere. However, in some cases, there was room for improvement in terms of hygienic filling and dispensing of hot drinks among service staff, who would benefit from more targeted training.

**Keywords:** coffee to go, reusable cups, hot drink, hygiene, sustainability, public catering

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## Introduction

In 2016, around 2.8 billion disposable cups and around 1.3 billion plastic cup lids were thrown away as waste in Germany, corresponding to about 320,000 cups per hour [1]. One approach to reducing this waste—which amounts to about 28,000 tonnes per year—is to use reusable to-go cups.

In 2018, Food Federation Germany [German: Lebensmittelverband Deutschland e. V.] (formerly Federation for Food Law and Food Science [German: Bund für Lebensmittelrecht und Lebensmittelkunde—BLL]) published a “Leaflet with instructions for the hygienic handling of customers' own cups when filling self-service hot beverages or hot beverages served by staff” [2] in order to ensure food safety when filling cups brought in by customers. The “Fact sheet with instructions for hygienic filling of customers' own ‘to go’ coffee cups”, published by Environmental Action Germany [3] has been available since 2016. In these documents, Food Federation Germany and Environmental Action Germany provide the food businesses performing the filling (mostly establishments belonging to the independent catering, chain catering or communal catering sectors or the retail trade) with information on the relevant legal framework and on operational requirements, as well as concrete recommendations for handling customers' own cups.

The aim of this study was to investigate compliance with these requirements and recommendations in randomly selected, independent catering establishments (e.g. cafés) and retail trade establishments (e.g. bakeries).

## Material and methods

In the period from November 2018 to May 2019, a hot drink (latte macchiato, cappuccino, hot chocolate or tea) was ordered and purchased



Checklist number 1				
Hygiene in the handling of customers' own cups when filling hot beverages or hot drinks <b>served by staff</b>				
café: _____	test number: _____	date: _____	time: _____	
requirement complied	Yes	No	Not specified (n/s),	because
The customer's cup does not enter the hygienic area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
The surface on which the customer's own cup is placed is outside the hygienic area (e.g. counter)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
The coffee machine or customer's own cup are not placed in close proximity to unpacked easily perishable food or areas where such food is handled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Avoid contact between server's hands and the customer's own cup, avoid cup passing beyond the counter area and avoid contact between cup and operational equipment</b>				
use of transfer containers,	cup holders	or trays	no use of transfer containers	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transfer container must be cleaned after use (if one is used)				
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the server's hands come into contact with the customer's own cup?	no	yes		
	<input type="checkbox"/>	gloves	hand washing	no measures
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer's own cup does not touch the filling nozzles of the coffee machine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
The customer takes the lid off themselves and keeps it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Cleanliness of the area/regular cleaning</b>				
Clean surfaces on which to put customers' own cups (counter, machine, trays and cup holders, milk and sugar station)				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If reusable cups are sold: predominantly cups with smooth, easy to clean surfaces (e.g. glass, enamel, stainless steel)				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Remarks:				

Fig. 1: Checklist for fully structured observation of dispensing of hot drinks served by staff in reusable cups brought in by the customers (based on [2, 3])

at 50 randomly selected businesses selling hot drinks in rural areas of Baden-Württemberg and filling into a reusable cup brought in by the test purchaser was requested in each case. During the test purchases, filling of the cups with hot drinks was observed in a direct and well-structured yet covert manner, with active participation in the interaction. It was recorded whether the hot drinks were served by staff or via self-service and whether filling of hot drinks into the customer's own cup was refused.

Compliance with the requirements and recommendations from Food Federation Germany and Environmental Action Germany was recorded using two checklists: one for staff service and one for self-service. ♦ Figure 1 shows an example of the staff service checklist. For each of the businesses where a hot drink was purchased, a checklist was filled out manually on site and one of the following was recorded for each requirement: requirement met, requirement not met, not specified. If not specified was recorded, the reason for this was also recorded along with any relevant comments.

After each observation, the number of branches that each business that was visited has was recorded. The data that was manually recorded on the checklists was transferred to Excel and was evaluated using descriptive statistical methods.

## Results

In two of the 50 test purchases, drinks were dispensed into the customer's own cup via self-service, in the other 48 cases, they were dispensed by staff. In none of those 48 cases was filling into the customer's own cup clearly and unambiguously refused. However, despite the clear request for filling into the customer's own cup, in five of these 48 purchases, the drink was put in a disposable cup in the first instance. In three of these five cases, the staff then transferred the drink from the disposable cup to the reusable cup. This was then still counted as staff service. In the other two of these five cases, the test purchaser was instructed by the staff to transfer the drink into their own cup by herself. This was then counted as "not dispensed in the customer's own cup". Therefore, there were a total of 46 test purchases in which the staff dispensed the hot drink into the customer's own cup. In three of these 46 cases, the staff said that they were not allowed to fill the customer's own cup, but they did so anyway.

