UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

Nutrition Policy Institute

CDFA Healthy Stores Refrigeration Grant Program Evaluation Final Report

Prepared for:
The California Department of Food and Agriculture

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Executive summary

Background

Lack of refrigeration equipment in corner stores is reported as a leading barrier to stocking fresh fruits and vegetables. The California legislature funded the Department of Food and Agriculture (CDFA) to offer a Healthy Refrigeration Grant Program, providing grants to corner stores in food resource poor neighborhoods to purchase refrigeration units in order to increase stocking of California-grown fruits and vegetables.

Methods

We used a mixed methods approach to understand the opportunities, challenges, and outcomes from the program, including:

1) Pre/post surveys of participating stores that assessed produce procurement, stocking, sales, and produce characteristics
2) Pre/post in-depth interviews with a subsample of storeowners to provide perspective on their experiences with the program
3) Surveys of small cross-sectional samples of customers at stores where in-depth interviews were conducted to gather information about their shopping experiences and produce purchases before and after the refrigerators were installed

Results

Of the 51 storeowners that completed baseline and follow-up surveys, 97% reported having a positive experience with the grant program. One storeowner remarked, "It was excellent. It was painless, easy and simple." From baseline to follow up, fewer storeowners reported lack of refrigeration as a barrier to stocking fresh produce. At follow up, the majority of storeowners reported an intention to continue stocking the CDFA refrigerator with whole fresh fruits and vegetables, and reported an intention to increase the quantity and variety of produce they sell. Customers reported purchasing higher quantities of fruits and vegetables at follow up. Storeowners reported mixed impacts of the CDFA refrigerator on sales, but data collection occurred during the coronavirus pandemic, which affected produce sales and prices.

Conclusion

Providing funds to corner stores in food resource poor neighborhoods to purchase refrigerators appeals to stores and leads to perceived increased availability of fresh produce. More robust evaluation conducted outside of a major disruption to shopping behaviors, health, and food system supply chains, can further illuminate the outcomes of the Healthy Refrigeration Grant Program.

Introduction

In 2018, the California legislature provided funds to the California Department of Food and Agriculture (CDFA) for the Healthy Stores Refrigeration Grant Program. The goal of the program was to increase the availability of California-grown specialty crops (mainly fruits, vegetables, and nuts) in neighborhood food retail environments in areas of the state that lack adequate access to fresh produce. The program provided $4.5 million in grant funding to small retail outlets to purchase energy-efficient refrigeration units to be used for stocking California (CA)-grown fresh and minimally processed fruits, vegetables, and nuts. Grant awardees included both individual stores and community-based organizations, which primarily consisted of nonprofits, cities, and counties that applied for the grant on behalf of multiple stores.

CDFA contracted with the Nutrition Policy Institute at the University of California, Division of Agriculture and Natural Resources to assess the opportunities, challenges, and outcomes of the refrigeration grants in participating stores. This report synthesizes the findings from that evaluation effort. The report provides information about the relationship between stores obtaining refrigeration units and outcomes related to (1) store environments and produce sales, (2) storeowner perceptions and experiences, and (3) customer perceptions and experiences.

The objective of this evaluation study was to answer the following questions:

1) How did the CDFA refrigeration program affect how stores select, stock, and sell produce generally, and CA-grown produce specifically?
2) What was the experience of storeowners with the CDFA Refrigeration Grant Program?
3) How did the CDFA refrigeration program affect the shopping habits, attitudes, and experiences of customers at participating stores?

Background

Multiple studies have documented the need for healthy retail environments and the lack of healthy options available in many corner stores. Larson, Story, & Nelson (2009) found increased access to supermarkets and limited access to convenience stores was associated with healthier diets. Ortega et al. (2015) found perceptions of the quality and healthfulness of food in local corner stores were largely negative among community members. Disparities in the types of stores available in neighborhoods also make providing healthy options in corner stores a health equity issue (Larson, Story, & Nelson, 2009). For example, Gosliner et al. (2018) found that convenience stores in economically disadvantaged California neighborhoods offer a lower variety of more expensive, poorer-quality produce than do other types of grocery stores.

Many efforts across the U.S. have aimed to improve the healthfulness of corner store offerings, often with positive results. Ayala et al. (2013) found that providing four North Carolina corners stores with staff trainings, marketing materials, and refrigeration units led to increased fresh produce availability and customer produce consumption. Cavanaugh et al. (2014) found that providing 50 Philadelphia corner stores with nutrition education, marketing materials, and store equipment (about half received refrigeration units) was associated with increases in produce availability at the stores.

However, some studies find healthy corner store interventions are not associated with desired outcomes. Ortega et al. (2015) found no effect on produce purchase or consumption after implementing an intervention in three corner stores in Los Angeles that provided stores with refrigeration units, nutrition education, marketing materials, and store upgrades (e.g., new signage, fresh paint, updated store layout).

Some studies (Steeves et al. (2020), D'Angelo et al. (2017), and Haynes-Maslow et al. (2018)) have found that corner store owners are willing to try healthy retail initiatives, including stocking more fresh produce, but that they anticipate barriers, such as sourcing, economic viability, and customer demand.

This evaluation study builds upon the existing literature and aims to inform CDFA about the experiences and effects of participating in the Healthy Refrigeration Grant Program among participating stores and shoppers. The study also illuminates the challenges that arose, and describes the lessons learned that can inform the future of the program and other similar efforts.

Methods

Overall approach

A pre/post mixed methods evaluation study design was employed. Both quantitative and qualitative data were collected before and after CDFA refrigerators were installed by grant program participants.

The California Department of Food and Agriculture (CDFA) 2018 Healthy Stores Refrigeration Grant Program recipients were small-scale stores—referred hereafter as corner stores—as well as non-profit organizations, cities and/or counties that applied on behalf of stores. The program was made available to stores located in all counties in California, but priority was given to stores located in low-income[1] and/or low-access[2] areas (California Department of Food and Agriculture, 2019). Funding for the program was distributed in two rounds. The analysis in this report includes stores from both rounds of funding (referred to as Round 1 and Round 2).

All participating stores were invited to complete storeowner surveys. A subsample of 10 stores (referred to as the "initial in-depth subsample") was selected to participate in storeowner interviews, store environmental assessments, and customer intercept surveys.

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[1] A census tract in which the income of at least 20% of the population is at or below the federal poverty level by family size, or the median family income is at or below 80% of the median family income of surrounding census tracts.

[2] A census tract in which there are significant barriers to accessing a supermarket or large grocery store, which may include, but are not limited to, a census tract where at least 500 persons or 33% of the population live more than one mile, for nonrural areas, or more than 10 miles, for rural areas, from a supermarket or large grocery store.

Los Angeles County (LAC) was selected as a Healthy Refrigeration grant recipient during Round 1 but delayed its selection of participating stores, so not all data collection and analysis was completed by the time of this report. LAC storeowner surveys are still outstanding, but 4 pre/post storeowner interviews were completed, and are included in the analysis (referred to as the "LA County subsample" in Table 1).

Environmental assessments were conducted in the initial in-depth subsample at baseline to assess the validity of the self-reported storeowner survey data. Researchers at NPI visited participating stores and compared observed data (e.g., produce offerings and quality) to the reported storeowner survey data. NPI conducted a validity assessment for 10 stores at baseline, and found the results were comparable with the storeowner self-reported data. Due to in-person data collection limitations during the COVID-19 pandemic, NPI did not conduct the assessments at follow up. The findings from the environmental assessment are not discussed in this report, but data validity is explored in the results and discussion sections.

Table 1. Evaluation activities conducted by the Nutrition Policy Institute to capture the effects of the CDFA Healthy Refrigeration Grant Program

Evaluation Activity	Full sample, or in-depth subsample	Timeline of baseline data collection	Timeline of follow up data collection	Sharing of baseline findings
Storeowner survey	Full Sample	November 2019 – March 2021	March 2021 – December 2021	PowerPoint presentation to CDFA, 3/12/2020
Storeowner interviews	Initial in-depth subsample	October 2019 – December 2019	January 2021 – November 2021	Report to CDFA, available on NPI website
	LA County subsample	September 2020 – October 2020	January 2022 – March 2022	
Customer intercept survey	Initial in-depth subsample	October 2019 – December 2019	February 2021 – March 2022	PowerPoint presentation to CDFA, 3/12/2020
Community-based organization interviews	N/A	February 2020 – March 2020	N/A	Report to CDFA, available on NPI website
Environmental assessments	Initial in-depth subsample	September 2019 October 2020	N/A	N/A

The University of California Davis Institutional Review Board reviewed all research materials for this study in August 2019 and deemed the research Exempt under Category 2.

Study sample and setting

Storeowner survey sample

Survey data were collected at baseline and follow up (i.e., before and after stores installed their refrigerator) with as many stores as were willing to participate (all stores benefitting from the grant program were invited to complete the survey). Excluding duplicates, 80 stores completed the baseline survey (66 in Round 1 and 14 in Round 2) and 77 stores completed the follow up survey (62 in Round 1 and 14 in Round 2). To assess pre/post changes most accurately, stores missing data at baseline (n = 20) or follow up (n = 17) were excluded.

Stores characterized as “non-traditional” grant recipients (n = 9)—mostly farms and farmstands—were excluded from the main sample in the analysis. These grant recipients are discussed in Appendix A. The remaining grant recipients (n = 51), with both baseline and follow up survey data essentially represent traditional corner stores, and are the focus of analysis for this report.

Storeowner interview sample

A subset of the storeowner survey sample—10 storeowners—were selected via convenience sampling and input from CDFA to participate in an in-depth subsample that included qualitative interviews with storeowners about their experience with the Refrigeration Grant Program before and after the refrigerator installation. An additional five storeowners from the LAC sample were selected to participate in interviews; however, only four completed both baseline and follow up interviews, and were included in the storeowner interview sample.

Customer Sample

The customer survey sample included customers at stores from the 10 stores in the in-depth subsample. Customers were eligible to complete the survey if they were over 18 years old, had visited the store within the week, had purchased food or drinks during their visit, and did not have any other household members who had completed the survey. These criteria were included as screener questions in the survey; any participant that did not meet these criteria was excluded from the survey.

The goal was to collect 10 customer surveys using an in-person intercept method at each of the 10 stores at baseline and follow up. However, the COVID-19 pandemic required a transition to remote data collection just before the completion of baseline data collection. Multiple efforts were employed to collect data remotely, including sending flyers and postcards to each store containing an electronic link and QR code to the customer survey, and offering an additional $100 incentive to each store that was able to reach the goal of collecting ten surveys within two weeks. However, remote data collection was challenging, and low response rates resulted. While 90 surveys were collected at baseline, only 52 surveys were collected at follow up (Table 2). Because Store 10 did not have any follow up surveys, it was excluded from the analysis. The final sample included 83 surveys at baseline and 52 surveys at follow up, from 9 stores participating in the in-depth subsample.

Table 2. Customer survey sample, by store

Store number	Count of responses at baseline	Count of responses at follow up	Method of follow up data collection	Included in in-depth pre/post analysis
Store 1	11	4	In-person	No
Store 2	10	2	Remote	No
Store 3	10	1	Remote	No
Store 4	10	9	Remote	Yes
Store 5	10	10	4 in-person, 6 remote	Yes
Store 6	7	2	Remote	No
Store 7	10	5	Remote	Yes
Store 8	6	9	Remote	Yes
Store 9	9	10	8 in-person, 2 remote	Yes
Store 10	7	0	NA	No
Total	90	52	16 in-person, 36 remote	5 stores

Materials and procedures

Storeowner survey

Researchers at the Nutrition Policy Institute (NPI) developed a self-administered survey based on the University of Pennsylvania Nutrition Environment Measures Survey[3], the NPI Site-Level Assessment Questionnaire[4], the independently developed Store Impact Questionnaire (Budd, 2016) and the Convenience Store Supportive Healthy Environment for Life-Promoting Food Audit (Horacek et al., 2018).

The survey contained over 100 questions, and was designed to be completed by storeowners in about 35 minutes. Survey questions were programmed into Qualtrics, and the online instrument was pilot tested at three non-participating stores. Questions were refined based upon pilot test responses and then administered to both Round 1 and Round 2 storeowners. Baseline surveys were modified slightly at follow up: storeowner demographic information was not repeated, and questions were added to capture storeowners' experiences with the CDFA refrigeration program and any technical assistance they received. Survey questions are available in Appendix B.

CDFA emailed surveys to storeowners. Storeowners were not compensated for completing the surveys; completing the survey was considered by CDFA to be part of the grant program.

The COVID-19 pandemic caused significant delays in data collection, largely due to delays in refrigerator purchase, delivery, and installation. As a result, baseline surveys were completed from

[3] https://nems-upenn.org/tools/

[4] https://ucanr.edu/sites/SLAQ/

November 2019 – March 2021 for Round 1 and from April 2020 – June 2020 for Round 2. Follow up surveys were completed from March 2021 – December 2021 for Round 1 and from August 2021 – November 2021 for Round 2.

Storeowner interviews

A semi-structured interview guide was developed to capture storeowners' experiences with the CDFA Healthy Refrigeration Grant program and their ideas and opinions about selling CA-grown produce. The interview guide was adapted due to COVID-19, to ask storeowners about the impact the pandemic had on their store. Two researchers were trained to conduct the qualitative interviews, and each interview was conducted by one of these researchers. Follow up interviews were scheduled at least one month after the CDFA refrigerator was successfully installed. All interviews were conducted in English and were recorded and later transcribed. Baseline interview questions are available in Appendix B.

Baseline interviews of the in-depth subsample were conducted from October 2019 – December 2019. The LAC subsample baseline interviews were conducted September 2020 – October 2020. Follow up interviews of the in-depth subsample were completed from January 2021 – November 2021, and January 2022 – March 2022 for LAC subsample grant recipients.

The same interview guide was used for all storeowners, with the exception of a few questions at follow-up that were tailored to each respondent based upon data from their baseline interview to capture changes.

Baseline interviews for the in-depth subsample were conducted in person. Due to COVID-19-related restrictions on travel, baseline LAC interviews and all follow up interviews were conducted remotely via phone or videochat. Participation in these interviews was voluntary and storeowners were provided a $200 gift card (physical or electronic) in appreciation of their participation.

Customer Survey

A customer-intercept survey—designed to be administered to two different samples of customers at baseline and at follow up—was developed to measure attitudes related to produce shopping at the in-depth subsample stores. Where possible, questions were developed based on previously tested and deployed tools, including NPI's evaluation surveys for CDFA's Market Match program and the Healthy Eating Active Living study.

The draft survey contained approximately 40 questions and was designed to be completed by customers in around 10 minutes. The draft instrument was programmed into Qualtrics and pilot tested at a non-participating store (both at baseline and follow up). Four customers completed the pilot survey at baseline; two customers completed it at follow up. The instrument was modified based upon pilot test responses. Surveys were available in both English and Spanish. Survey questions are available in Appendix B.

The same survey instrument was used at baseline and at follow up. The survey was administered entirely in-person at baseline, and remotely for all but 16 customers at follow up, due to COVID-19 pandemic restrictions. In person surveys were interviewer-administered; for remote data collection, customers were sent a link to the survey and self-administered the survey on their own device. A detailed explanation of differences in the remote and in-person surveys, including marketing methods, is provided in Appendix C.

Customers were provided a $10 gift card in appreciation for completing the surveys. Baseline surveys were collected from October 2019 – December 2019; follow up surveys were collected from February 2021 – March 2022.

Data analysis

Storeowner survey data analysis

During data cleaning, storeowner survey data entry errors with a clear interpretation were changed (e.g., $99 per pound to $0.99 per pound), but ambiguous entries (e.g., $1234 dollars per pound) were recorded as missing. In some cases, NPI researchers called storeowners to inquire about outliers or missing data, and updated the data accordingly. A few stores completed multiple surveys; in this case, the less complete surveys were dropped from the analysis. A full list of data cleaning changes is available in Appendix C.

NPI researchers generated tables with frequencies and proportions for all categorical data and calculated central tendency statistics for all numeric data. For questions used for pre/post analysis (i.e., questions repeated at baseline and follow up to measure change), researchers calculated differences in pre/post proportions for each categorical response, and differences in pre/post means for each numeric response. Stores that did not have data for both baseline and follow up were omitted from pre/post analyses. For analysis of select survey questions, the storeowner sample was filtered by whether the store installed the CDFA refrigerator (39 of the 51 traditional cornerstores installed the refrigerator).

Write-in storeowner survey responses were included in frequency tables if more than one survey respondent wrote in the same response. In most cases, the response was labeled “write-in,” in the frequency table, but was counted in the “other” category of the frequency table. For “other fruit” and “other vegetable” offerings, all write-in fruits and vegetables were included in frequency tables and removed from the “other” category. Write-in responses that captured the same or a very similar sentiment as a provided choice were incorporated in frequencies for the provided choice and removed from the “other” category.

Additional analyses were conducted on produce offerings to better understand the potential influence of seasonality on results. The initial study design planned to conduct follow-up surveys one year after the baseline, to prevent seasonality from adding bias. However, due to the delays in refrigeration units being installed, that timeline was not possible. Analyses to assess seasonality issues included generating frequency tables to review the month and season of survey completion at baseline and follow up. The average number of months between baseline and follow up survey completion was calculated.

