Organic Food in Public Catering: How the Danish Organic Cuisine Label May Maintain Organic Food Production in the Longer Term

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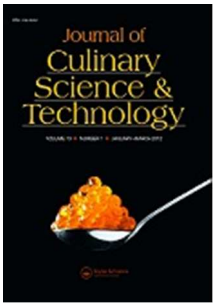

Organic food in public catering: How the Danish Organic Cuisine Label may maintain organic food production in the longer term

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Organic food in public catering: How the Danish Organic Cuisine Label may maintain organic food production in the longer term

The aim of this mixed-method longitudinal study was to explore the role the Danish Organic Cuisine Label plays in maintaining organic food production in public catering. Baseline, end-point and 1-year-follow-up were compared among 622 kitchens participating in organic conversion projects. Numbers of certified kitchens increased from baseline to end-point ($p<0.001$). This level was maintained at follow-up. Further, certified kitchens were found to increase their use of organic food at 1-year follow-up ($p=0.012$) whereas non-certified kitchens did not. The study identified motives and barriers behind acquiring the label. In conclusion, the Organic Cuisine Label contributed to maintaining organic food productions.

Keywords: Organic food conversion; public procurement; Organic Cuisine Label

Running head: The Danish Organic Cuisine Label in public catering

Introduction

Organic procurement in public kitchens has a long history over several decades of implementation and development in Denmark, and public awareness of this area has been increasing over time (ICROFS, 2015). More recently, the Danish Organic Action Plan 2020 was launched in 2012, and updated in 2015, to establish political support for organic food conversion projects targeting public kitchen workers (Ministry of Environment and Food of Denmark, 2015). Organic food conversion projects have been described as educational programs with several steps, in which kitchen workers learn strategies to increase the share of organic food purchased within the existing food budget despite the additional cost of organic food products (Thorsen & Jensen, 2016; Mikkelsen & Sylvest, 2012). Besides buying organic food, these strategies include using more fruit and vegetables, limiting meat consumption, using less processed food products, buying local and seasonal food products and reducing food waste (Sørensen et

al., 2015).

Evidence on the effects of organic food conversion in public kitchens includes indications of food waste reductions (Thorsen, Sabinsky & Trolle 2014), a healthier meal composition in favour of plant-based foods and a dietary pattern more in line with food-based dietary recommendations (Mikkelsen et al., 2006; Denver & Christensen 2015). These results are in agreement with recent findings from a longitudinal study on the effects of organic food conversion projects, reporting an emphasis on kitchen worker training in nutrition guideline application (Sørensen et al., 2016a). Regarding kitchen worker physical and psychological well-being during an organic food conversion, no significant negative effects on wellbeing have been found, but rather positive changes were identified in how kitchen workers perceived food quality and their motivation for work (Sørensen et al., 2016b).

The longitudinal study on the effects of organic food conversion projects reported a significant increase in organic food percentages among 622 Danish public kitchens with a difference of 24 percentage points over 1.5 years (Sørensen et al., 2016a). The measurement method used was the Organic Cuisine Label method, which was developed by the Danish Veterinary and Food Administration in 2009 for official organic procurement registrations (Danish Veterinary and Food Administration, 2014). This method is based on procurement invoices and has been found to result in valid measurements. Organic procurement levels are divided into four percentage intervals: 0-30% (no label), 30%-60% (bronze label), 60%-90% (silver label) and 90%-100% (gold label) (Sørensen et al., 2015; Danish Veterinary and Food Administration, 2014).

The Organic Cuisine Label is a scheme managed and controlled by the Danish Veterinary and Food Administration with relevance to all public and private large-scale

kitchens and institutions as well as restaurants in Denmark. The label scheme was developed as part of a governmental initiative to promote organic production and consumption on market-driven conditions, as well as in response to the growing need for consumer-oriented documentation of organic food production experienced by large-scale food establishments (Hillgrén et al., 2016; Kortesoja et al., 2018). The Organic Cuisine Label can be awarded to caterers applying for it, if they are able to document calculations of an organic food percentage within one of the three percentage intervals using invoices from suppliers. This organic food percentage level will then be monitored through annual inspections and audits of purchase records by the Danish Veterinary and Food Administration (Danish Veterinary and Food Administration, 2014). The Organic Cuisine Label as a scheme has received attention internationally in terms of sustainable food systems and consumer information, and has recently been implemented in Norway and Germany by the private certification schemes Debio and Bioland, respectively (Hillgrén et al., 2016; Kortesoja et al., 2018; Matvalget, 2017; Danish Veterinary and Food Administration, 2018).