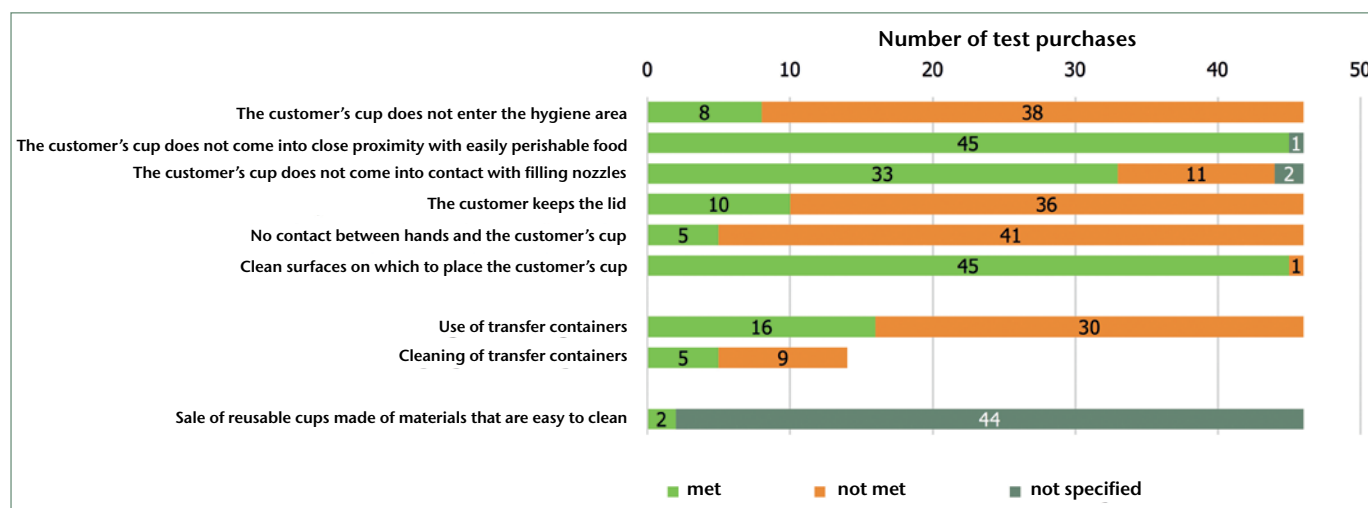


Fig. 2: Fulfillment of single criteria for the dispensing of hot drinks served by staff in cups brought in by the customer (46 test purchases)

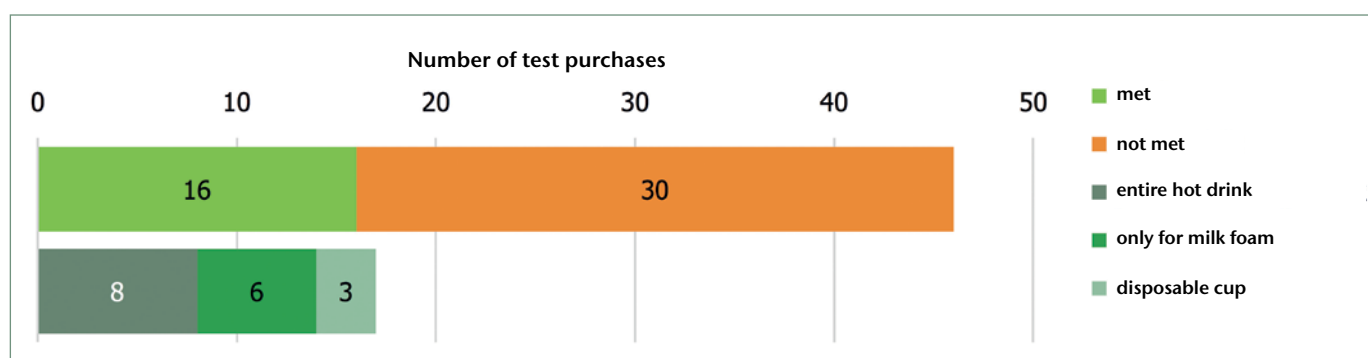


Fig. 3: Fulfillment of the criteria for dispensing of hot beverages by staff into cups brought in by the customer when using transfer containers for different components (46 test purchases)

Among the 46 businesses in which hot drinks were served by staff into the customer's own cup, 16 had < 16 branches, 10 had 25–43 branches and 20 had > 250 branches.