Survey questions regarding produce sales included two categories: “core” produce items offered (for which data were collected on price, etc.), and questions regarding additional, “other” produce items offered (for which stores simply reported whether they sold the items). The core items included bananas, apples, oranges, grapes, and strawberries for fruit, and tomatoes, peppers, lettuce, broccoli, and carrots for vegetables. Information about “other” produce offerings was collected via a multiple-choice question in the storeowner survey, which asked storeowners, “does your store sell any of the following fruits/vegetables?” and included as responses multiple types of produce (e.g., celery, blackberries), as well as an “other” option with the ability for storeowners to write-in fruits and vegetables not included in the series of choices. The distinction between “core” and “other” produce offerings is relevant for analyses regarding produce variety, sales, and characteristics.

All analyses were conducted in R version 1.3.1056. Figures were created in Excel.

Storeowner interview data analysis

NPI used a process of thematic analysis coding to analyze storeowner interviews. A trained researcher reviewed all interview recordings and transcriptions to begin identifying emerging themes within the data. A structured codebook was created to identify the overarching themes (domains) as well as the sub-themes that emerged within each larger domain (codes). The researcher then read through each transcript and applied the domains and codes to meaningful sections of text to group relevant text from each theme. The text was entered into a document, categorized by domain and then by codes to easier display the data for analysis. A thematic analysis was conducted to interpret general trends and patterns in the qualitative data.

Because an identical semi-structured interview guide was used for all storeowners and responses between the non-LAC and LAC samples were consistent, both samples’ responses were analyzed together. Quotes from storeowners were chosen from transcriptions to support the emerging narrative identified during analysis. Quotes are included throughout the results section of the report and in Appendix D.

Customer survey data analysis

All customer survey data collected were cleaned for accuracy. One survey was excluded, due to duplication.

NPI researchers generated tables with frequencies and proportions for all questions. Researchers calculated differences in pre/post proportions for each categorical response, and differences in pre/post means for each numeric response.

Survey questions that included “other” as a response category, with the option to “write-in” a response not listed in the given choices, were included in frequency tables if more than one survey respondent wrote-in the same response. The response was labeled as “write-in,” in the frequency table, and was still counted in the “other” category. Write-in responses that captured the same or a very similar sentiment as a provided choice were incorporated in frequencies for the provided choice and removed from the "other" category. Pre/post differences were not calculated for write-in responses not incorporated into provided choices.

For open-ended survey questions, NPI researchers grouped responses with a clear theme, (e.g., "Decrease price" and "Lower the price") and included responses in frequency tables if more than one participant at baseline or follow up wrote in the response. Any other response was categorized as "other."

Due to pandemic-related challenges, follow up data collection was conducted almost entirely remotely, which made recruitment more difficult. Sample sizes at most stores were substantially smaller than planned (10 surveys per store was planned), so a pre/post analysis only including stores with the most pre/post data (defined as more than 5 surveys at baseline and at follow up) was conducted. The stores included in this analysis are reported in Table 2. Chi square tests were conducted to assess statistical significance in differences in demographic and food security characteristics across baseline and follow up samples. Statistical significance was evaluated using a p-value of 0.05. Baseline and follow up samples differed much more than anticipated when developing the pre/post cross sectional design. Statistical analyses of the customer survey data would ideally be adjusted for the differences between the baseline and follow up samples. However, due to small sample sizes and limited resources, results are presented unadjusted. Bias must be considered when interpreting pre/post customer survey results.

All analyses were conducted in R version 1.3.1056.

Results

In this section, we present results from the three methods of data collection conducted at both baseline and follow up: first, we present findings from the storeowner survey; second, we present findings from interviews of a subsample of storeowners; and finally, we present findings from surveys of customers at a subsample of the stores where interviews were conducted.

Storeowner survey

Sample demographics

Most storeowners responding to the survey reported that they were the owner or manager of the store, and the most commonly reported race/ethnicity was Hispanic/Latinx (Table 3).

Table 3. Storeowner survey sample demographics

	Pre/post sample (n = 51)
Respondent association to store	**n (%), n = 49**
Storeowner	24 (49%)
Store manager	16 (32.7%)
Store clerk	3 (6.1%)
Other store staff	1 (2%)
Representative from outside organization	3 (6.1%)
Race/Ethnicity[1]	**n (%), n = 48**
Asian	6 (12.5%)
Black or African American	1 (2.1%)
Hispanic or Latinx	22 (45.8%)
White/Caucasian	4 (8.3%)
Other	3 (6.2%)
Middle Eastern (write-in)	7 (14.6%)
Prefer not to answer	5 (10.4%)
Age	**n (%), n = 46**
18-30	9 (19.6%)
31-50	24 (52.2%)
51-70	8 (17.4%)
Prefer not to answer	5 (10.9%)
Gender	**n (%), n = 49**
Male	31 (63.3%)
Female	16 (32.7%)
Prefer not to answer	2 (4.1%)
Language normally spoken at home[1]	**n (%), n = 49**
Arabic	12 (24.5%)
English	30 (61.2%)
Spanish	20 (40.8%)
Other	4 (8.2%)
Prefer not to answer	4 (8.2%)
Language normally spoken among customers[1]	**n (%), n = 49**
Arabic	3 (6.1%)
English	35 (71.4%)
Mandarin or Cantonese	2 (4.1%)
Spanish	39 (79.6%)
Other	2 (4.1%)
I don't know	1 (2%)

Highest level of education	n (%), n = 47
Grade 1-12 (no diploma)	8 (17%)
High school graduate/GED	10 (21.3%)
Vocational certificate	3 (6.4%)
Some college or Associate's degree	7 (14.9%)
Bachelor's degree	5 (10.6%)
Master's degree or higher	2 (4.3%)
Prefer not to answer	12 (25.5%)

[1]Respondents could select more than one response.

Store characteristics

Of the corner stores sampled, 96% reported accepting SNAP (CalFresh), and 31% accepting WIC. Half (50%) reported participating in a healthy retail initiative in the last 3 years (e.g., Rethink Your Drink, Harvest of the Month). Most storeowners (62%) reported that store staff received training about stocking, promoting and/or marketing fruits and vegetables.

The mean number of other food refrigerators in each store was 2.1, with a range of 0 – 10. The average store square footage was 3755 square feet, with a range of 120 – 30,000 square feet. A full table of store characteristics is available in Appendix E, Table 1.

Storeowner experiences with the CDFA refrigerator program

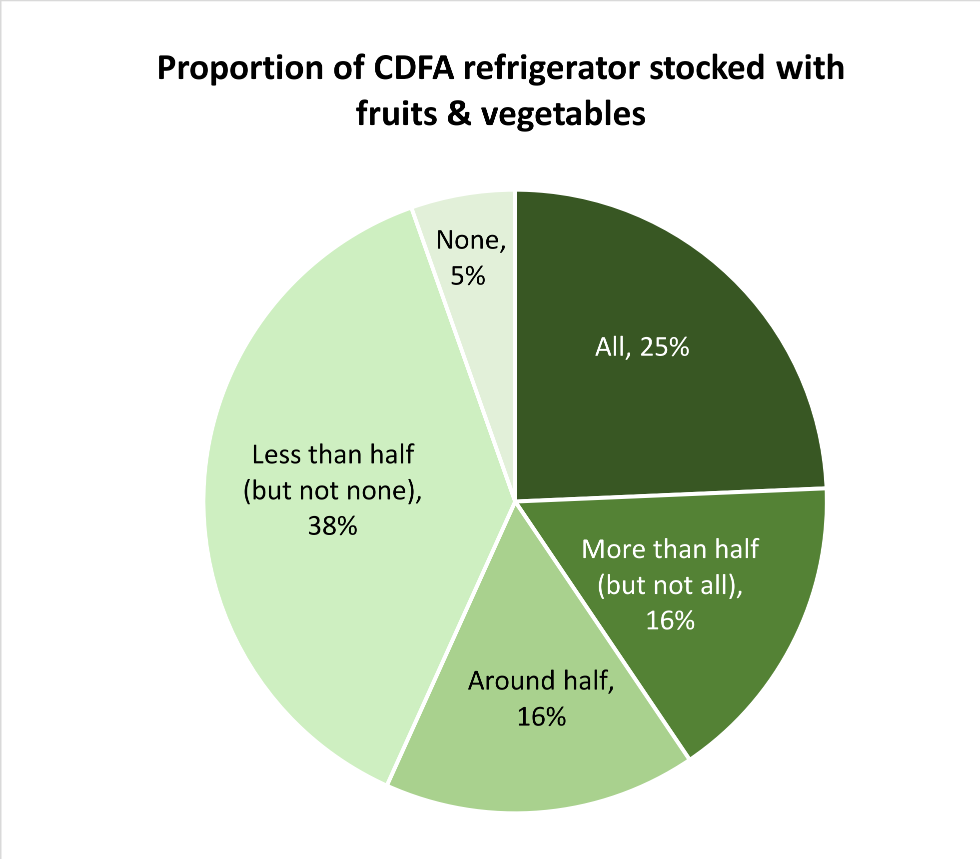
Nearly all storeowners (97%) reported they recommend the CDFA Healthy Refrigeration Grant Program to other stores/storeowners.

77% of storeowners reported their CDFA refrigerator was installed. The units were installed over a more than a two and a half year time period, from February 2019 to October 2021.

The majority of storeowners who reported having installed the CDFA refrigerator (53%) reported using it as an additional refrigerator, not as a replacement refrigerator with equal or increased capacity. The most common items storeowners reported stocking in the refrigerator were whole fresh fruits and vegetables (reported by 81% of stores). The next most common items were minimally processed foods (reported by 42% of storeowners), dairy (reported by 31% of storeowners), and ready-to-eat fresh fruits and vegetables (reported by 33% of storeowners). A smaller percentage of storeowners reported stocking the refrigerator with a variety of other products, including water, meat, nuts, sweets, prepared food, and sugary drinks. No storeowners reported stocking the CDFA refrigerator with candy or alcohol.

There was a fair amount of variation in the proportion of the refrigerator storeowners reported stocking with fruits and vegetables. The majority of storeowners reported stocking at least half of the refrigerator with fruits and vegetables—the full distribution is presented in Figure 1.

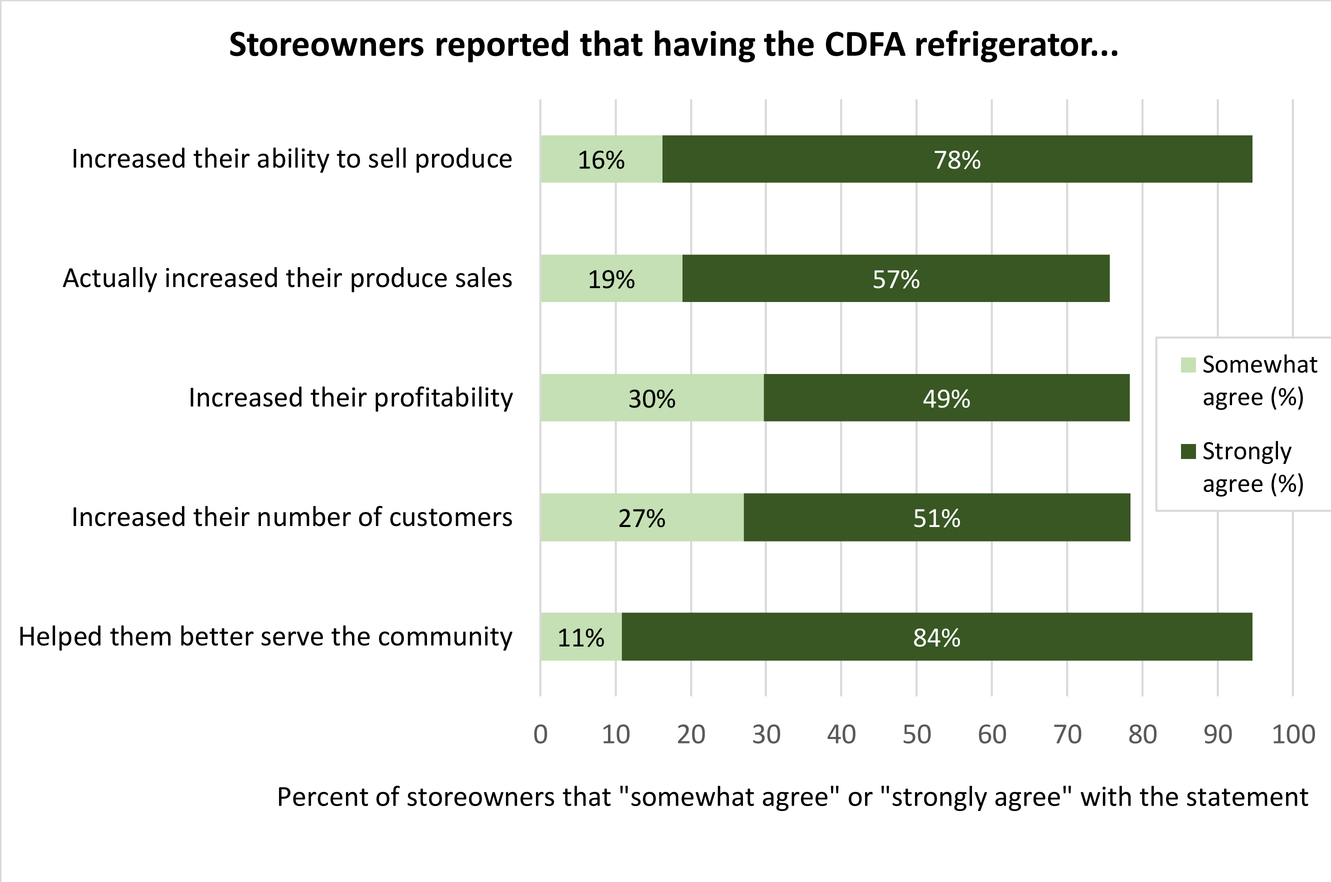
Figure 1. Proportion of the CDFA refrigerator storeowners reported stocking with fruits and vegetables



Almost all storeowners (87%) reported being very likely to continue using the refrigerator after the grant funding period. The remaining 13% of storeowners reported being likely to continue using the refrigerator.

Storeowners largely reported that the refrigerator was useful in increasing produce sales, profits, and the store's community impact. Storeowners' impressions of the utility of the refrigerator are represented in Figure 2.

Figure 2. Storeowners' impressions of the impact of the CDFA refrigerator on their store

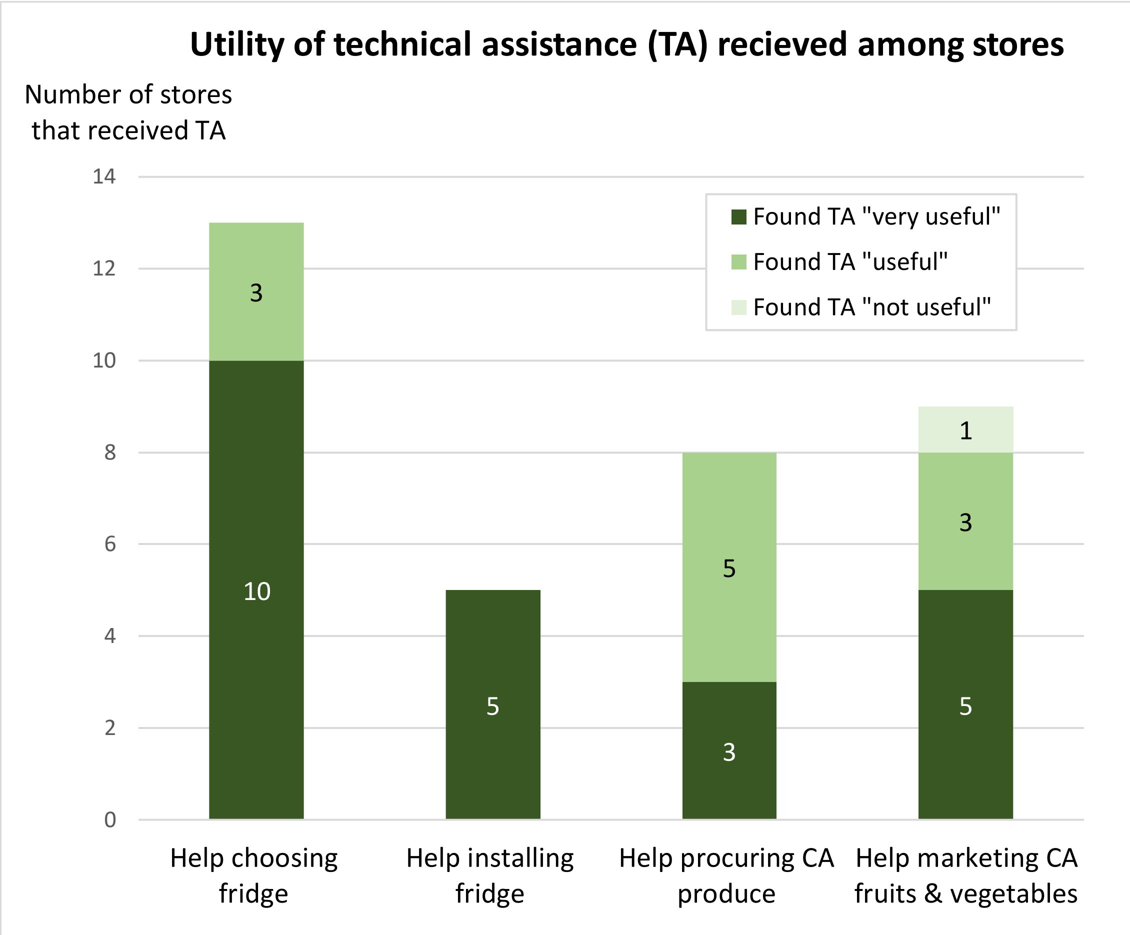


CDFA refrigerator technical assistance

Among survey respondents that installed the CDFA refrigerator, 49% (18 stores) reported receiving any technical assistance. Of the storeowners that received technical assistance, the most common type of assistance received was help choosing the refrigerator (received by 72% of storeowners). All storeowners receiving this type of technical assistance reported it to be very useful (77%) or useful (23%). The utility of other types of technical assistance is presented in Figure 3.