In Norway, "Valørmerkerne" was implemented by the advisory service called "Matvalget" in 2013, but differs from the Organic Cuisine Label by including food markets in their target group and by requiring a minimum of 15% organic food production or turnover regarding food markets (Debio, 2017). The German labels recently implemented by Bioland are similar to the Organic Cuisine Labels in terms of percentage intervals but unlike the Danish labels, the eligibility of the Bioland labels is based on a point-system. For public kitchens to achieve a Bioland label, they have to collect points and the more Bioland products of local origin a kitchen includes, the more points they receive (Bioland, 2017; Organic-market.info, 2018). Both the Norwegian and German labels are fairly new compared with the Organic Cuisine Labels, thus no

reports are available their acceptance or influence. Other European countries have also shown interest in implementing the Organic Cuisine Labels, including France and Estonia, but so far, measured effects of organic label schemes outside of Denmark remain to be seen (Danish Veterinary and Food Administration, 2018).

Implementing the Organic Cuisine Labels in public kitchens during organic food conversion projects has been suggested to anchor and motivate further organic food production (Sørensen et al., 2016a; NIRAS, 2014). However, there is currently no research supporting this argument because the one existing longitudinal study on the effects of organic food conversion projects did not include measurements taken beyond 1.5 years among the 622 participating kitchens. Hence, the sustainability of the organic conversion projects in public kitchens and the suggested anchoring and motivational effects of applying the Organic Cuisine Label are still unknown.

The objectives of this study are therefore to explore official Organic Cuisine Label certifications among 622 public kitchens that participated in the Danish Organic Action Plan 2020 from 2013 to 2015, and to measure the effectiveness of the Organic Cuisine Label certifications on the kitchens' ability to maintain organic food production in the longer term. A further objective is to investigate public kitchen workers' motives behind either acquiring the Organic Cuisine Label or not.

Methods

Study design and data collection

This longitudinal study applied a mixed-method research design with both qualitative and quantitative data collection methods within a study population of 622 public kitchens that completed organic food conversion from 2013 to 2015. The kitchens

represent eight different kitchen types according to the classifications by the Danish Diet and Nutrition Association: childcare, school, afterschool, canteen, elderly, hospital, central kitchen or residential institution (Sørensen et al., 2016a; Christiansen & El-Salanti 2000). Results on distribution of public kitchen types and specific organic food percentages in the public kitchens in 2015 have been published previously (Sørensen et al., 2016a).

Data collection was conducted during two stages. The first stage included collecting official certifications of the Organic Cuisine Label among all 622 public kitchens participating in the Danish Organic Action Plan 2020 from 2013 (baseline) to 2015 (end-point), and again in 2016 (1-year follow-up). The second stage involved representative samples of Organic Cuisine Label certified kitchens in one group and non-certified kitchens in another group, two subsamples selected from the total of 622 kitchens for a semi-structured telephone interview in 2016. The purpose was to gather self-reported data on the actual use of organic procurement as well as qualitative data on the motives behind Organic Cuisine Label certifications and future expectations towards organic procurement. First, a total of 76 public kitchens not certified with the Organic Cuisine Label were selected to represent different kitchen conversion projects, kitchen types and organic procurement levels at endpoint measurements in 2015. A total of 14 of the selected kitchens were excluded due to the fact that they had closed, had merged with another kitchen or did not wish to participate, which left a total of 62 participants to be interviewed. Subsequently, 72 public kitchen certified with the Organic Cuisine Label were selected to match the non-certified group according to the same selection criteria listed above, of which a total of 60 could be included in the study. The combined number of public kitchens participating in the telephone interview survey was 122.

The study was performed in accordance with the ethical standards of the Helsinki Declaration of 1964, as revised in 2013 (World Medical Association, 1974).

Certification with the Organic Cuisine Label

The development of official Organic Cuisine Label certifications among all the 622 participating public kitchens was tracked using data from the Danish Veterinary and Food Administration official certification site (Danish Veterinary and Food Administration, 2009) and verified through personal contact with the official certification office. Official certifications were obtained at three points in time: at the beginning of the conversion project period (baseline), at the end of the conversion period (end-point) and again at 1-year follow-up. The 622 public kitchens were grouped into four categories in accordance with the relevant percentage intervals for the Organic Cuisine Label for each measurement point: 1) non-certified and certified kitchens with the following levels 2) gold, 3) silver or 4) bronze.