The results of the 46 test purchases with staff service are shown in ♦ Figures 2 and 3. In 38 of the 46 businesses in which hot drinks were dispensed into the customer's own cup by staff, the cup was taken behind the counter for filling, meaning that the cup entered the hygienic area. In none of these cases was the coffee machine or the area where the customer cup is placed in close proximity to unpacked easily perishable food or areas where such food is handled. Contact between the customer's own cup and the coffee machine's filling device was prevented in 33 of the 46 filling processes that took place. The use of transfer containers and cup holders or trays can prevent both contact with operational equipment and contact with the staff's hands. No cup holder or tray was used in any of these test purchases. One or more transfer containers were used in 16 test purchases, including the three disposable cups used by staff as mentioned above. Six times, the transfer container was used exclusively for the milk foam needed for the specific type of coffee. In those cases, the coffee component was filled directly into the cup brought in by the customer, in one case using a disposable cup. A total of 14 transfer containers were used. After use, four of these were stored with the used dishes and one was rinsed with clean water. For nine of the

transfer containers, the assessment was that it was unlikely that the requirement to clean them after each use was complied with. Five containers were already wetted with milk before they were used and three containers were placed next to the coffee machine after use and were probably used again one or more times. One of the nine transfer containers was used again immediately for the following customer without prior cleaning.

If no transfer container is used, the server's hands come into contact with the customer's own cup. This was the case in 41 of the 46 test purchases served by staff (the 30 test purchases where no transfer containers were used and the 11 test purchases where transfer containers were used but the server's hands still came into contact with the customer's own cup). In ten test purchases, the purchaser was asked to take the lid off themselves and keep it. Where there was contact with the server's hands, no measures such as hand washing or the wearing of gloves could be observed. The areas



that came into contact with the customer's cup appeared clean upon visual inspection in almost all cases.

Only two of the 50 different businesses visited had reusable cups for sale (ceramic cups with silicone lids).

Businesses with over 250 branches appeared to perform better in the tests that were carried out. In these businesses, contact between the customer's cup and the staff and the cup and the coffee machine's filling nozzles tended to be less frequent and transfer containers tended to be used more frequently.

## Discussion and conclusions

Single-use cups for hot drinks are increasingly being seen as problematic for a variety of reasons. For instance, they account for a large volume of waste, they are often not disposed of in the correct way and the cost of their disposal continues to be covered at least partially by public waste management despite the polluter pays principle. The reusable cup system practiced here—using reusable cups brought in by consumers—has the potential to be a viable eco-friendly alternative under certain conditions and with very high rates of reuse [1], and indeed it is already being used. Guidelines for the hygienic filling of consumer's own cups have been available from Environmental Action Germany since 2016 and from Food Federation Germany since 2018 [2, 3] and to the best of the authors' knowledge, this study is the first time compliance with these guidelines has been studied.

The present study was limited to 50 randomly selected businesses selling hot drinks in rural areas of Baden-Württemberg and can therefore only provide some initial insights. Further studies with larger case numbers that would allow stratified evaluations are warranted. Nevertheless, it is possible to draw a cautious conclusion: filling customers' own cups with hot drinks at the customer's request is already widely practiced. In some cases, there was room for improvement in terms of hygienic filling and dispensing of hot drinks into customers' own cups by service staff, who would benefit from more targeted training.

The filling of cups brought in by the customer results in additional work, since there are special requirements that must be met. However, as environmental awareness is increasing, meeting customer demand for this could give businesses a competitive advantage. It is possible to balance the requirements of food safety and hygiene on the one hand and saving resources on the other hand with a very manageable additional investment in personnel.

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### Conflict of Interest

The authors declare no conflict of interest.

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## References

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1. Kauertz B, Schlecht S, Markwardt S et al.: *Untersuchung der ökologischen Bedeutung von Einweggetränkebechern im Außer-Haus-Verzehr und mögliche Maßnahmen zur Verringerung des Verbrauchs. Umweltbundesamt Texte (2019); 29.*
2. Lebensmittelverband Deutschland e. V.: MERKBLATT „Coffee to go“-Becher: Hygiene beim Umgang mit kundeneigenen Bechern zur Abgabe von Heißgetränken in Bedienung oder Selbstbedienung. 2. ed., Berlin: 2019. URL: [www.bll.de/download/merkblatt-coffee-to-go.pdf](http://www.bll.de/download/merkblatt-coffee-to-go.pdf) (last accessed on 05 August 2019).
3. Deutsche Umwelthilfe e. V.: Fact-Sheet – Hygieneaspekte Coffee to go-Mehrwegbecher Deutsche Umwelthilfe e. V. [www.duh.de/uploads/media/Coffee-to-go\\_Fact\\_Sheet\\_Hygiene\\_190716\\_01.pdf](http://www.duh.de/uploads/media/Coffee-to-go_Fact_Sheet_Hygiene_190716_01.pdf) (last accessed on 05 August 2019).

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