Among storeowners that *did not receive* any technical assistance (5 storeowners), 80% reported they would have appreciated help installing the refrigerator.

Figure 3. Type and utility of technical assistance received among stores that installed the CDFA refrigerator



Most storeowners reported being likely or very likely to sell CA-grown produce after the CDFA technical assistance ends. About a quarter of storeowners reported not knowing whether they would continue to sell CA-grown produce.

Storeowner reasons for stocking or not stocking fruits and vegetables

The main reasons storeowners reported for not stocking more fruits and vegetables, and not stocking more CA-grown fruits and vegetables are presented in Figures 4 and 5. By far the largest change from baseline to follow up was that many fewer storeowners at follow up reported that having too little refrigeration space was a barrier to stocking more fruits and vegetables. Similarly, many more storeowners at follow up reported there were no challenges to stocking more fruits and vegetables.

While there were few changes in barriers to stocking more CA-grown fruits and vegetables reported between baseline and follow up, one area that diverged was that at follow up, more storeowners reported it was hard to know whether produce is grown in California.

Figure 4. Storeowner reasons for not stocking fruits and vegetables, at baseline and follow up

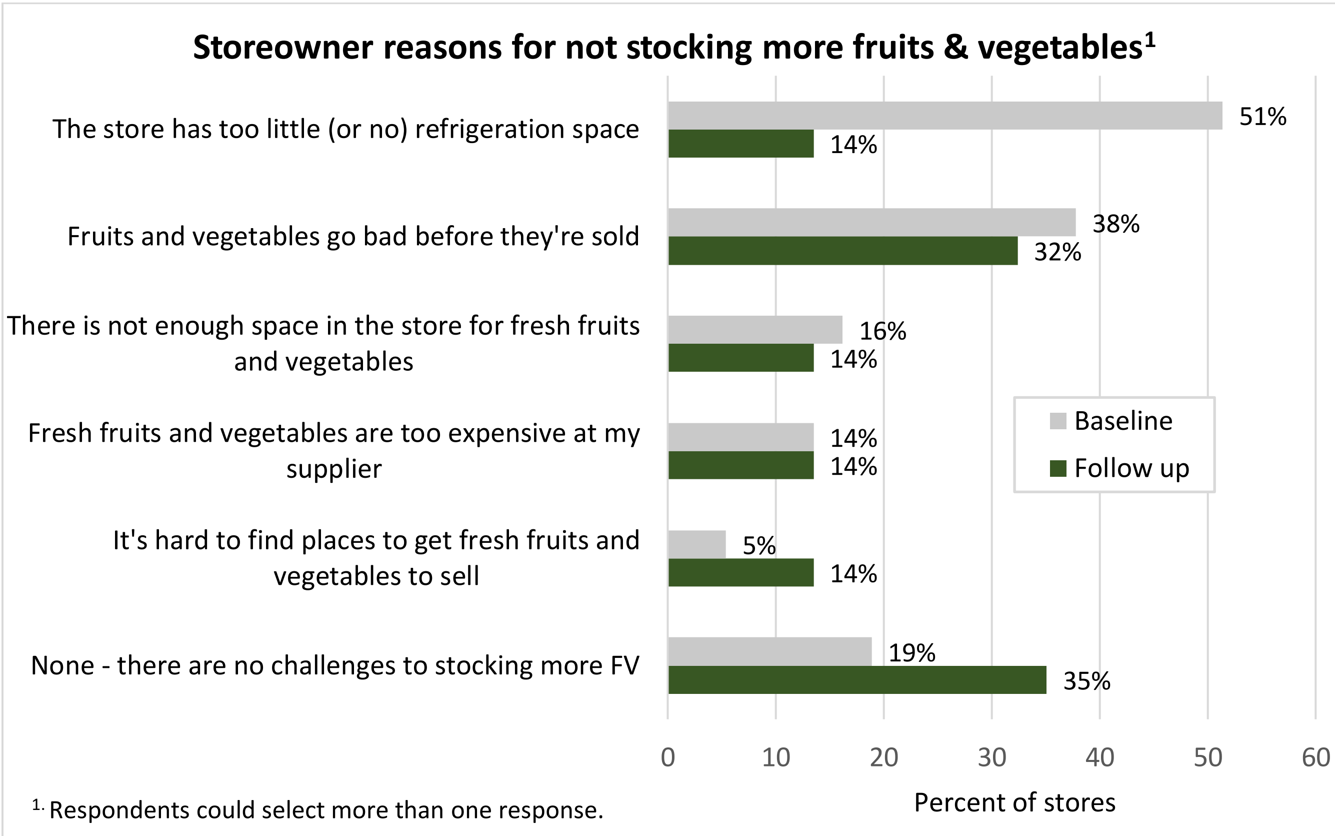
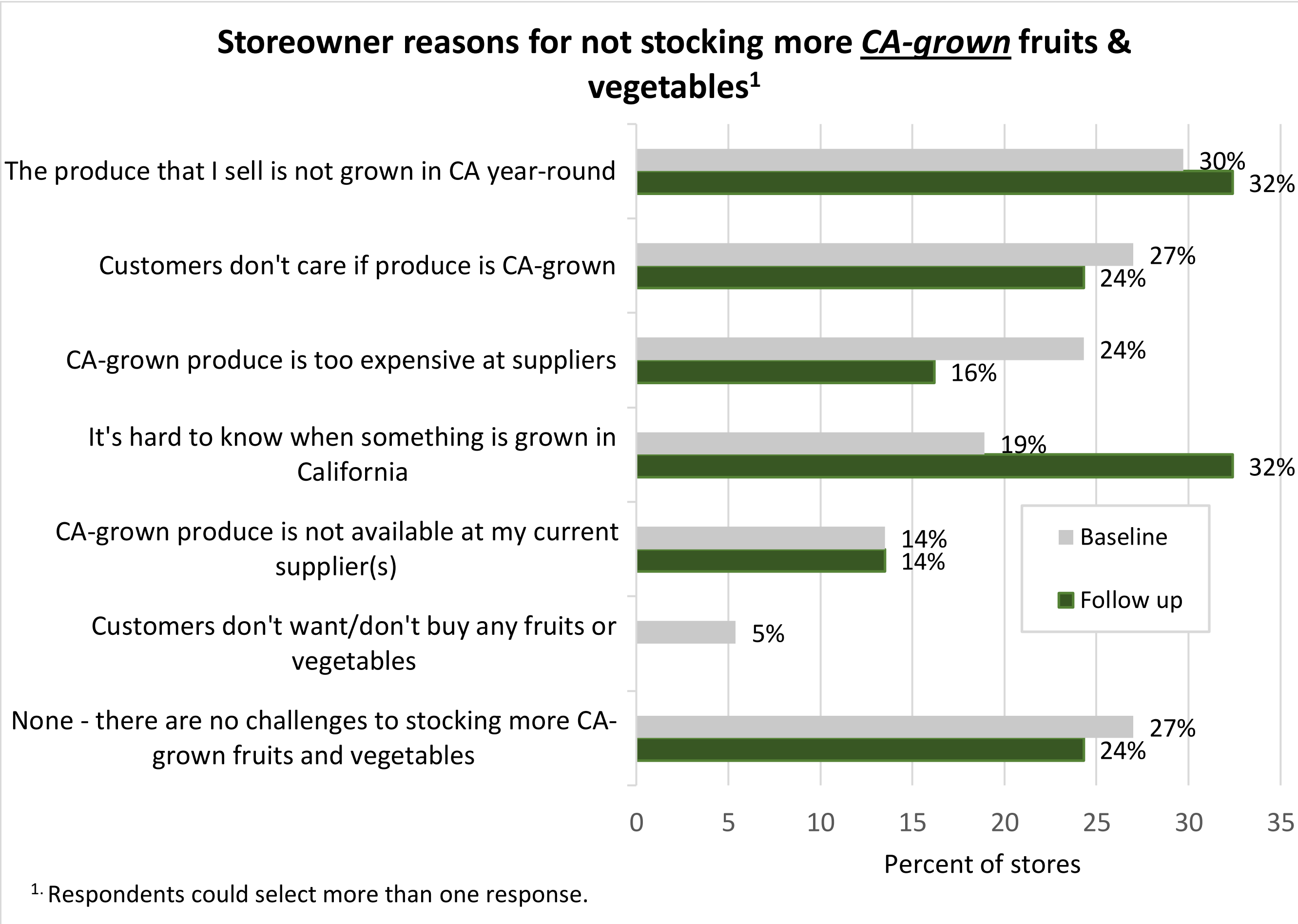

Storeowner reasons for not stocking more fruits & vegetables[1]
The store has too little (or no) refrigeration space
Fruits and vegetables go bad before they're sold
There is not enough space in the store for fresh fruits and vegetables
Fresh fruits and vegetables are too expensive at my supplier
It's hard to find places to get fresh fruits and vegetables to sell
None - there are no challenges to stocking more FV
51%
14%
38%
32%
16%
14%
14%
14%
5%
14%
19%
35%
Baseline
Follow up
0
10
20
30
40
50
60
Percent of stores
1. Respondents could select more than one response.

Figure 5. Storeowner reasons for not stocking ***California-grown*** fruits and vegetables, at baseline and follow up



At follow up, the main reason storeowners reported for selling CA-grown fruits and vegetables was the importance of supporting regional growers (reported by 62% of storeowners). About half of storeowners reported the high quality of CA-grown produce as a major motivator for selling CA-grown fruits and vegetables, while 41% reported the importance to customers, and 30% reported the importance to their sales/profits as a major reason. Storeowners reported similar reasons for selling CA-grown fruits and vegetables at baseline. However, at follow up, almost a quarter of storeowners reported that they sell CA-grown produce because it is required by the CDFA Healthy Stores Refrigeration Grant Program (a response not included as an option in the baseline storeowner survey). Full results can be found in Appendix E, Table 2.

Produce sourcing

At follow up, almost all storeowners (89%) reported sourcing their CA-grown produce from a supplier/wholesaler not accessible to the general public. Other avenues from which storeowners reported sourcing CA-grown produce were retail grocery stores (reported by 24% pf storeowners) and farms (27%). No storeowner claimed they did not buy CA-grown produce.

Although NPI collected data on produce sourcing at baseline, conclusions cannot be drawn about changes in sourcing over time, due to a change in the survey instrument. At baseline, the survey did not specify whether a “wholesaler” was open or closed to the public, which made interpretation of baseline findings difficult, and rendered comparison to follow up findings impossible. A detailed explanation of the change in survey instrument is in Appendix C.

Produce offerings & variety

Among stores that installed the CDFA refrigerator, storeowners reported selling an average of 10 types of fruit and 14.4 types of vegetables at baseline compared to an average of 9.5 types of fruit and 14.6 types of vegetables at follow up. These averages include the core set of fruits (bananas, apples, oranges, grapes, or strawberries) or vegetables (tomatoes, carrots, broccoli, lettuce, or peppers), “other” types of fruits or vegetables (e.g., “blackberries”), and write-in responses (e.g., “taro”). While the number of types of fruit and vegetables offered didn’t change appreciatively from baseline to follow up (-0.5 percentage points for fruit, +0.2 percentage points for vegetables), these findings were investigated further, given the hypothesis that the number and types of produce offerings would increase as a result of the refrigeration units. Storeowners were also asked about the number of CA-grown produce items they sell. These numbers also did not change appreciatively from baseline to follow up (an average of 3.1 types of CA-grown fruit at baseline and 3.2 types at follow up, and an average of 3.6 types of CA-grown vegetables at baseline and 3.2 types at follow up).

The number of stores reporting selling the core set of produce items increased, in aggregate, from baseline to follow up. Specifically, the percentage of storeowners that reported selling bananas, oranges, grapes, strawberries, carrots, peppers, broccoli, and lettuce increased by over 10 percentage points each from baseline to follow up.

In general, storeowners reported offering fewer types of “other” produce at follow up. This decline from baseline may be related to produce seasonality, supply chain issues due to the COVID-19 pandemic, or respondent survey fatigue at follow up. Most storeowners at follow up (88%) reported selling some types of fruit other than the core set. The most common types of “other” fruit storeowners reported selling were lemons, limes, mangos, pineapples, and melon. Nearly three-quarters (72%) of storeowners reported selling some type of vegetable other than the core set at follow up. The most common types of “other” vegetables storeowners reported selling at follow up were onions, potatoes, cucumbers, cilantro, cabbage, chili peppers, and avocado.

Storeowners reported storing an average of 3.3 types of fruit in the refrigerator at baseline and 3.2 types at follow up and an average of 4.5 types of vegetables in the refrigerator at baseline and 4.6 types at follow up. These numbers include only the core set of fruits and vegetables; the question about where produce items were stored was not asked for “other” types of produce.

Most, but not all, storeowners reporting selling nuts at baseline and at follow up. About half of storeowners that reported selling nuts at baseline reported selling at least some CA-grown nuts; this percentage declined to 40% at follow up.

At both baseline and follow up, about half of storeowners reporting selling ready-to-eat fresh salads, ready-to-eat fresh vegetables or ready-to-eat fresh fruit, with little change from baseline to follow up. A few more storeowners did report selling ready-to-eat fresh fruit at follow up (36% of storeowners) compared to baseline (25%).

Store produce offerings: seasonality

Although the original study design called for baseline and follow up data to be collected during the same season one year apart, due to multiple unforeseen delays in acquisition of refrigeration units resulting from the COVID-19 pandemic and other issues, this design was not implemented. In practice, on average, baseline and follow up surveys were administered during different seasons; therefore, the types of fruit and vegetables available likely varied due to seasonal differences. We examined the data for patterns of differences related to the timing of data collection and did not find a clear trend related to specific seasons or types of produce that would have biased the results.

We did find some large discrepancies in the fruits and vegetables offered at some stores comparing baseline to follow up. For example, one store reported selling 22 types of vegetables at baseline (including celery, chili peppers, and radishes), but only 3 types of vegetables at follow up (carrots, tomatoes, and lettuce). We reached out to these stores via phone to follow up, and in most cases, storeowners verified that they did in fact still sell the products listed at baseline, when in season, at follow up. The data were adjusted for these outliers, but overall averages did not change appreciatively. Seasonality seems to have played a part in produce variety changes from baseline to follow up, but does not explain the full story.

The study period (2019–2021) was a particularly challenging time for corner stores, as COVID-19 impacted produce prices, procurement, and consumer behavior.

Store produce sales, characteristics, quality, and price

Among stores that installed the CDFA refrigerator, storeowners largely reported their core produce sales increased or did not change appreciatively from baseline to follow up. The percent of storeowners reporting produce items were CA-grown decreased or did not change appreciatively, and the percent of storeowners reporting storing produce in the refrigerator increased or did not change appreciatively. An overview of these changes is presented in Table 4.