Motives behind acquiring the Organic Cuisine Label

Two of the authors interviewed the kitchen managers of the selected public kitchens by telephone using a semi-structured interview guide. Two slightly different interview guides were developed to target either public kitchens certified or not certified with the Organic Cuisine Label. This was done in an effort to allow for potential different reasoning behind acquiring or not acquiring the label, resulting in variations in the interview guides and the following coding. Each telephone interview lasted for approximately 10 to 15 minutes and addressed three main themes: 1) Current organic food procurement and recent developments, 2) Future ambitions for organic food production, 3) Organic Cuisine Label and future development.

Notes were taken during the interviews and the responses were coded afterwards by one of the authors using Template Analysis in Nvivo version 10. Coding of the interviews and the comparative analyses were conducted separately for each group. Interview codes were initially generated based on the interview guides and later elaborated upon following data examination as listed in Table 1, where codes from both interview guides have been included and where the word "reasons" has been used to cover motives/barriers.

Organic food production in the longer term

Self-reported organic food percentages from the non-certified public kitchen sample (n=62) and the certified public kitchen sample (n=60) were combined with previously published data to calculate potential differences in actual organic procurement between end-point measurements and 1-year follow-up (Sørensen et al., 2016a). Potential differences in organic food percentages were calculated within each group.

Statistical analysis

Non-parametric statistical significance testing of potential differences in specific organic food percentages within the public kitchen samples was made using Wilcoxon signed rank test (paired) along with 1st and 3rd quartiles, as data could not be considered normally distributed. Comparisons were made using chi-squared testing where data were proportions.

Statistical analyses were performed using RStudio statistical software package version 0.98.1103 (R Inc., Boston, Massachusetts, USA).

Results

Development over time

Official certifications of the Organic Cuisine Label among the 622 public kitchens participating in the Danish Organic Action Plan 2020 from baseline to end-point and at 1-year follow-up according to the four categories are illustrated in Figure 1. Overall, 553 (89%) of the 622 public kitchens were not certified with any of the three labels at baseline. This number had decreased to 279 (45%) by end-point measurements and at 1-year follow-up, 240 (39%) of the public kitchens were not certified with an Organic Cuisine Label. Bronze label certifications increased from 18 (3%) at baseline to 102 (17%) at end-point, and remained essentially unchanged at 100 (16%) at 1-year follow-up. Silver label certifications among the 622 public kitchens increased from 38 (6%) at baseline to 183 (29%) at end-point and finally to 221 (35%) at 1-year follow-up. Similarly, gold label certifications increased from 13 (2%) at baseline to 58 (9%) at end-point and reached 61 (10%) at 1-year follow-up (Figure 1). The differences in proportions of Organic Cuisine Label certifications within the four categories from baseline to end-point were significant at $p<0.001$, but the differences in proportions from endpoint to 1-year follow-up were not (Figure 1).

Organic food production in the longer term

Results of median (interquartile range) organic food percentages among the selected subsamples of interviewed public kitchens from end-point measurements were 64 (55-77) among the public kitchens certified with the Organic Cuisine Label and 55 (42-65) among the public kitchens not certified.

The change in organic food percentages from endpoint to 1-year follow-up in the

sample of public kitchens (n=60) certified with Organic Cuisine Label was significant at p=0.012, with an increase from a median (interquartile range) of 64 (55-77) to 68 (53-84) (Table 2). Oppositely, the median (interquartile range) organic food percentages in the sample of public kitchens (n=62) not certified with Organic Cuisine Label decreased non-significantly from 55 (42-65) at end-point to 54 (32-76) at 1-year follow-up (Table 2).

Motives behind acquiring the Organic Cuisine Label

The interviews of public kitchen workers from the subsample of public kitchens not certified with the Organic Cuisine Label (n=62) and from the sample of certified public kitchens (n=60) uncovered different perceptions of the label. The overall motive behind acquiring the Organic Cuisine Label expressed by the majority of respondents from the sample of public kitchens certified with the label focused on kitchen workers' own motivation for obtaining the label. As one kitchen worker elaborated, the Organic Cuisine Label could be considered as the reward kitchen workers receive in return for all of their efforts. Several respondents also mentioned the marketing value of the label, representing a quality mark for the public. This motive was closely followed by requests at the municipal level, where municipalities asked for the implementation of the label.

Regarding the sample of public kitchens not certified with the Organic Cuisine Label, four out of five reported a current organic food percentage of 30% or above and these kitchens would therefore have been eligible for one of the three labels. The two main barriers to acquiring an Organic Cuisine Label expressed by the majority of respondents within this sample were lack of time and the burden of documentation. Most kitchen workers wanted to comply with the documentation requirements of the Organic Cuisine Label but could not find time because of staff shortages and economic supervision of

the institutional management or the municipality. A kitchen worker in a childcare institution clarified that she would rather spend the extra time with the children than performing additional administrative work behind a computer.

During the interview, some respondents in the non-certified sample also introduced a shared perception within the public kitchen network in terms of more frequent and stricter control visits by the Danish Veterinary and Food Administration as a consequence of acquiring one of the Organic Cuisine Labels, which prevented them from applying for the label. The same perception was identified among respondents from the sample of public kitchens certified with the Organic Cuisine Label, where some respondents reported acquiring a bronze or silver label rather than gold to minimise the extent of inspections despite gold label eligibility within the public kitchen.

Future expectations for organic food production

When asked about their future expectations for organic food production in the public kitchen, the vast majority of respondents from both public kitchen samples stated intentions of maintaining the current level of organic procurement. The main barriers identified preventing a further increase in the organic food percentage included economic restrictions, lack of time to explore new organic alternatives and organic food quality limitations. One kitchen worker explained that she would rather support Danish conventional food production than ordering organic products from the other side of the world. Several kitchen workers addressed the problems with documenting organic food procurement from local farmers or from the institution's own organic vegetable garden.

Respondents who expressed intentions of increasing the organic food percentage in the future primarily mentioned municipality requests of a higher level in the future and

kitchen workers' own motivation for acquiring the Organic Cuisine Label as the two main underlying motives.

Future expectations for the Organic Cuisine Label

In terms of future ambitions toward the Organic Cuisine Label among the certified public kitchen sample, a few kitchens reported plans to withdraw from the certification due to missing assistance from suppliers in relation to organic food percentage calculations. However, the vast majority planned to maintain their current certification. Among the non-certified public kitchens sample, around one-fifth expressed plans to acquire the label, where the majority of the respondents dismissed plans of obtaining any of the three categories of label. The main reasons stated behind this were time restrictions, problems with fulfilling the perceived documentation and calculation requirements related to the label, along with the lack of knowledge about these requirements. A few respondents also highlighted problems regarding the values connected to the label with one kitchen worker explaining that the organic food percentage in her public kitchen would be eligible for a gold label but acquiring it might be considered boasting within the community.

Regarding public kitchens from both sample sets planning to maintain or apply for one of the three Organic Cuisine Labels in the future, more than one-third mentioned positive values related to the label to explain these plans. Several respondents expressed views of the label such as high food quality, views which would then also be transferred to the public kitchen and the institution. But also potential future guidelines by the municipality seemed to influence the kitchen workers' plans. A kitchen worker specifically said that she knew of future municipality guidelines for the label and did not want to apply for the label before the municipality would demand it.

Discussion

By tracking official Organic Cuisine Label certifications among the 622 public kitchens that participated in the Danish Organic Action Plan 2020 from 2013 to 2015, results from this mixed-method study show an increased number of certifications from baseline to end-point ($p<0.001$). This level was sustained at the 1-year follow-up. Regarding the longer term effect on the actual use of organic food, a small but significant increase ($p=0.012$) in the median organic food percentage was identified among a subgroup of public kitchens certified with the Organic Cuisine Label between end-point and 1-year follow-up, unlike public kitchens not certified with the label.

Overall, the results illustrate a trend of increasing numbers of public kitchens acquiring one of the three Organic Cuisine Labels and further, certified public kitchens also wish to acquire higher labels over time. The results on the actual use of organic food also suggest that public kitchens certified with one of the three Organic Cuisine Labels are more likely to maintain or increase their level of organic procurement in the longer term compared with public kitchens not certified with the label. However, when interpreting these results, it is important to note that the median organic procurement levels measured at end-point within the two public kitchen samples are quite similar and both are above 50%. Also, according to self-reported organic food percentages for the 1-year follow-up measurements, more than four out of five of the non-certified public kitchens could be eligible for one of the three Organic Cuisine Labels, illustrating how the use of organic food has been largely sustained, also among kitchens not certified with the Organic Cuisine label.