Table 4. Change in average weekly pounds sold of produce among stores, percent of stores offering CA-grown produce, and percent of stores storing produce in the refrigerator, before and after refrigerator installation, by produce item

Type of produce	Average weekly pounds sold of produce item among stores	Percent of stores stocking CA-grown produce item	Percent of stores storing produce item in refrigerator
Bananas	=	NA	NA
Apples	=	=	↑
Strawberries	↑	↓	=
Oranges	↓	↓	=
Grapes	↓	=	=
Carrots	↑	=	=
Sweet peppers	↑	=	↑
Tomatoes	=	=	↑
Broccoli	=	=	=
Lettuce	=	=	↑

↑	Increased by > 10 percentage points from baseline to follow up
=	Changed by < 10 percentage points from baseline to follow up
↓	Decreased by > percentage points from baseline to follow up

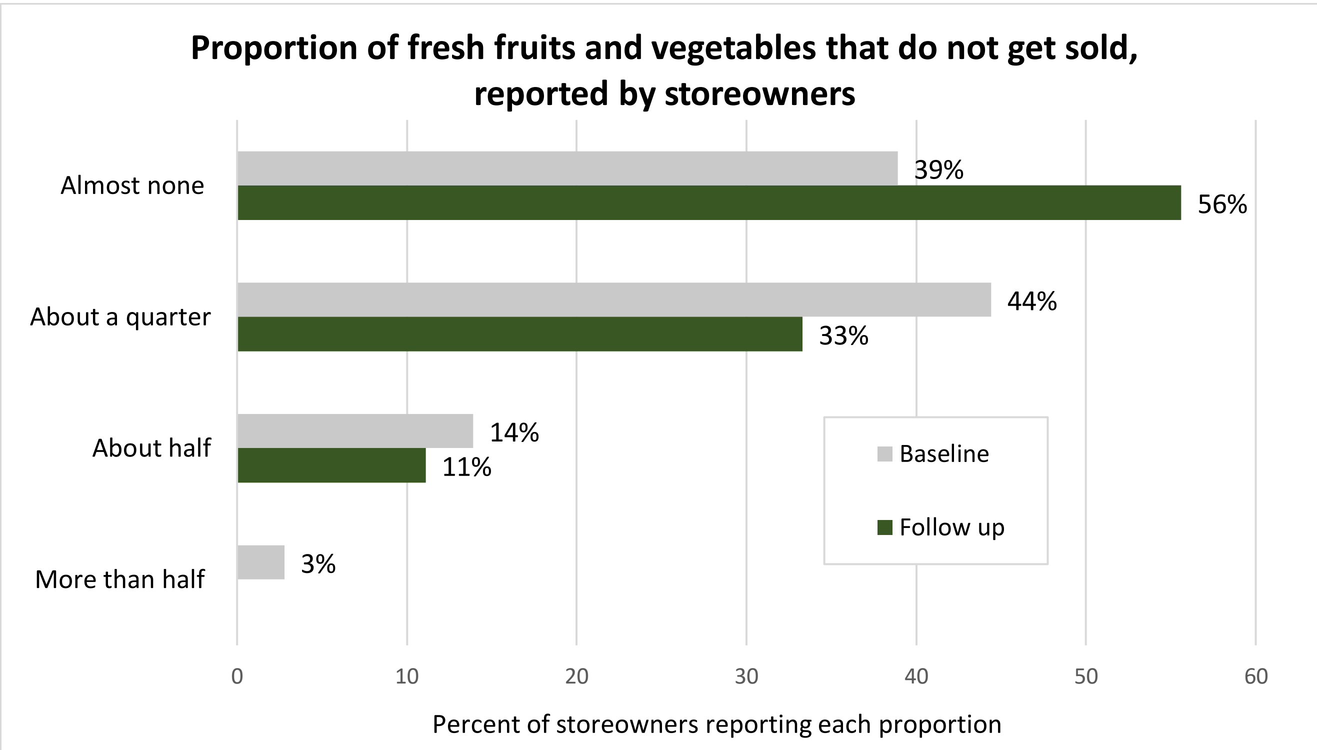
Among stores that installed the CDFA refrigerator and reported on produce quality, average quality of produce declined from baseline to follow up. However, not all storeowners answered survey questions regarding produce quality for all produce items, so sample sizes were sometimes very small. No storeowners reported their core produce items were of “all poor quality” at baseline and/or follow up.

Storeowners were asked to provide core produce item prices at baseline and follow up, but due to small sample sizes and unprecedented inflation, little can be concluded about the impact of the CDFA refrigerator on produce prices; therefore, these data are not presented.

Store produce waste

Among stores that installed the CDFA refrigerator, 56% of storeowners reported at follow up that almost all their fresh produce sells out—an increase of 17% from baseline. Full baseline and follow up statistics on proportion of unsold produce are presented in Figure 6.

Figure 6. Proportion of fresh fruits and vegetables that do not get sold, among stores that installed the CDFA refrigerator, at baseline and follow up, reported by storeowners



At follow up, 58% of storeowners that installed the CDFA refrigerator reported they take home unsold produce for family use—an increase of 31% from baseline. Just under half of storeowners (47%) reported they throw unsold produce in the trash, and 44% of storeowners reported giving unsold produce to customers for free. A smaller percentage reported composting, donating, or repurposing unsold produce for use in prepared food. A full table of results is available in Appendix E, Table 3.

Store produce plans

When asked about their produce plans for the upcoming year, over 75% of storeowners reported intending to sell more fresh fruits and vegetables, and a majority (54%) reported planning to sell more ready-to-eat fruits and vegetables. Similarly, most storeowners reported plans to sell a wider variety of fresh fruits (60%), and fresh vegetables (62%). Slightly less than half of storeowners (46%) planned to sell a wider variety of ready-to-eat fruits and vegetables. Fewer storeowners reported plans to increase the quantity (43%) and variety (35%) of nuts they sell.

Storeowner interviews

Storeowner interview sample demographics

Demographics for the storeowner interview sample were similar to the storeowner survey sample, except a larger percentage of the storeowner interview sample identified as Asian. A full table of storeowner interview participant demographics is available in Appendix E, Table 4.

Satisfaction with the CDFA Healthy Refrigeration Grant Program

All storeowners reported they were satisfied with the CDFA Healthy Refrigeration Grant Program. Storeowners reported CDFA communicated clear program guidelines and adequately prepared storeowners for the requirements of program participation. Storeowners were extremely thankful for the opportunity to transform their stores. All storeowners reported they would recommend the program to other storeowners.

"So, I had a great experience. Everybody was super helpful. They're very clear on what was necessary and what needs to be done and what the requirements were."

Storeowners were overwhelmingly positive about the impact of the CDFA refrigerators on their stores. Storeowners commonly reported the refrigerator allowed them to increase produce visibility, variety, and quantity. Almost all storeowners reported they were able to stock a larger selection of fresher fruits and vegetables and increase their storage capacity.

"We are able to stock more fresh fruits and vegetables for longer periods of time."

Many storeowners reported aesthetic benefits of the new refrigerator. Storeowners reported the display signified to customers the store sold fresh produce, drew customers into the store, and encouraged customers to purchase more fruits and vegetables. Storeowners also reported the refrigerator helped customers clearly see the produce being stored properly.

"They can see the refrigerator. They can see everything that we have. Before they would have to like ask if we have it."

Some storeowners also discussed how the CDFA refrigerators made their stores more valuable to their communities by increasing access to nutritious food. One storeowner reported the refrigerator allowed them to contribute to shifting negative perceptions about the unhealthfulness of corner stores in the community. Many storeowners echoed this idea, reporting the new refrigerator improved the overall branding of the store. Storeowners reported the new CDFA refrigerators generated positive change in their neighborhood by bringing in fresh produce and meeting customer demand for healthier products.

"The image the customer gets from our store is different now. They know that we carry healthier items so they are very happy with that."

All storeowners reported having positive experiences with CDFA program staff. Storeowners found staff to be kind, supportive, and communicative. Several storeowners reported program staff offered them feedback throughout the grant program. Most storeowners mentioned CDFA staff were easy to work with and did everything in their power to provide stores with refrigeration units quickly. One storeowner said working with CDFA felt like a partnership because CDFA cared about the store as if it were their own.

Some storeowners received support from other sources in addition to that provided by CDFA. One storeowner worked closely with their produce distributer and reported having a wonderful experience. The storeowner felt they could be hands off throughout the entire process—from selecting the refrigerator to marketing the fruits and vegetables. A few stores located in LA County received additional support from the Los Angeles Food Policy Council (LAFPC). These storeowners reported LAFPC staff followed up frequently and supported the storeowners throughout the grant period.

Most stores reported no challenges with their grant experience. Of the few stores that did experience challenges, most were related to the refrigerator selection and/or installation process. These challenges are described in more detail in the Technical Assistance section (pages 26-27).

Placement and maintenance of CDFA refrigerator

Storeowners reported having different approaches to where they placed their refrigerators. Some storeowners decided to place their new refrigerators towards the front of their store so customers would see the refrigerator immediately upon entering the store. Others placed their refrigerator next to the cash registers so customers could make last minute produce purchases during check out. A few storeowners placed the new refrigerator in the same location as the refrigerator it replaced. For others, placement decisions were based on the refrigerators needing to fit within the general layout of the store and connect to available electrical outlets. Many storeowners mentioned deciding to place their new CDFA refrigerator next to non-refrigerated produce to create a store produce section.

"We put the refrigerator right near our front counter. And, yeah, it's a can't miss thing. It's one of the first things you see when you come into the store and we've had a lot of people come in and be like, 'Oh, you guys have fruits and vegetables?'"

All storeowners reported having no added maintenance costs since installing the new refrigerators. Some storeowners reported saving money with the new refrigerator because the new unit was replacing an older unit that required frequent maintenance or that their electricity costs were lower when using the new refrigerator compared to the older unit it replaced. A few stores reported a slight increase in electricity costs when using the new units and others did not notice any changes in electricity costs. The change in electricity cost seemed dependent on the size and model of the CDFA refrigerator as well as whether it replaced an older unit or was the store's first refrigerator. Of the storeowners who reported reductions in their electricity costs, most mentioned their new refrigerator was designed to be energy efficient.

Experiences with technical assistance

Of the 14 storeowners that participated in qualitative interviews, all reported receiving assistance selecting their refrigerator, nine reported receiving assistance installing their refrigerator, two reported receiving assistance with the placement of their refrigerator, and two reported receiving assistance procuring CA-grown produce. One storeowner reported receiving assistance marketing CA-grown produce, and another reported being offered but declining electrical and maintenance assistance. A little less than half of storeowners reported they received all the help they needed from the program and did not require additional technical assistance.

Storeowners found assistance choosing the refrigerator to be very useful. They reported the website displaying refrigerator models was well-organized, and they appreciated access to information on each refrigerator's specifications. Storeowners found it helpful to have information on the physical dimensions and energy requirements of each refrigerator, and appreciated receiving guidance on which refrigerators met the program guidelines. One storeowner said:

"They gave us a list that had like 100 refrigerators or something and then we asked them to narrow it down and they… offered to help us with that and gave us like an option of four refrigerators and we just picked one."

Most storeowners were happy with their choice of refrigerator, saying the refrigerator looked new and clean and drew customers to their produce displays. However, a few storeowners mentioned regretting their choice of refrigerator. With so many options to choose from, the process was overwhelming for storeowners who did not have a base knowledge about refrigerator models. Without this technical assistance, one storeowner said it was challenging to find a space in their store to accommodate the unit without having to remove other retail products. Another storeowner unintentionally chose a unit without any lighting. A third storeowner was unable change the temperature of the refrigerator, which resulted in produce freezing or spoiling quickly.

Of the storeowners that received assistance installing their refrigerator, most found the assistance to be useful. Some storeowners received help from CDFA while others received help from the refrigerator delivery company. However, there were a few issues with installation. While most storeowners were able to have their refrigerators delivered directly to their store, many reported they received no support bringing the unit inside and setting it up. One storeowner described how their refrigerator was left outside by the delivery company and the storeowner worked independently to remove the store's doors to fit the unit through. Another store's refrigerator was damaged by the distributor during delivery. A few storeowners experienced challenges connecting their refrigerators to the store's electricity source. Some storeowners sought additional funding to retrofit their unit to fix this issue, while others paid out-of-pocket for electricians.

"*The delivery people basically put it on the ground on the outside. They did not come inside so I had to hire three people in order to get the refrigerators in."*

Storeowners also reported they would have appreciated help marketing the new refrigerator to their customers.

Produce procurement and stocking decisions

Many storeowners did not report changing their method for procuring fruits and vegetables after receiving their refrigerators. A few storeowners reported buying more produce directly from local farmers, but still reported procuring "necessary" non-CA-grown produce from wholesalers or other large grocery stores.

Storeowners most commonly reported guiding their refrigerator stocking decisions based on customer demand. Storeowners reported listening to customer requests, observing store sales' trends, or using a process of trial and error to determine product popularity. Most storeowners prioritized produce seasonality and some storeowners emphasized produce shelf-life (i.e., stocking the refrigerator with the fruits and vegetables that spoil the fastest). Only one storeowner reported making stocking decisions to meet the CDFA grant requirements. This storeowner reported they only stock the refrigerator with local, unprocessed CA-grown produce to follow the rules of the program.

One storeowner reported prioritizing produce that is culturally appropriate to their customer base, while another storeowner focused on stocking grab-and-go items such as salads, pre-cut vegetables, and pressed juices, as their customer base mostly stops in to buy lunch. Another storeowner said they only stock a small quantity of produce because they can buy more produce to stock as-needed rather than risk produce spoilage.

Stocking California-grown produce

While many storeowners expressed that stocking CA-grown produce is personally important to them, almost all storeowners reported purchasing CA-grown produce is of low priority to their customers. Storeowners reported their customers care most about the freshness, quality, and affordability of produce. Some storeowners mentioned stocking exclusively CA-grown produce would disappoint customers because it would prohibit stores from stocking produce grown out of season or out-of-state.

"For the most part, I don't think customers are really reading into whether or not it's from California or not. They're just looking for the specific produce item."

In contrast, a few storeowners reported having a customer base that was looking specifically for locally grown produce, especially since the COVID-19 pandemic. These storeowners reported customers appreciate knowing the source of their produce, as a way of supporting local farmers and ensuring produce quality.

Further, most storeowners reported prioritizing accessibility, availability, and price when procuring produce—not necessarily origin of sourcing. The few stores that reported purchasing CA-grown fruits and vegetables to meet the requirements of the CDFA Refrigeration Grant program reported they purchase produce directly from local farmers. If they purchase non-CA-grown produce, they buy it from a separate vendor and do not store it in the CDFA refrigerator.

Most storeowners identified the produce they bought as CA-grown by looking at a sticker or label directly on the item or on the box it was sent in. For storeowners who buy their fruits and vegetables directly from farmers, they identified whether an item is grown locally by talking to the vendor. A few stores reported their distributer or wholesaler did not identify where their produce was sourced.

When asked what support was needed besides the new refrigerator to sell more CA-grown fruits and vegetables, the most common response was marketing. Many storeowners felt frustrated that they had a brand-new refrigerator and well-stocked produce but did not have the resources to promote this change to customers. Storeowners expressed they would appreciate help adding signage to their stores promoting CA-grown produce and indicated an interest in posters and other marketing materials to attract customers. One storeowner mentioned needing additional support to remodel their store layout to help draw in customers.

"I don't know, there's a lot of existing kind of marketing resources probably within the CDFA sphere around 'buy California.' And just like existing kind of signage and resources, you know, marketing collateral that we might have been able to tap into."

When trying to sell CA-grown produce, many storeowners faced obstacles including limited customer knowledge and/or interest in locally grown produce, lack of sourcing information from wholesalers, and high prices for produce grown at local farms. Storeowners reported needing additional support providing education to customers about the importance of buying locally grown fruits and vegetables and help encouraging wholesalers and distributers to label their CA-grown fruits and vegetables.

A few storeowners discussed needing support finding connections to farms selling affordable CA-grown produce. They found locally grown fruits and vegetables to be more expensive and would appreciate help finding vendors selling produce at lower prices. Additional storeowner recommendations are included in the "Program recommendations" section of the discussion of this report (pages 39-40).

Quality, quantity, price, and sales of produce

Since receiving the CDFA refrigerator, storeowners reported being able to increase the quantity, quality, and freshness of the fruits and vegetables they sell. Storeowners reported the refrigerator provided more space and a better ability to store and display the produce. With the refrigerator, most storeowners reported being able to stock fresher fruits and vegetables for longer. Some storeowners mentioned being able to carry produce items they were unable to stock prior to installing the CDFA refrigerator.

"*Now we carry watermelon, pineapple, papaya, and like the bigger fruits. There wasn't room before."*

No storeowners reported increasing or decreasing produce prices because of the CDFA refrigerator. Many storeowners mentioned their produce prices reflect the market price and a few discussed not increasing produce prices to maintain competitive pricing with larger grocery stores. Eight of the fourteen stores reported their produce sales increased due to the CDFA refrigerator.

"*We have seen a considerable bump in our fresh fruits and vegetables sales."*

The remaining six stores reported their sales were not appreciatively impacted by the CDFA refrigerator. However, many of these stores reported their sales were impacted by COVID-19, which put upward pressure on produce prices—one store even reported closing to walk-in customers and using their refrigerator for storage rather than merchandising during the pandemic.

Storeowners also reported mixed experiences with overall (non-produce specific) sales due to the CDFA refrigerator. Six storeowners found overall store sales increased because of the refrigerators, while three storeowners found no change, and one storeowner reported a decrease in sales. This storeowner cited reduced retail space for non-produce items as the reason for this decline.

Impact of refrigeration units on waste

The impact of the CDFA refrigerator on produce waste varied among stores. Two storeowners reported their produce waste decreased because of the CDFA refrigerator, citing the refrigerator's ability to prolong produce freshness. Another storeowner reported produce waste was practically eliminated, because the aesthetically pleasing display helps the store to frequently sell out of produce.

"Like, we don't throw away a lot of stuff like we used to because of the display– the refrigerator displays it like perfect."

A few storeowners reported their percentage of waste increased because of the refrigerator, as they increased the amount of produce they stocked, accepting that some amount would be wasted. These storeowners felt it was more important to showcase a larger selection of produce to build customers' confidence in the store, even if it came at the cost of increased waste. Other storeowners reported no change in produce waste before and after installing the refrigerator.

Store changes beyond refrigeration units

At follow up, almost all storeowners reported making changes to their stores besides installing a refrigerator, after participating in the Refrigeration Grant Program. Many storeowners reported the program inspired them to continue to sell more fruits and vegetables, and to stock healthier items in their store. Some storeowners reported working with additional local vendors to source products such as eggs and jam.

After installing their refrigerators, some storeowners focused on increasing their community relationships to help sell fruits and vegetables. One store began teaching their customers how to cook with different fruits and vegetables and shared recipes for the items they sold. Another store started using social media to advertise available fresh produce at the store.

A few stores received help remodeling their stores through other healthy retail initiatives. These remodels were intended to improve the overall atmosphere of each store and increase the visibility of their new produce displays. With the help of another program, one store was able to create a community area in their store with seating, Wi-Fi, and a free library system. One store was able to receive help marketing their store changes with flyers and other materials. After participating in the

Refrigeration Grant Program, one storeowner began working with a healthy retail initiative that connects storeowners to local farmers.

"I think the refrigeration was just the beginning for our team. So, adding the refrigeration definitely helped a lot and it kind of built up to another environment of, you know, what we want to continue with this very positive environment of feeling."

Storeowner recommendations

Most storeowners said they wouldn't do anything differently if they had the chance to participate in the program over again, but a few storeowners did recommend some changes to the program and shared what they wish they had done differently. One storeowner expressed they would have asked for more assistance installing their refrigerator while another would have been more conscientious about purchasing strictly CA-grown fruits and vegetables. Another storeowner shared they would have ensured the refrigerator they selected was appropriate to meet their needs. Additional storeowner recommendations are included in the "Program recommendations" section of the discussion of this report (pages 39-40).

Customer survey

Customer demographics and shopping behaviors

Customers surveyed at baseline and follow up were similar across many demographic dimensions, but were statistically significantly different on whether they participated in WIC ($p < 0.05$) and their race/ethnicity. A higher percentage of participants were found to be food insecure at baseline than at follow up (Table 5).

Table 5. Demographics of customer survey baseline and follow up samples

	Baseline sample n = 83	Follow up sample n = 52	Difference between baseline and follow up samples
Age	**n (%)**	**n (%)**	**Percentage points**
18-30	25 (30.1%)	17 (32.7%)	2.6
31-50	31 (37.3%)	26 (50%)	12.7
51-70	22 (26.5%)	8 (15.4%)	-11.1
71+	4 (4.8%)	1 (1.9%)	-2.9
Prefer not to answer	1 (1.2%)	0 (0%)	-1.2
Gender	**n (%)**	**n (%)**	**Percentage points**
Female	45 (54.2%)	23 (44.2%)	-10
Male	38 (45.8%)	28 (53.8%)	8
Other/non-binary	0 (0%)	1 (1.9%)	1.9
Race/Ethnicity[1,2]	**n (%)**	**n (%)**	**Percentage points**
American Indian or Alaska Native	3 (3.6%)	2 (3.8%)	0.2
Asian	0 (0%)	8 (15.4%)	15.4
Black or African American	25 (30.1%)	10 (19.2%)	-10.9
Hispanic or Latinx	43 (51.8%)	22 (42.3%)	-9.5
Native Hawaiian or Pacific Islander	1 (1.2%)	0 (0%)	-1.2
White	13 (15.7%)	7 (13.5%)	-2.2
Other	1 (1.2%)	2 (3.8%)	2.6
Prefer not to answer	1 (1.2%)	5 (9.6%)	8.4
Language normally spoken at home[1]	**n (%)**	**n (%)**	**Percentage points**
Arabic	2 (2.4%)	1 (1.9%)	-0.5
English	62 (74.7%)	41 (78.8%)	4.1
Mandarin or Cantonese	0 (0%)	1 (1.9%)	1.9
Spanish	43 (51.8%)	21 (40.4%)	-11.4
Other	2 (2.4%)	2 (3.8%)	1.4
Prefer not to answer	0 (0%)	1 (1.9%)	1.9
SNAP Receipt	**n (%)**	**n (%)**	**Percentage points**
Received SNAP (CalFresh) in the past year	31 (37.3%)	21 (40.4%)	3.1
WIC receipt[2]	**n (%)**	**n (%)**	**Percentage points**
Received WIC in the past year	14 (16.9%)	3 (5.8%)	-11.1
Food security status	**n (%)**	**n (%)**	**Percentage points**
Food insecure	25 (30.1%)	10 (19.2%)	-10.9

Highest level of education	n (%)	n (%)	Percentage points
Grade 1-12 (no diploma)	13 (15.7%)	4 (7.7%)	-8
High school graduate/GED	25 (30.1%)	13 (25%)	-5.1
Vocational certificate	3 (3.6%)	1 (1.9%)	-1.7
Some college or Associate's degree	24 (28.9%)	15 (28.8%)	-0.1
Bachelor's degree	11 (13.3%)	11 (21.2%)	7.9
Master's degree or higher	4 (4.8%)	3 (5.8%)	1
Prefer not to answer	0 (0%)	4 (7.7%)	7.7
Don't know	3 (3.6%)	1 (1.9%)	-1.7
Daily Activities	**n (%)**	**n (%)**	**Percentage points**
Retired or disabled	10 (12%)	5 (9.6%)	-2.4
Stay at home, providing unpaid care for children/adults full-time	6 (7.2%)	2 (3.8%)	-3.4
Student	2 (2.4%)	4 (7.7%)	5.3
Unemployed or laid off	4 (4.8%)	3 (5.8%)	1
Working full-time	46 (55.4%)	25 (48.1%)	-7.3
Working part-time	9 (10.8%)	8 (15.4%)	4.6
Prefer not to answer	4 (4.8%)	5 (9.6%)	4.8
Don't know	2 (2.4%)	0 (0%)	-2.4
Household Income	**n (%)**	**n (%)**	**Percentage points**
Less than $15,000	19 (22.9%)	9 (17.3%)	-5.6
$15,000 - $29,999	16 (19.3%)	7 (13.5%)	-5.8
$30,000 - $39,999	10 (12%)	5 (9.6%)	-2.4
$40,000 - $49,999	8 (9.6%)	3 (5.8%)	-3.8
$50,000 - $59,999	1 (1.2%)	4 (7.7%)	6.5
$60,000 - $69,999	4 (4.8%)	4 (7.7%)	2.9
$70,000 - $79,999	2 (2.4%)	2 (3.8%)	1.4
$80,000 - $89,999	3 (3.6%)	1 (1.9%)	-1.7
More than $90,000	3 (3.6%)	7 (13.5%)	9.9
Don't know	10 (12%)	1 (1.9%)	-10.1
Prefer not to answer	7 (8.4%)	9 (17.3%)	8.9

[1] Respondents could select more than one response.

[2] Distribution of baseline and follow up data were different at a statistically significant level of $p > 0.05$.

A much larger portion of customers reported shopping at the store daily at baseline compared to follow up (42% vs. 19%). At follow up, the most commonly reported shopping frequency was “a couple times a week” (reported by 35% of customers). Only 12% of customers at baseline and 8% of customers at follow up reported it was their first time shopping at the store, or that they shop at the store less than once per month.

Customer reasons for purchasing fruits and vegetables

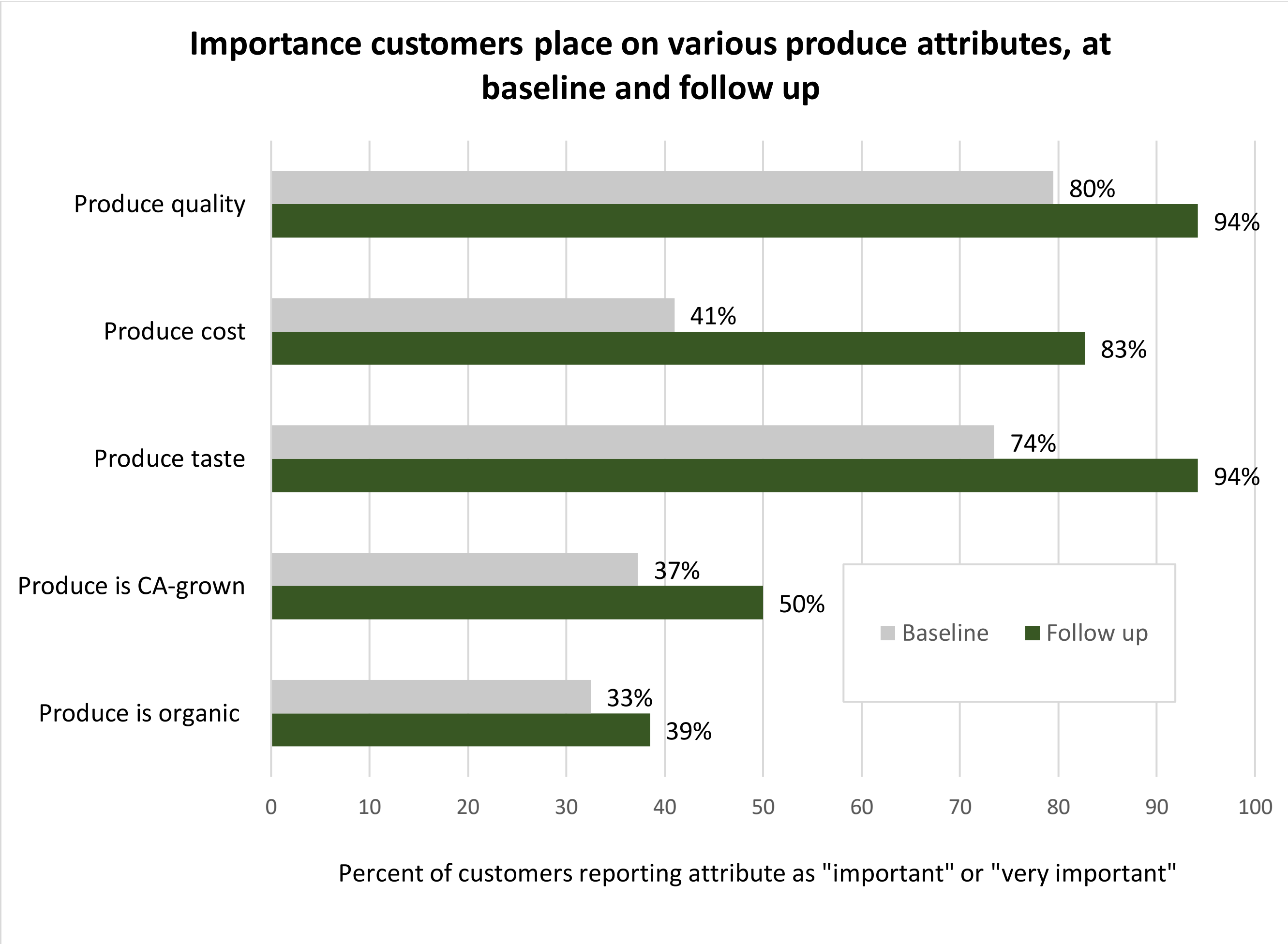
Among customers that bought at least some produce in the last month at stores participating in the CDFA Refrigeration Grant Program, the most common reason reported for purchasing produce was “this store is convenient” (reported by 98% of customers at baseline and 88% at follow up). The next most common reason customers reported was “this store carries the items I want to buy” (reported by 89% customers at baseline and 67% at follow up). However, this question was a multiple-response question, and customers in the follow up sample selected fewer responses than did customers in the baseline sample. It is possible customers in the follow up sample may have truly had fewer reasons for purchasing produce, but it is also possible that the difference in data collection methods biased the results. Most baseline surveys were administered in-person, by NPI researchers, whereas follow up surveys were largely self-administered by the customers themselves. Full statistics, for reference, are available in Appendix E, Table 5.

Customers in the follow up sample also selected fewer responses to the multiple-response question “why don’t you purchase produce at this store?” than did customers in the baseline sample. However, at both baseline and follow up, the primary reason customers cited was “This store is not convenient/ I prefer shopping for produce elsewhere” (reported by 61% of customers at baseline and 67% at follow up). Full statistics, for reference, are available in Appendix E, Table 6.

A large majority of customers (70% at both baseline and follow up) reported that it was very important to them that the store stocks fruits and vegetables. A smaller percentage reported it was important the store stocks CA-grown produce (58% at baseline and 48% at follow up).

Customers reported taste, quality, and cost as being most important to them when purchasing produce (Figure 7).

Figure 7. Percent of customers reporting produce attributes as "important" or "very important" at baseline and follow up



At both baseline and follow-up, some customers responded that the store could encourage them to purchase more produce in other ways than survey questions gathered. The most common suggestion was to increase the variety/quantity of produce (reported by 41% of participants at baseline and 59% at follow up). Multiple customers reported that lower prices would encourage them to purchase more produce (24% of customers at baseline, 23% at follow up). Customers also reported improving produce quality, increasing produce advertising, increasing produce visibility (such as displaying produce outside the front of the store), and offering more organic produce options as ways stores could encourage them to purchase more produce.

Where customers purchase their produce

The majority of customers reported purchasing their produce at a supermarket, both at baseline (65%) and at follow up (54%). Around a quarter reported purchasing their produce at a small market at both baseline and at follow up.

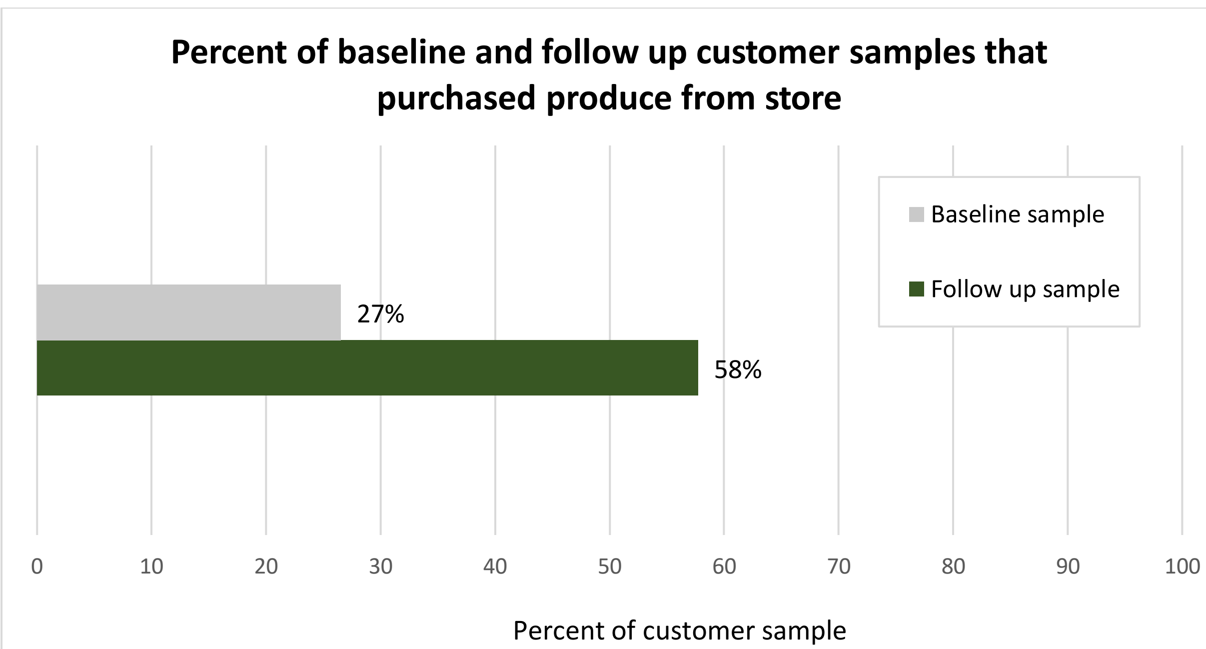
When customers were asked about how much of their monthly produce they purchase at the store participating in the CDFA Refrigeration Grant Program, far fewer shoppers reported purchasing none or very little of their produce from the store at follow up compared to baseline. Thus, more shoppers reported purchasing more than a little of their produce at the store at follow up. For example, while 30% of customers reported purchasing none of their monthly produce at the store at baseline, only 16% of customers reported this at follow up—an almost 50% decrease. A full table of results is available in Appendix E, Table 7.

Customers were also asked how easy it is to access affordable, appealing, high quality fresh fruits and vegetables in the neighborhood surrounding the store. 48% of customers at baseline and follow up reported "moderate" or "easy," 19% reported "very easy," and the remaining customers reported "difficult" or "very difficult." A full table of results is available in Appendix E, Table 8.

Customer produce purchases

A higher percentage of customers reported purchasing produce from a CDFA refrigeration grant store at follow up compared to baseline (Figure 8).

Figure 8. Percent of baseline and follow up customer samples that purchased any produce from stores that installed the CDFA refrigerator



When the analysis was restricted to stores with at least 5 surveys at baseline and follow up, there was still a consistent increase in the percentage of customers purchasing produce at follow up compared to baseline.

The percentage of customers reporting *going to the store to purchase fruits* increased by 33 percentage points, and the percentage of customers reporting *going to the store to purchase vegetables* increased by 30 percentage points (Figure 9). When the analysis was restricted to stores with at least 5 surveys at baseline and follow up, there was still a consistent increase in the percentage of customers reporting going to the store to purchase produce at follow up compared to baseline.