From the interviews, it seems clear that public kitchens are placed within social structures, in which resource allocations for food production are vulnerable to changes

at several levels such as political decisions at municipal level, wishes by parents and other citizens outside the institution, food supply challenges or reorganisations within the institution. Foreseeable changes such as budget reductions or municipal requests for label certification levels are therefore likely to influence kitchen workers' future expectations for the organic food production and label certification whether they are currently certified or not. However, when comparing the two samples, the certified public kitchens expressed stronger views of maintaining their organic food procurement in order to keep their label regardless of future changes, and may therefore have a more stable organic procurement compared with non-certified kitchens. The very few certified public kitchens mentioning a potential withdrawal from the label scheme in the future point to a lack of assistance from food suppliers in calculating the organic food percentage as an explanation for this development.

The main motives expressed behind acquiring one of the Organic Cuisine Label relate to kitchen workers' own motivation and requests by the municipality, where the main barriers include time restrictions, heavy documentation requirements and lack of knowledge about the Organic Cuisine Label. The majority of respondents from both samples seem to express willingness towards the label but they seem to differ in how they perceive the workload related to obtaining and maintaining the label. One interpretation might be that the non-certified public kitchens lack knowledge on the details of earning the label and therefore have a tendency to perceive the certification process as too time and resource demanding.

Another interpretation involves potential differences in experience with organic food production between the two samples. Expressed views from respondents in both groups indicate that more certified public kitchens had been using organic food before the

Organic Cuisine Label had been introduced compared with the non-certified public kitchens. This additional experience with organic food production may have enabled these kitchens to manage organic food production alongside documentation requirements better. An overall finding from the interviews also relate to the quite different interpretations conveyed by the kitchen workers in terms of the values connected to the Organic Cuisine Labels. Where positive associations regarding signalling the level of food quality and awareness seemed to be agreed upon by the majority, a few respondents also mentioned 'boasting' in a negative way to describe the label and others specified local and seasonal food products to be of top priority over the label and organic food. These views seem to support the need for improved cooperation with food suppliers and information targeting kitchen workers to address the problems faced by many non-certified public kitchens, and thereby to achieve the full potential of the label.

Previous research in this area is sparse, but one qualitative study on motives towards organic procurement, including interviews with public kitchen workers from 10 different kitchens, also found motives such as kitchen workers' own motivation and political agendas to be important (NIRAS, 2014). This study did not focus on motives behind acquiring the Organic Cuisine Label, but comments from the respondents also compared the label to an award, which is similar to the results from the present study. The previous qualitative study also highlighted the importance of food supplier cooperation and active knowledge sharing about the Organic Cuisine Label to ensure successful implementation of organic procurement, which also relates to the concerns expressed here. Another quantitative study that used an online questionnaire included more than 1000 respondents, which were representative of the Danish population based on gender, age, geography and education, to research population awareness of the

Organic Cuisine Label (Mørk, Tsalis & Grunert, 2014). The study found overall little awareness of the labels with around 60% of the respondents having never seen the Organic Cuisine Labels before (Mørk, Tsalis & Grunert, 2014). Both of these findings call for more information about the labels and the application process targeting public kitchen workers.

Regarding the initiatives to improve cooperation between food suppliers and public kitchens, a project on smart procurement has been implemented from 2013 to 2016 (Madkulturen, 2016). The aim of the project has been to provide guidance, counselling, tools and case-stories to inspire and promote organic and local food products, targeting all actors within public procurement including politicians, municipalities, kitchens, suppliers and producers (Pedersen & Jensen, 2016). A qualitative interview study among nine municipal representatives of public procurement evaluated the experienced user satisfaction with the project and found overall support and an ongoing need for it, but also identified barriers to organic and local procurement in terms of political support at higher levels (Pedersen & Jensen, 2016). In light of the findings from the present study, it may be relevant to recommend implementing renewed efforts in line with this project to ensure wide collaboration across all stakeholders involved in public procurement. This might also enable more efficient and transparent strategies for documenting the level of organic procurement for the Organic Cuisine Label by dividing the specific calculation responsibilities between the stakeholders where appropriate. However, it will be important to ensure that any potential future improvements to the current official documentation and certification process will not carry negative consequences to the label credibility. The Organic Cuisine Label is closely related to the Danish 'Red Ø' which is one of the most recognisable and credible labels in Denmark according to Danish consumers (Danish Competition and Consumer

Authority, 2013; Danish Agricultural and Food Council, 2017), a status worth guarding.