Figure 9. Percent of baseline and follow up customer samples that reported going to a CDFA grant-participating store to purchase fruits and/or vegetables

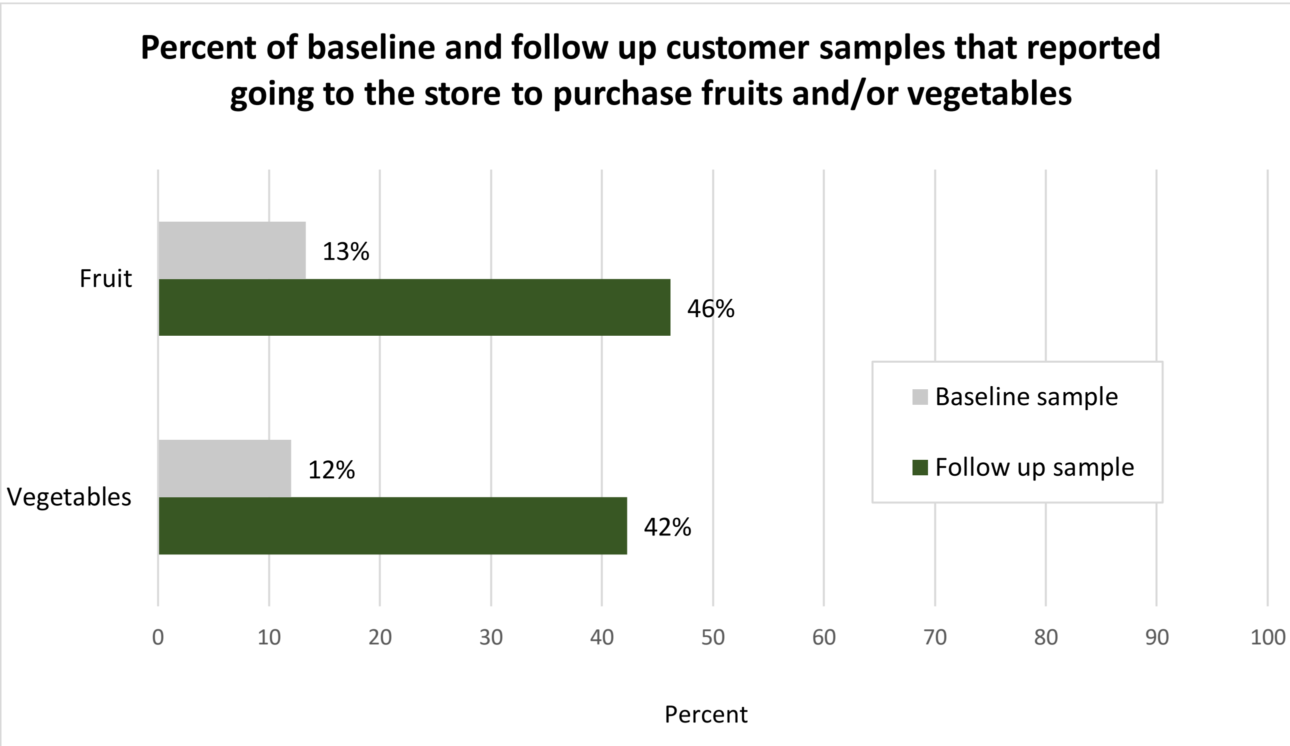


Table 6 details the changes in particular produce items—those that were most commonly purchased—at baseline and follow up.

Table 6. Produce items most commonly purchased among customers at program-participating stores, before and after refrigerator installation

	Baseline	Follow up
Produce purchased	**Number of customers reporting purchased produce item (% of total customers reporting purchased produce item)**	
Avocado	0 (0%)	8 (26.7%)
Bananas	4 (18.2%)	8 (26.7%)
Carrots	0 (0%)	5 (16.7%)
Cilantro	4 (18.2%)	6 (20%)
Onion	1 (4.5%)	5 (16.7%)
Peppers	0 (0%)	4 (13.3%)
Tomatoes	5 (22.7%)	9 (30%)
Broccoli	0 (0%)	4 (13.3%)
N[1]	22	30

[1]N includes all customers that reported purchasing produce, not just those that reported purchasing the items included in the table.

Few customers reported purchasing nuts at the store at baseline (2%); more purchased nuts at follow up (19%). Among follow up participants who purchased nuts, peanuts were the most commonly purchased, followed by almonds and cashews. Most participants did not know whether the nuts they purchased were CA-grown, and most reported the nuts were not stored in the refrigerator.

Characteristics of customer produce purchases

Of the customers that purchased produce at stores participating in the CDFA Refrigeration Grant Program, a higher percentage reported that all of the produce they purchased was CA-grown at follow up (30%) compared to baseline (14%). Most customers, however, reported that they did not know whether the produce they purchased was CA-grown (60% of customers at baseline, 50% at follow up). More customers that purchased produce at follow up reported that all of it was stored in the refrigerator (45% of customers at baseline, 60% at follow up).

Discussion

This study evaluated the CDFA Healthy Refrigeration Grant Program using a pre/post mixed-methods approach. Storeowner surveys, storeowner interviews, and surveys of small cross-sectional samples of customers were used to gather information about experiences with the Refrigeration Grant Program and changes in produce offerings and purchases at participating stores.

Overall, storeowners reported positive experiences with the Healthy Refrigeration Grant program and recommended it to other storeowners. From baseline to follow up, fewer storeowners reported lack of refrigeration as a barrier to stocking fresh produce. Storeowners cited several positive impacts of the program: many reported increasing the variety and freshness of produce they sell, improving their produce display, and improving the health and wellbeing of their community. The full impact of the Healthy Refrigeration Grant Program on produce variety, sales, and freshness could not be fully assessed, primarily due to COVID-19-related delays in program implementation and data collection, as well as supply chain and other disruptions complicating the evaluation. Including comparison stores would benefit future evaluations, to better assess program effects even in the context of unanticipated broad social changes.

A few storeowners reported some negative experiences with the program, mainly related to inadequate technical assistance.

Storeowners indicated the program could be improved by relaxing the requirement that the refrigerators be stocked with CA-grown produce. Storeowners reported an inability to meet customers' needs if they stocked only CA-grown produce, and both storeowner and customer surveys indicated customers do not place a high value on whether their produce is CA-grown.

The limitations of this study are mostly due to disruptions related to the COVID-19 pandemic. Pandemic-related supply chain issues delayed refrigerator delivery and installation, which subsequently prolonged data collection. The extended timeline and transition to remote data collection created issues collecting baseline and follow up storeowner surveys and made it more difficult to recruit participants for customer surveys.

A future evaluation of the CDFA Refrigeration Grant Program would be improved by tightening the study timeline, increasing the number of customers surveyed, and increasing the percentage of storeowners that complete baseline and follow up surveys. Including comparison stores that do not receive refrigeration units would improve the rigor of the quantitative aspects of the evaluation design. Qualitative data collection was less impacted by the COVID disruptions and was therefore more informative. A future evaluation may benefit from a stronger emphasis on qualitative data collection.

Recommendations for future studies of the grant program

Future research could survey a larger sample of customers. Ideally, the customer sample would be the same from baseline to follow-up, to prevent differences in baseline/follow up samples; however, following customers over long periods of time may not be feasible. Therefore, this type of study design could only be implemented if baseline and follow up data collection can happen within a period of 6-8 weeks of one another. This timeline may be difficult to follow, as stores must be certain of their refrigeration installation timeline for data so data collection visits can be planned accordingly.

Storeowner surveys might benefit from asking questions about produce sales more broadly, rather than for specific types of produce. Future evaluations could consider collecting data about produce variety during store visits, to avoid issues with storeowner self-reporting, as there was some question about the quality of the self-reported data, particularly at follow-up, in the present evaluation. Future evaluations should also enforce more rigid data collection timelines so that data are collected in the same season at baseline and at follow up to prevent issues of seasonality.

Program recommendations

The following recommendations were developed based on findings from all data collection modalities.

1) Streamline the refrigerator selection and delivery process

Storeowners reported delays in the amount of time it took for CDFA to approve their refrigeration selection and deliver the unit to their store. Storeowners suggested CDFA shorten the time to approve refrigerator selections and deliver the refrigerators more quickly.

2) Offer storeowners additional technical assistance in selecting and installing the CDFA refrigerator

To help storeowners choose the best unit for their store and meet their specific needs, having extra technical assistance is recommended. Storeowners expressed interest in having a list of commonly overlooked features when selecting a refrigerator and suggested CDFA provide a modest allowance through grant funding to help cover retrofitting needed to accommodate the refrigerator. Storeowners cited added electrical costs to installing the new refrigerator, and suggested CDFA provide funds to cover these costs as well.

3) Provide storeowners with marketing materials to promote the new refrigerator

After installing the CDFA refrigerator and stocking it full of fresh produce, many storeowners wanted a way to promote this change in their store to customers. Storeowners expressed interest in adding signage to their stores promoting the new refrigerator and indicated an interest in posters and other marketing materials to attract customers. One storeowner mentioned needing additional support to remodel their store layout to help draw in customers. CDFA could aid storeowners by supporting the development and distribution of marketing materials, and providing design assistance.

4) Assist storeowners with the sourcing of affordable, fresh California-grown fruits and vegetables

Storeowners expressed an interest in sourcing CA-grown produce, but discussed obstacles associated with local procurement. Some storeowners found locally grown produce more expensive than non-locally grown produce, and expressed needing assistance finding local produce at lower prices. Several storeowners reported it was difficult to identify if produce was CA-grown, and wished wholesalers and distributers labeled their CA-grown fruits and vegetables more consistently. One storeowner wanted help physically procuring CA-grown fruits and vegetables, as they have limited time to leave the store and have few to no additional employees. Many storeowners simply wanted to be connected to local producers in their area.

CDFA could assist storeowners with the sourcing of CA-grown produce by providing storeowners with directories of local farms, connecting storeowners to growers in the area, or encouraging distributors to consistently label their produce. Additionally, CDFA may want to consider working to create systems in which source location of produce is more transparent, as it is a challenge for all purchasers to intentionally buy CA-grown when it is so difficult to know the source of produce during procurement.

5) Assist storeowners with the marketing of California-grown produce

Storeowners reported needing additional support marketing their CA-grown produce, and educating customers about the benefits of locally grown fruits and vegetables. Both storeowners and customers reported "CA-grown" is not a priority for customers when they purchase produce, indicating more education is needed about the health, economic, and environmental benefits of locally grown produce. Storeowners suggested CDFA develop and distribute downloadable marketing materials such as shelf tags and posters to promote CA-grown produce.

6) Relax the requirement that produce stored in the CDFA refrigerator be California-grown

Because of the obstacles associated with procuring and selling CA-grown produce, some storeowners reported wanting the refrigeration grant program to place less emphasis on stocking CA-grown produce and focus more on produce quality and affordability. If this is not possible, additional support with CA-grown produce procurement and marketing would be recommended.

7) Utilize the experience of previous grant participants to develop resources for future program participants

The CDFA Refrigeration Grant Program was well-received among storeowners. When asked what advice storeowners would give to future grantees, the most common response was to encourage them to participate in the program. Storeowners highlighted how the program increases business and invests in the health and wellbeing of the community.

Storeowners also had recommendations for future grantees. For example, storeowners suggested future grantees take advantage of technical assistance opportunities, and receive a cost estimate from an electrician before selecting a refrigerator.

CDFA could compile storeowner experiences and advice to help future grantees best utilize the program. CDFA could provide future grantees with a list of refrigerator options, vetted by previous participants, and a directory of local farmers willing to sell to cornerstores, in addition to storeowner testimony. Previous participants are the best experts on navigating the program, and their experiences should prove helpful when expanding and implementing future versions of the program.

"*I think there should be a lot more people taking advantage of this opportunity and I hope they are.*"

- *CDFA Refrigeration Grant Program participant*

Conclusion

Providing funds to corner stores in food resource poor neighborhoods to purchase refrigerators appeals to stores and leads to perceived increased availability of fresh produce. The degree to which the program impacted the types, amounts, and prices of CA grown produce sold was difficult to determine from the present evaluation, but more work can be done to assess this. Potential improvements to the program include increasing provision of technical assistance for selecting and installing the refrigerator, and relaxing the CA-grown requirement for produce procurement. The CDFA Healthy Refrigeration Grant Program was appreciated by program participants who perceived the program to benefit their stores, their customers, and their communities.

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Appendix A. Storeowner survey sub-analysis: Non-traditional grant recipients

Of the 60 grant recipients that participated in the CDFA Refrigeration Grant Program and completed baseline and follow up surveys, 9 were characterized as "non-traditional."

"Non-traditional" grant recipients mostly consisted of farms and farmstands, but for the purpose of this analysis they are referred to as "non-traditional stores." Only nine grant recipients were in this category, six of which reported installing the CDFA refrigerator at follow up. Given the small sample size, the ability to draw conclusions from the data is limited, but comparisons to the traditional sample can still be insightful.

Demographics of the non-traditional sample were similar to demographics of the traditional sample, except a higher percentage of the non-traditional sample reported their primary language as English, rather than Spanish, and a higher percentage of the non-traditional sample reported having received a Bachelor's degree or higher. Another difference between the traditional and non-traditional samples was the percentage of the non-traditional sample (45%, or 4 respondents) that reported "other" when asked about their relationship to the store. Most survey respondents in the traditional sample reported being the owner or manager of the store. For this reason, survey respondents are referred to as "store representatives" rather than "storeowners" when discussing the non-traditional sample.

Compared to traditional corner stores, a smaller percentage of non-traditional stores participated in other healthy retail initiatives and/or provided their staff with training about stocking, promoting, or marketing fruits and vegetables. On average, non-traditional stores reported having fewer (if any) additional food refrigerators, compared to traditional corner stores.

Results regarding experiences with the CDFA refrigerator and changes in produce sourcing, stocking, and selling were similar among the traditional and non-traditional store samples. Among non-traditional stores that installed the CDFA refrigerator, there was a decline from baseline to follow up in the percentage of store representatives reporting "lack of refrigeration" as a reason for not stocking more fruits and vegetables—similar to the traditional corner store sample. The majority of non-traditional store representatives reported planning to increase the quantity of fresh fruit and vegetables they sell in the coming year—also similar to the traditional corner store sample. Non-traditional store representatives were less certain than traditional storeowners, however, in their plans to increase sales of ready-to-eat produce.

The majority of non-traditional store representatives reported using the CDFA refrigerator as an additional refrigerator or a replacement for a previous refrigerator—similar to the traditional corner store owners. Non-traditional store representatives reported stocking the refrigerator with whole fresh fruits and vegetables (reported by 100% of store representatives), dairy (reported by 25% of store representatives), minimally processed foods, nuts, and prepared food.

All non-traditional store representatives reported they were very likely to keep using the refrigerator. The majority of non-traditional store representatives reported they planned on using the refrigerator for most/all fruits and vegetables—similar to the traditional corner store sample. Non-traditional store representatives reported the CDFA refrigerator was helpful at increasing the store's ability to sell produce, increasing the store's produce sales, increasing the store's profitability, and helping the store better serve the community (also similar to the traditional corner store sample). Non-traditional store representatives reported receiving similar types of technical assistance as traditional corner storeowners, and reported finding each type of technical assistance similarly useful.

Compared to traditional stores, non-traditional stores reported selling fewer varieties of fruit at baseline and at follow up, but a larger variety of vegetables at baseline and follow up. However, only 5 (of 6 possible) non-traditional stores representatives reported the number of varieties of fruits and vegetables they sell. Compared to traditional stores, non-traditional stores reported storing fewer varieties of fruit and vegetables in the refrigerator at baseline and follow up, and a smaller percentage of non-traditional stores reported selling prepared fruits and vegetables at baseline and follow up.

A large percentage of non-traditional store representatives selected “other” and wrote in “we grow our own” to the question, “where does your store buy CA-grown produce,” whereas no traditional storeowner wrote in this response to this question. A high percentage of store representatives (83%, or five respondents) at baseline and follow up reported a main reason they sell CA-grown produce is because it is important to their customers, whereas only 57% of the traditional sample at baseline and 41% at follow up reported importance to customers as a reason for selling CA-grown produce. This may be because customers seek out non-traditional stores like farms and farmstands to purchase local produce.