A limitation of the study includes the reporting of the level of organic food percentages collected at the 1-year follow-up, due to the fact that is is based on self-reported information, opening up for potential recall bias especially among the non-certified kitchens. A previous study has shown how self-reported estimations of the organic food percentage by public kitchens who do not apply the calculation method behind the Organic Cuisine Label tend to be overestimated (Sørensen et al., 2015). Certified public kitchens may also have an easier time recalling their exact current organic food percentage compared with non-certified public kitchens due to the calculation sheet exercises they complete on a regular basis to fulfil Organic Cuisine Label requirements. The difference in organic food percentages between the two groups (i.e. certified and non-certified) might therefore have been higher than indicated by the present study. In addition, control kitchens that did not participate in the Danish Organic Action Plan 2020 were not included, which limits the possibility to infer causality regarding the effect of the Organic Cuisine Label on organic procurement in the longer term. In relation to the semi-structured interviews, it would have been ideal to include all 622 public kitchens in order to collect indications of the specific organic food percentage within each kitchen.

With that said, the population sample included for the quantitative analysis was 622 public kitchens and 122 for qualitative analysis, which can be considered a sufficient sample size to explore motives and barriers behind acquiring the Organic Cuisine Label. Further, a strength of the study relates to the matching procedure conducted for the sample selection of the qualitative analysis, which was introduced in an effort to sample as similar populations as possible for the two groups. The overall design, including both

quantitative and qualitative methods, is in addition a strength of the study. The quantitative evaluation uncovered a trend in Organic Cuisine Label development and important results on longer term effects on specific organic food percentages, where the qualitative analysis revealed equally important motives and barriers behind the use of the label. These motives and barriers will be central to address in future initiatives aiming to promote further label certifications by all stakeholders involved in procurement.

Conclusion

To conclude, the present study found an increased number of certifications with the Organic Cuisine Label among the total 622 public kitchens from baseline to end-point ($p<0.001$) and this level was sustained at 1-year follow-up. A significant increase in median organic food percentages was found in the certified public kitchen sample ($n=60$), but a small non-significant decrease ($p=0.053$) was found in the sample of non-certified public kitchens ($n=62$) at the 1-year follow-up. Hence, the results indicate a longer term effect of the Organic Cuisine Label in terms of contributing to a maintained or increased organic food percentage within the public kitchens. Regarding motives behind acquiring the Organic Cuisine Label, kitchen workers' own motivation and requests by the municipality were expressed by the majority of the respondents, where common barriers were time and resource restrictions along with laborious label documentation requirements. Central recommendations for future initiatives promoting further certification of the Organic Cuisine Label are therefore to provide more information about the label and application process, facilitating stronger collaboration with food suppliers and adjusting documentation requirements to minimise the effort where possible.

Please see separate file for tables and figure.