Appendix B. Data collection instruments

Pre/post Storeowner Survey

1. What is your store name? ____

2. How many cash registers does your store have?
   - ○ 1
   - ○ 2
   - ○ 3 or more

3. About how much of your store space is used for selling food (any type, including fresh produce, bread and snack foods), excluding beverages?
   - ○ All
   - ○ More than half (but not all)
   - ○ Around half
   - ○ Less than half (but not none)
   - ○ None

4. Does your store accept Calfresh benefits, sometimes called EBT, SNAP, or food stamps?
   - ○ Yes
   - ○ No

5. Does your store accept WIC (The Special Supplemental Nutrition Program for Women, Infants, and Children)?
   - ○ Yes
   - ○ No

<u>FRUIT</u>

6. Does your store currently sell whole, fresh fruit?
   - ○ Yes ***[if yes, continue with the survey]***
   - ○ No ***[skip questions 7-12a]***

Questions 7-11: Characteristics of fruit sold in stores

Bananas	Apples	Oranges	Grapes	Strawberries
7. Does your store sell bananas? ○ Yes ○ No	8. Does your store sell apples? ○ Yes ○ No	9. Does your store sell oranges? ○ Yes ○ No	10. Does your store sell grapes? ○ Yes ○ No	11. Does your store sell strawberries? ○ Yes ○ No

[If no, skip rest of column]	***[If no, skip rest of column]***	***[If no, skip rest of column]***	***[If no, skip rest of column]***	***[If no, skip rest of column]***
	Are any of the apples that you sell California-grown? ○ Yes ○ No ○ Don't know	Are any of the oranges that you sell California-grown? ○ Yes ○ No ○ Don't know	Are any of the grapes that you sell California-grown? ○ Yes ○ No ○ Don't know	Are any of the strawberries that you sell California-grown? ○ Yes ○ No ○ Don't know
	Where are the apples displayed? (check all that apply) ○ Refrigerator Not in refrigerator	Where are the oranges displayed? (check all that apply) ○ Refrigerator ○ Not in refrigerator	Where are the grapes displayed? (check all that apply) ○ Refrigerator ○ Not in refrigerator	Where are the strawberries displayed? (check all that apply) ○ Refrigerator ○ Not in refrigerator
Using these definitions of quality (Poor quality = bruised, overripe, wilted; Good quality = fresh, not overripe, few blemishes), please rate the quality of the fruit.				
How would you rate the quality of the bananas? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of apples? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of oranges? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of grapes? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of strawberries? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer
Thinking about sales in the past month, about how much or how many bananas did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds or a count of individual bananas (pieces) and whether your estimate	Thinking about sales in the past month, about how much or how many apples did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds or a count of individual apples (pieces), or in packages/bags. Then tell us whether this estimate	Thinking about sales in the past month, about how much or how many oranges did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds or a count of individual oranges (pieces), or in packages/bags. Then tell us whether this estimate	Thinking about sales in the past month, about how much or how many grapes did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds or in packages/bags. Then tell us whether this estimate is sold per day, week, or month.	Thinking about sales in the past month, about how much or how many strawberries did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds or in packages/bags. Then tell us whether this

is per day, week, or month. # of products sold ________ Unit ○ pounds ○ pieces Per ○ day ○ week ○ month How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all	is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ piece ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all	is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ piece ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all	 # of products sold ________ Unit ○ pounds ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all	estimate is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all
Find the price of [insert fruit. If more than 1 option is available, choose the least expensive [insert fruit] and note the unit/size information. When possible, please tell us the price per pound. If you sell by the piece, you can tell us the price of a piece (ex: 1 banana costs $0.75). If you sell by the package, please tell us the price and weight of that (ex: a 3-pound bag of oranges costs $4.50).				
What is the price of the bananas that your store sells? If there is more than one, what is the price of the least expensive variety of bananas? Price: $__.___ per ○ pound ○ piece	What is the price of the apples that your store sells? If there is more than one, what is the price of the least expensive variety of apples? Price: $__.___ Per ○ pound ○ piece ○ package [Show if respondent marked package]	What is the price of the oranges that your store sells? If there is more than one, what is the price of the least expensive variety of oranges? Price: $__.___ Per ○ pound ○ piece ○ package [Show if respondent marked package]	What is the price of the grapes that your store sells? If there is more than one, what is the price of the least expensive variety of grapes? Price: $__.___ Per ○ pound ○ package [Show if respondent marked package] How much does the container weigh? Please be specific:	What is the price of the strawberries that your store sells? If there is more than one, what is the price of the least expensive variety of strawberries? Price: $__.___ Per ○ pound ○ package [Show if respondent marked package] How much does the package weigh? Please be specific:

	How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______	How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______	# pounds and/or ______ # ounces_______	# pounds and/or ______ # ounces_______
Is the banana that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Is the apple that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Is the orange that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Are the grapes that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Are the strawberries that you gave the price for California-grown? ○ Yes ○ No ○ Don't know
Is the banana that you gave the price for organic? ○ Yes ○ No ○ Don't know	Is the apple that you gave the price for organic? ○ Yes ○ No ○ Don't know	Is the orange that you gave the price for organic? ○ Yes ○ No ○ Don't know	Are the grapes that you gave the price for organic? ○ Yes ○ No ○ Don't know	Are the strawberries that you gave the price for organic? ○ Yes ○ No ○ Don't know

12. Does your store currently sell any other fresh fruits besides bananas, apples, oranges, grapes, or strawberries?

- ○ Yes
- ○ No

[If respondent answers yes to Q12, show Q13]

13. Which ones? Please check all that apply.
- ○ [Checklist/grid: Blueberries, Raspberries, Blackberries, Pears, Mangos, Pineapples, Peaches/Nectarines, Apricots, Cherries, Plums, Grapefruits, Mandarins/Clementines, Melons, Lemons, Limes]
- ○ Other: ______________________________

VEGETABLES

14. Does your store sell whole, fresh vegetables?
    - ○ Yes ***[If yes, continue with the survey]***
    - ○ No ***[If no, skip questions 14-19a]***

Questions 15-20: Characteristics of vegetables sold

Carrots	Tomatoes	Sweet peppers	Broccoli	Lettuce
15. Does your store sell carrots?	16. Does your store sell tomatoes? ○ Yes	17. Does your store sell sweet	18. Does your store sell broccoli?	19. Does your store sell lettuce? ○ Yes

○ Yes ○ No ***[If no, skip rest of column]***	○ No ***[If no, skip rest of column]***	peppers (red, orange, and/or green bell peppers)? ○ Yes ○ No ***[If no, skip rest of column]***	○ Yes ○ No ***[If no, skip rest of column]***	○ No ***[If no, skip rest of column]***
Are any of the Carrots that you sell California-grown? ○ Yes ○ No ○ Don't know	Are any of the tomatoes that you sell California-grown? ○ Yes ○ No ○ Don't know	Are any of the sweet peppers that you sell California-grown? ○ Yes ○ No ○ Don't know	Is any of the broccoli that you sell California-grown? ○ Yes ○ No ○ Don't know	Is any of the lettuce that you sell California-grown? ○ Yes ○ No ○ Don't know
Where are the carrots displayed? (check all that apply) ○ Refrigerator Not in refrigerator	Where are the tomatoes displayed? (check all that apply) ○ Refrigerator Not in refrigerator	Where are the peppers displayed? (check all that apply) ○ Refrigerator ○ Not in refrigerator	Where is the broccoli displayed? (check all that apply) ○ Refrigerator ○ Not in refrigerator	Where is the lettuce displayed? (check all that apply) ○ Refrigerator ○ Not in refrigerator
Using these definitions of quality (Poor quality = bruised, overripe, wilted; Good quality = fresh, not overripe, few blemishes), rate the quality of the vegetable.				
How would you rate the quality of the carrots? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of tomatoes? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of peppers? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of broccoli? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer	How would you rate the quality of lettuce? ○ All good quality ○ More good quality than poor quality ○ Equal proportion of good and poor quality ○ All poor quality ○ I don't know ○ Prefer not to answer
	The next questions will ask you about the **sales** of a particular type of tomato			The next questions will ask you about the **sales** of a particular type of lettuce

	that you sell. Please write in **one type of tomato you sell** (eg. Roma, Heirloom, Beefsteak, Cherry/grape tomatoes, etc.) ________			that you sell. Please write in **one type of lettuce you sell** (eg. Romaine, Iceberg, Butter lettuce, Red or green leaf lettuce, etc.) ________
Thinking about sales in the past month, about how much or how many carrots did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds, a count of individual carrots (pieces), or bags, and whether your estimate is per day, week, or month. # of products sold ________ Unit ○ pounds ○ pieces ○ package Per ○ day ○ week ○ month Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all	Thinking about sales in the past month, about how much or how many of this type of tomato did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds, a count of individual tomatoes (pieces), or in packages/bags. Then tell us whether this estimate is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ piece ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all	Thinking about sales in the past month, about how much or how many peppers did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds, a count of individual peppers (pieces), or in packages/bags. Then tell us whether this estimate is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ piece ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very	Thinking about sales in the past month, about how much broccoli did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds, pieces (stalks) or in packages/bags. Then tell us whether this estimate is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ piece (stalk) ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very	Thinking about sales in the past month, about how much of this type of lettuce did your store sell? In the next question, please be sure to tell us whether the number you gave us was in pounds, pieces (heads) or in packages/bags. Then tell us whether this estimate is sold per day, week, or month. # of products sold ________ Unit ○ pounds ○ piece (head) ○ package Per ○ day ○ week ○ month [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______ How confident are you in this estimate? ○ Very ○ Somewhat ○ Not very ○ Not at all

		○ Somewhat ○ Not very ○ Not at all	○ Not at all	
Find the price of [insert veg]. If more than 1 option is available, choose the least expensive [insert veg] and note the unit/size information. When possible, please tell us the price per pound. If you sell by the piece, you can tell us the price of a piece (ex: 1 carrot costs $0.75). If you sell by the package, please tell us the price and weight of that (ex: a 3-pound bag of carrots costs $4.50).				
What is the price of the carrots that your store sells? If there is more than one, what is the price of the least expensive variety of carrots? Price: $__.___ per ○ pound ○ piece ○ package Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______	What is the price of the tomatoes that your store sells? If there is more than one, what is the price of the least expensive variety of apples? Price: $__.___ Per ○ pound ○ piece ○ package Which type of tomato is this? ________________________ [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______	What is the price of the oranges that your store sells? If there is more than one, what is the price of the least expensive variety of oranges? Price: $__.___ Per ○ pound ○ piece ○ package [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______	What is the price of the broccoli that your store sells? If there is more than one, what is the price of the least expensive variety of broccoli? Price: $__.___ Per ○ pound ○ piece (stalk) ○ package [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______	What is the price of the lettuce that your store sells? If there is more than one, what is the price of the least expensive variety of lettuce? Price: $__.___ Per ○ pound ○ piece (head) ○ package Which type of lettuce is this? ________________________ [Show if respondent marked package] How much does the package weigh? Please be specific: # pounds and/or ______ # ounces_______
Is the carrot that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Is the tomato that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Is the pepper that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Is the broccoli that you gave the price for California-grown? ○ Yes ○ No ○ Don't know	Is the lettuce that you gave the price for California-grown? ○ Yes ○ No ○ Don't know
Is the carrot that you gave the price for organic? ○ Yes ○ No ○ Don't know	Is the tomato that you gave the price for organic? ○ Yes ○ No ○ Don't know	Is the pepper that you gave the price for organic? ○ Yes ○ No ○ Don't know	Is the broccoli that you gave the price for organic? ○ Yes ○ No ○ Don't know	Is the lettuce that you gave the price for organic? ○ Yes ○ No ○ Don't know

20. Do you sell any other fresh vegetables besides carrots, tomatoes, sweet peppers, broccoli, and lettuce?
○ Yes

- No

21. ***[Show only if respondent answers 'yes' to Q20]*** Which ones? Please check all that apply.
- [checklist/grid: Chili peppers, Mustard greens, Chard, Collard greens, Spinach, Kale, Cabbage. Bok choy, Brussels sprouts, Celery, Cucumber, Avocados, Summer squash, winter squash, Asparagus, String beans, Green peas, Onions, Leeks, Tomatillos, Mushrooms, Corn, Potatoes, Sweet potatoes, Cauliflower, Beets, Cactus, Radish, Eggplant, Cilantro]
- Other__________________

22. Which of the following types of prepared fresh fruits and vegetables do you sell? Please check all that apply.
    - Ready-to-eat fresh fruit (cut and washed, including items with dip) or fruit salads
    - Ready-to-eat vegetables (e.g. bag of baby carrots, celery with ranch)
    - Ready-to-eat vegetable salads (e.g. green salad, not including fruit salads)
    - Other__________________
    - None

23. What are the main reasons, that you do not stock **more fresh fruits and vegetables** in your store? Please select up to 3 options.

    ___ It's hard to find places to get fresh fruits and vegetables to sell

    ___ Fresh fruits and vegetables go bad before they're sold

    ___ The store has too little (or no) refrigeration space

    ___ Fresh fruits and vegetables are not available at supplier

    ___ Fresh fruits and vegetables are too expensive at supplier

    ___ There is not enough space in the store for fresh fruits and vegetables

    ___ Customers don't want/don't buy fresh fruits and vegetables

    ___ Other____________

    - None-there are no challenges to stocking more FV

24. [***Show only if respondents answered 'yes' to Q4 and/or Q11]*** If you had to guess, what proportion of fresh fruits and vegetables you stock would you say do not get sold?
    - More than half of the fresh fruits and vegetables I stock never sell
    - About half, or 50%, doesn't sell
    - About a quarter, or 25%, doesn't sell
    - None (All or almost all of the fresh fruits and vegetables I stock get sold)

25. [***Show only if respondents answered 'yes' to Q4 and/or Q11]*** What do you do with the fresh fruits and vegetables that do not get sold? Please check all that apply.
    - Throw them in the trash
    - Compost them
    - Donate them to charity or a community organization (such as food pantry or soup kitchen)

- Give them to customers (for free)
- Leave them on the street
- Take them home for personal/family use
- I do not have excess FV
- Other: ____

26. Do you sell nuts?
    - Yes
    - No
    - Don't know

27. **[If respondent answered yes to previous question]** Are the nuts you sell California-grown, not California-grown, or both?
    - California-grown
    - Not California-grown
    - Both
    - Don't know

28. Please rate how much you agree or disagree with the following statements:

	Strongly disagree	Disagree	Neutral (neither agree not disagree)	Agree	Strongly agree
a. Having a refrigeration unit will increase my ability to sell produce.	O	O	O	O	O
b. If I get a refrigeration unit in my store, my overall produce sales will increase.	O	O	O	O	O
c. Having a refrigeration unit for produce will help to increase the overall profitability of my store.	O	O	O	O	O
d. Having a refrigeration unit for produce will help my store better serve the community.	O	O	O	O	O

29. Compared to the past year, please indicate whether you plan to sell a higher, same, or lower QUANTITY* of the products listed below in the coming year.

**Quantity refers to total amount of products sold or sales volume*

	Higher	The same	Lower	Don't know
a. I plan to sell _____ quantities of fresh fruit this year	O	O	O	O
c. I plan to sell _____ quantities of fresh vegetables this year	O	O	O	O

e. I plan to sell _____ quantities of ready-to-eat fruits and vegetables this year (e.g. fruit salad or green salads)	O	O	O	O
c. I plan to sell _____ quantities of nuts this year	O	O	O	O

30. Compared to the past year, please indicate whether you plan to sell more, the same, or fewer VARIETIES* of the products listed below in the coming year.

**Varieties refer to types or number of choices of product; for example, there may be three fresh fruit varieties: bananas, granny smith apples, and red delicious apples.*

	More	The same	Fewer	Don’t know
b. I plan to sell _____ varieties of fresh fruit this year	O	O	O	O
c. I plan to sell _____ varieties of fresh vegetables this year	O	O	O	O
f. I plan to sell _____ varieties of ready-to-eat fruits and vegetables this year (e.g. fruit salad or green salads)	O	O	O	O
d. I plan to sell _____ varieties of nuts this year	O	O	O	O

31. The new refrigerator from CDFA will serve as... (please select one of the following)
    a. A replacement of an existing refrigerator
    b. An addition of a refrigerator (not replacing an existing refrigerator)
    c. Other_______________

32. [INTERVENTION STORES ONLY] Will you be receiving technical assistance (TA) through the grant program, either from a non-profit organization, the city or the state?
    - Yes
    - No
    - I don’t know

33. [INTERVENTION STORES ONLY] *Wording if “Yes” to previous question*: Which of the following types of technical assistance or help do you hope or expect to get? Check all that apply.

    Wording if “no” to previous question: Which of the following types of technical assistance would be helpful?

    - Help choosing the best refrigeration unit for the store
    - Help installing the refrigeration unit
    - Help with procurement of CA-grown produce (i.e. finding a place to purchase CA-grown produce)
    - Help marketing or advertising CA-grown produce
    - Help improving our energy efficiency
    - Help increasing our sales of CA-grown produce

- Other: ___________________________________

34. Where do you currently buy or plan to buy **California-grown produce**? Please check all that apply.
    - Supplier/distributor
    - Wholesaler
    - Retail grocery store
    - Retail farmers' market
    - Direct from farmers
    - Other: ____
    - I do not plan to buy California-grown produce
    - I do not yet know where to buy California-grown produce

35. What are the main reasons that you want to stock **California-grown produce**? Please select up to 3 options.
    - It is important for my sales/profits
    - It is important to my customers
    - It is important to support growers in the region
    - It is affordable
    - It is high quality
    - The types of produce that I want to stock are California-grown
    - Other: ____
    - I do not want to stock more California-grown produce

36. What are the main reasons that you do not stock **more California-grown** produce? Please select up to 3 options.
    Note: Earlier, we asked about reasons you do not stock more fruits and vegetables in general. Here, we would like to know about **California-grown** fruits and vegetables specifically.]

    ___CA-grown produce is not available at my current supplier(s)

    ___I've looked, but haven't found, a supplier of CA-grown produce

    ___The produce I sell is not grown in CA year-round

    ___CA-grown produce is too expensive at suppliers

    ___Suppliers of CA-grown produce require purchases in larger quantities than I can sell

    ___It's hard to know when something was grown in California

    ___Customers don't care if produce is California-grown

    ___Customers don't want/don't buy any produce

    ___Not enough space in the store for any produce

    ___Other: ____

    ___None-there are no challenges to stocking California-grown produce

37. Besides a refrigeration unit, what else would help you sell more fruits and vegetables?
    ____

38. Has your store participated in any healthy retail initiatives in the past 3 years?
    - Yes
    - No
    - Don't know

39. Do store staff receive training about stocking, promoting, and/or marketing fruits and vegetables?
    - Yes
    - No
    - Don't know

40. Anything else you'd like to tell us?

SOCIO-DEMOGRAPHICS

For the next set of questions, we will ask you for some information about yourself and your store.