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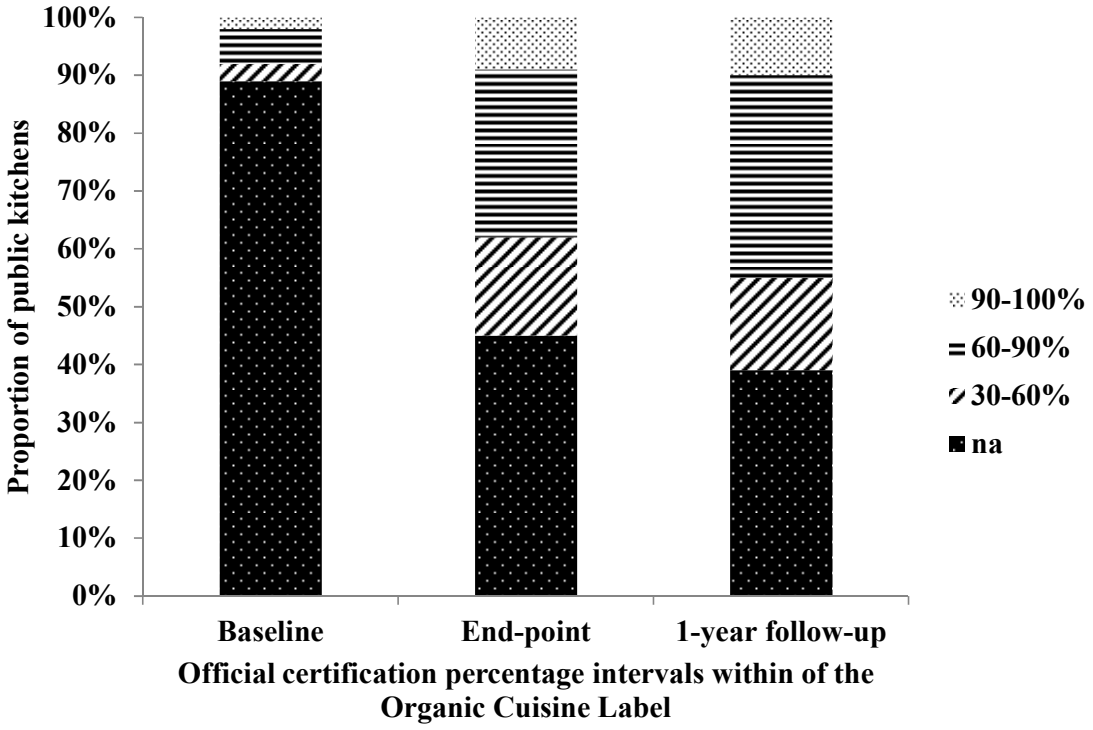

Figure 1. Official Organic Cuisine Label certifications in public kitchens from the Danish Organic Action Plan 2020 measured at baseline, end-point and 1-year follow-up (n=622)

*Chi-squared significance test of proportions between measurements at baseline and end-point: $p<0.001$

*Chi-squared significance test of proportions between measurements at end-point and 1-year follow-up: $p=0.549$

Table 1. Telephone interview coding of interviews among selected subsamples of public kitchens certified and not certified with the Organic Cuisine Label

Level 1	**Level 2**	**Level 3**
(**1**) Current organic food procurement and recent developments	(**1.1**) Primary reasons for increase in organic food procurement	(**1.1.1**) Request from the municipality
		(**1.1.2**) Kitchen workers' own motivation
		(**1.1.3**) Request from institution or others outside the institution
	(**1.2**) Primary reasons for decrease in organic food procurement	(**1.1.4**) Kitchen network
		(**1.1.5**) Organic Cuisine Label
		(**1.2.1**) Kitchen workers lack of motivation
		(**1.2.2**) Not requested from institution or others outside the institution
		(**1.2.3**) Organic Cuisine Label
(**2**) Future ambitions for organic food production	(**2.1**) More organic food	(**2.1.1**) Request from the municipality
		(**2.1.2**) Aim at higher label
		(**2.2.1**) Financial situation
	(**2.2**) No change	(**2.2.2**) Supply of organic products
		(**2.2.3**) No documentation for local organic product
	(**2.3**) Less organic food	(**2.3.1**) Structural changes
		(**2.3.2**) Financial situation
(**3**) Organic Cuisine Label and future development	(**3.1**) Primary reasons for acquiring the label	(**3.1.1**) Request from the municipality
		(**3.1.2**) Request from the kitchen workers
		(**3.1.3**) Request from institution or others outside the institution
	(**3.2**) Primary reasons for not acquiring the label	(**3.2.1**) Insufficient organic food procurement
		(**3.2.2**) Lack of time to apply
		(**3.2.3**) Heavy documentation load
		(**3.2.4**) Lack of knowledge about the label
	(**3.3**) Future ambitions for the Organic Cuisine Label	(**3.3.1**) No desire for the label
		(**3.3.2**) Keeping the label

Table 2. Changes in reported organic food percentages between end-point measurements and 1-year follow-up in the two interviewed subsamples of public kitchens either certified with the official Organic Cuisine Label (n=60) or not certified with the label (n=62)

	End-point[a]		**1-year follow-up**		**Difference**		**P-value**[b]
Quartiles	Median	(IQR)	Median	(IQR)	Median	(IQR)	
Registered	64	55-77	68	53-84	2	-1-8	**0.012**
Non-registered	55	42-65	54	32-76	0	-3-12	0.053

[a]Data obtained from previous certifications published in Sørensen et al. 2016

[b]Wilcoxon signed rank test, paired (RStudio)