41. What is your age?
    - 18-30
    - 31-50
    - 51-70
    - 71+

42. How do you describe your gender?
    - Male
    - Female
    - Other/non-binary
    - Prefer not to answer

43. What race/ethnicity do you consider yourself to be? Check all that apply.
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Native Hawaiian or Pacific Islander
    - White
    - Hispanic or Latinx
    - Other
    - Prefer not to answer
    - Don't know

44. What language(s) do you normally speak at home? Please check all that apply.
    - English

- Spanish
- Mandarin or Cantonese
- Arabic
- Other ___________
- Prefer not to answer

45. What languages do your customers usually speak? Please check all that apply.
    - English
    - Spanish
    - Mandarin or Cantonese
    - Arabic
    - Other ___________
    - Prefer not to answer
    - Don’t know

46. What is the highest grade level or level of school you have completed or the highest degree you have received?
    - Grade 1-12 (no diploma)
    - High school graduate/GED
    - Vocational certificate
    - Some college or Associate’s degree
    - Bachelor’s degree
    - Master’s degree or higher
    - Don’t know
    - Prefer not to answer

47. What is your first name? ________________________________

48. What is your association to this store?
    - Store owner
    - Store manager
    - Store clerk
    - Other store staff
    - Representative from outside organization working on the Healthy Retail Grant Program (e.g. local food policy council, non-profit, health department, etc.)
    - Other: ____

49. Optional: In case we have any clarification or follow-up questions, would you be willing to provide your contact information? (leave blank if you don’t wish to share)

Phone number: ________________________

Email address: _____________________________

Storeowner Follow-up specific questions

1. Do you sell any fruits or vegetables in the store (including whole, processed, or prepared fruits and vegetables)?
   - Yes
   - No

2. [Show if "Yes" to Q1] From the store entrance, can you see any of the fruits and vegetables you sell?
   a. Yes
   b. No

3. Have you received AND installed your CDFA refrigerator?
   a. Yes
   b. No

4. [Show if "Yes" to Q3] When did you install your CDFA refrigerator?
   Month:

   Year:

5. [Show if "Yes" to Q3] Please rate how much you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Having the CDFA refrigerator increased my ability to sell produce.	O	O	O	O	O
b. After getting the CDFA refrigerator in my store, my overall produce sales increased.	O	O	O	O	O
c. Having the CDFA refrigerator helped increase the overall profitability of my store.	O	O	O	O	O
d. Having the CDFA refrigerator helped my store better serve the community.	O	O	O	O	O
e. Having the CDFA refrigerator increased the number of customers who shop at my store.	O	O	O	O	O

[Show if "No" to Q3] Please rate how much you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

a. Having a refrigeration unit will increase my ability to sell produce.	O	O	O	O	O
b. If I get a refrigeration unit in my store, my overall produce sales will increase.	O	O	O	O	O
c. Having a refrigeration unit for produce will help to increase the overall profitability of my store.	O	O	O	O	O
d. Having a refrigeration unit for produce will help my store better serve the community.	O	O	O	O	O
e. Having a refrigeration unit will increase the number of customers who shop at my store.	O	O	O	O	O

6. What is the store's total sales revenue (not profit)? You may choose to respond with the amount per week, month, or year.

- ________Week
- ________Month
- ________Year
- Prefer not to answer

2. [Show if "Yes" to Q3] Which of the following statements best describes your CDFA refrigerator?
   - A replacement for an old refrigerator with around the same capacity
   - A replacement for an old refrigerator with increased capacity
   - An additional refrigerator (not replacing an old refrigerator)
   - Other______________

3. [Show if "Yes" to Q3] Other than the CDFA refrigerator, how many *other* refrigerators in your store stock food items (not beverages)? _________

4. [Show if "Yes" to Q3] Which of the following items are currently in the CDFA refrigerator?
   - Alcoholic beverages
   - Candy
   - Dairy
   - Meat
   - Minimally processed foods, such as fresh fruit cups or bagged salads
   - Nuts
   - Pastries/other sweets
   - Prepared food (besides ready to eat fruits or vegetables)
   - Ready-to-eat fresh fruits or vegetables
   - Sandwiches/deli items
   - Sugary drinks (e.g. soda)
   - Water
   - Whole fresh fruits or vegetables
   - Other food____
   - Other drinks____

5. [Show if “Yes” to Q3] How much of the CDFA refrigerator is stocked with CA-grown fruits and vegetables (incl. whole and minimally processed) or nuts?
    - All
    - More than half (but not all)
    - Around half
    - Less than half (but not none)
    - None

6. [Show if “Yes” to Q3] How likely are you to continue using the CDFA refrigerator?
    - Very likely
    - Likely
    - Not sure
    - Unlikely
    - Very unlikely

7. [Show only if participants respond “Likely” or “Very likely” to Q11] If you are planning on continuing to use the CDFA refrigerator, what do you plan on using it for?
    - Most/all fruits and vegetables
    - Equal amount of fruits/vegetables and other items (drinks, meat, dairy, etc.)
    - Most/all items that are *not* fruits and vegetables (drinks, meat, dairy, etc.)

8. [Show if “Yes” to Q3] What unexpected **challenges** arose as a result of the CDFA refrigerator?
    ____
    ____

9. [Show if “Yes” to Q3] What unexpected **opportunities** arose as a result of the CDFA refrigerator?
    ____
    ____

10. [Show if “Yes” to Q3] How do you feel the CDFA refrigerator impacted your energy bills?
    - No change
    - Increased cost
    - Decreased cost
    - Don’t know

11. [Show if “Yes” to Q3] Did you receive technical assistance through the grant program, whether from a nonprofit organization, the city, or the state?
    - Yes
    - No
    - I don’t know

12. [Show if “Yes” to Q16] Which of the following types of technical assistance did you receive? Check all that apply.
    - Help choosing the best refrigeration unit for the store

- Help installing the refrigeration unit
- Help with procurement of CA-grown produce (i.e. finding a place to purchase CA-grown produce)
- Help marketing or advertising CA-grown produce
- Help improving energy efficiency
- Help increasing sales of CA-grown produce
- Other: ___________________________________

13. [If “Yes” to Q16, ask for each item marked in Q17] How useful was the [technical assistance item marked in Q16]?
    - Very useful
    - Useful
    - Not useful
    - Very not useful

14. [If “Yes” to Q16, show only options that were unmarked in Q17] What other types of technical assistance would have been helpful (i.e. technical assistance that you didn’t get, but would have liked)?
    - Help choosing the best refrigeration unit for the store
    - Help installing the refrigeration unit
    - Help with procurement of CA-grown produce (i.e. finding a place to purchase CA-grown produce)
    - Help marketing or advertising CA-grown produce
    - Help improving our energy efficiency
    - Help increasing our sales of CA-grown produce
    - Other: ___________________________________

15. [Show if “Yes” to Q16] How likely are you to keep selling CA-grown produce if or when the technical assistance ends?
    - Very likely
    - Likely
    - Not sure
    - Unlikely
    - Very unlikely

16. [Show if “No” to Q16] Would technical assistance have been helpful?
    - Yes
    - No

17. [Show if “No” to Q16 and yes to Q17] What kind of technical assistance would have been helpful?
    - Help choosing the best refrigeration unit for the store
    - Help installing the refrigeration unit
    - Help with procurement of CA-grown produce (i.e. finding a place to purchase CA-grown produce)
    - Help marketing or advertising CA-grown produce
    - Help improving our energy efficiency
    - Help increasing our sales of CA-grown produce
    - Other: ___________________________________

- None of the above

18. Would you recommend the CDFA Healthy Stores Refrigeration Grant Program to other stores/storeowners?
    - Yes
      [Optional] Please describe why_____________
    - No
      [Optional] Please describe why_____________

19. Do you have any advice for future grantees?
    - Yes
      Please share your advice here ______________________
    - No

20. Anything else you'd like to tell us?

Storeowner Interview Guide Baseline

CDFA Healthy Stores Refrigeration Grant Program Evaluation
Key Informant Interview Guide [Baseline, INTERVENTION]

KEY TOPIC AREA 1: Practices and perspectives on selling fruits and vegetables

1. First, please tell me a little bit about your store.
2. Does your store accept EBT (also called CalFresh/SNAP/food stamps)?
3. Does your store accept WIC (The Special Supplemental Nutrition Program for Women, Infants, and Children)?

Now, let's talk about selling fruits and vegetables at your store.

2. Do you currently sell any fresh fruits and vegetables (FFV)? [IF YES, CONTINUE WITH THIS SURVEY. IF NO, MOVE TO 'NO FFV' VERSION OF SURVEY]
3. What are the main reasons that you sell FFV?
4. How do you decide which FFV items to sell?
5. How would you describe your shoppers' FFV purchase habits?
6. Please describe FFV sales.
7. From where do you purchase the FFV you sell?
8. What are the benefits of purchasing this way? What are the challenges?
9. Do you buy California-grown FFV with your other produce items or separately? How do you know whether items are CA-grown?
10. Are you aware of any FFV recovery opportunities, such as where you could purchase farm seconds? Do you have any way to connect with local farmers/growers?
11. Please describe how prices are set for FFV.
12. What are the biggest challenges to selling FFV? What strategies have you developed to address the challenges?
13. How do you think stocking California-grown FFV affects/will affect your business?
14. How do you track/understand customer preferences?
15. How much of the FFV in your store do not end up getting sold? What you do with unsold FFV?
16. What do you think would help you sell more California-grown FFV besides having a refrigeration unit from the CA Healthy Stores program?
17. Please describe any other factors affecting your FFV sales decisions that we have not yet talked about.

KEY TOPIC AREA 2: CDFA grant-related questions

18. Please describe how you heard about the refrigeration grant opportunity.
19. Why are you participating in the refrigeration grant program?
20. How will you decide what items to stock in the new refrigeration unit?
21. Are you expecting to receive any technical assistance as part of your participation in the Healthy Stores Refrigeration Grant Program? What kind of support or assistance would be most helpful to you?

Storeowner Interview Guide Follow up

CDFA Healthy Stores Refrigeration Grant Program Evaluation
Key Informant Interview Guide [Follow-up, INTERVENTION]

KEY TOPIC AREA 1: Practices and perspectives on selling fruits and vegetables

1. When we last talked, you said [insert store-specific information] were the main reasons your store is successful. Is that still true/has that changed? If so, please describe how.
   Similarly, you said your store's biggest challenges were [insert store-specific information] Is that still true/has that changed? If so, please describe how.
2. How has the new refrigerator impacted your store? (probes: overall sales, types of items purchased, clientele)
3. How has the COVID pandemic impacted your business? (probes: overall sales, types of items purchased, clientele)

Now, let's talk about selling fruits and vegetables at your store.

4. Do you currently sell any fresh fruits and vegetables (FFV)? [IF YES, CONTINUE WITH THIS SURVEY. IF NO, MOVE TO 'NO FFV' VERSION OF SURVEY]
   a. How do you think stocking FFV affects your business? How about your customers?
5. Last time you said *[insert store-specific information*] were the main reasons you sold FFV. Have these reasons changed at all? How/why?
6. Do you sell any California-grown FFV?
   a. [If yes to previous question] How do you think stocking California-grown FFV affects your business? How about your customers?
7. Last time you described your shoppers' FFV purchase habits as [*insert store-specific information*] (e.g.do they come for particular FFV, impulse buy, seem surprised they're stocked at all, etc.) Has this changed? (If yes) How/why?
8. Has having the new refrigerator changed how you decide which FFV items to sell? (If yes to previous question) How?
   Has the pandemic changed how you decide which FFV items to sell? (If yes to previous question) How?
9. How has having a refrigerator affected FFV prices?
   How has the pandemic affected FFV prices?
10. Since last fall, have you changed where you purchase your FFV to sell? How/why?
11. [If yes to Q6] Do you buy California-grown FFV with your other produce items or separately? How do you know whether items are CA-grown?
12. [Exclude if running behind on time] Last time you said [*insert store-specific amount*] of FFV does not end up getting sold. Has this changed? How/ why?
    a. Has this changed due to having a refrigerator?
13. Please describe any other factors affecting your FFV sales decisions that we have not yet talked about.

[Summarize what was said], does that accurately reflect what we talked about?

KEY TOPIC AREA 2: CDFA grant-related questions

The next set of questions will ask you about the Healthy Stores Refrigeration Grant Program of the California Department of Food and Agriculture (CDFA).

14. How did participating in this program, (i.e. receiving the new refrigerator), affect your store?
    a. Your FFV sales? Overall sales?
    b. Energy (electricity) costs?
    c. Maintenance costs?
15. Please describe your experience with the refrigeration grant program since receiving your refrigerator. (Probes: applying, ordering refrigerator, refrigerator delivery) What was challenging? What went well?
16. [If not addressed by response to previous question] How was the process of selecting a refrigerator? How was the installation process?
17. What type of refrigeration unit did you purchase? How do you feel about your choice?
18. Can you describe where you placed it in the store? [Probe for details if needed, can you see it from entrance, what is it near, etc.] How did you make this decision?
19. How do you decide which items to stock in the CDFA refrigerator?
20. Have you received any technical assistance during your participation in the Healthy Stores Refrigeration Grant Program? (e.g., help w/ refrigerator selection, marketing, installation)
    a. [If respondent answers yes] Please describe the assistance you've received. Has it been helpful, and how? What other kinds of technical assistance would have been helpful?
    b. [If respondent answers no] What kind of technical assistance would have been helpful?
21. How satisfied are you with this program? What would you do differently if you had to do it all over again?
22. Would you recommend this program to other stores?
    a. What advice would you share with future grantees?
23. Now that you have the CDFA refrigerator, what else do you think would help you sell more California-grown FFV?
24. Have you decided to change your business in any other way, besides having a refrigerator, due to the program? (Probes: participation in other healthy retail initiatives, signage, community relations, connections to other store owners/networks/best practices)

[Summarize what was said], does that accurately reflect what we talked about?

CONCLUSION

25. Is there anything you would like to talk about that we didn't cover?

‘NO FFV’ SURVEY VERSION [Follow-up, INTERVENTION]

5. Last time you said *[insert store-specific information*] were the reasons that you don’t sell FFV. Have these reasons changed at all? How/why? (Probes: customers don’t want it, don’t think it will sell well, too expensive to stock)
    a. What are the greatest barriers that prevent you from selling FFV? (Probes: Stocking, storing, promoting)
    b. What kind of support do you think would make it easier to stock, manage, or sell FFV?
6. How do you think stocking FFV would affect your business? How about your customers?
7. How do you think stocking California-grown FFV would affect your business? How about your customers?
8. [Exclude if running behind on time] What would you do with unsold FFV? What will it mean for your business? How does concern about waste impact what you will stock?
9. Please describe any other factors affecting your FFV sales decisions that we have not yet talked about.

[Summarize what was said], does that accurately reflect what we talked about?

KEY TOPIC AREA 2: CDFA grant-related questions

The next set of questions will ask you about the Healthy Stores Refrigeration Grant Program of the California Department of Food and Agriculture (CDFA).

10. How did participating in this program, (i.e. receiving the new refrigerator), affect your store?
    a. Your FFV sales? Overall sales?
    b. Energy (electricity) costs?
    c. Maintenance costs?
11. Please describe your experience with the refrigeration grant program since receiving your refrigerator. (Probes: applying, ordering refrigerator, refrigerator delivery) What was challenging? What went well?
12. [If not addressed by response to previous question] How was the process of selecting a refrigerator? How was the installation process?
13. What type of refrigeration unit did you purchase? How do you feel about your choice?
14. Can you describe where you placed it in the store? [Probe for details if needed, can you see it from entrance, what is it near, etc.] How did you make this decision?
15. How do you decide which items to stock in the CDFA refrigerator?
16. Have you received any technical assistance as part of your participation in the Healthy Stores Refrigeration Grant Program? Examples of technical assistance include help with choosing a type of refrigeration, installing the unit, procuring CA-grown FFV, marketing/advertising FFV, etc.)
    a. [If respondent answers Yes.] Please describe the assistance you’ve received. Has it been helpful, and how? What other kinds of technical assistance would have been helpful?
    b. [If respondent answers No] What kind of technical assistance would have been helpful?
17. How satisfied are you with this program? What would you do differently if you had to do it all over again?
18. Would you recommend this program to other stores?
    a. What advice would you share with future grantees?

19. Now that you have the CDFA refrigerator, what else do you think would help you sell more California-grown FFV?
20. Have you decided to change your business in any other way, besides having a refrigerator, due to the program? (Probes: participation in other healthy retail initiatives, signage, community relations, connections to other store owners/networks/best practices)

[Summarize what was said], does that accurately reflect what we talked about?

CONCLUSION

21. Is there anything you would like to talk about that we didn't cover?

Baseline/Follow up Customer Intercept Survey

When you answer the following questions, please think about your most recent visit to the store where you heard about this survey.

1. About how often would you say you shop at this store:
   - ☐ It was my first time shopping here
   - ☐ Less than once a month
   - ☐ A couple times a month
   - ☐ About once a week
   - ☐ A couple times a week
   - ☐ Daily

2. What did you go to the store to buy? Please check all that apply.
   - ☐ Alcohol (beer, wine, liquor)
   - ☐ Dairy (cheese, milk, yogurt)
   - ☐ Fruit
   - ☐ Grains (bread, pasta, rice, tortillas, flour, etc.)
   - ☐ Lottery tickets
   - ☐ Meat
   - ☐ Nuts
   - ☐ Snacks (chips, pretzels, cookies, candy, other sweets)
   - ☐ Tobacco
   - ☐ Vegetables (including herbs such as cilantro)
   - ☐ Other: ____

3. Did you buy fruits or vegetables at this store (including fresh, canned, frozen, or dried)?
   - ☐ Yes
   - ☐ No
   - ☐ Don't know

[If answered yes above, show the next three questions.]

4. [Show if "Yes" to Q3] What fruits or vegetables did you buy? ____________________________
   ____

5. [Show if "Yes" to Q3] Of the fruits and vegetables you bought, how many were being sold from a refrigerator in the store?
   - ☐ None
   - ☐ Less than half
   - ☐ Half or more, but not all
   - ☐ All

- ☐ Don't know

6. [Show if "Yes" to Q3] Of the fruits and vegetables you bought, how many were California-grown?
   - ☐ None
   - ☐ Less than half
   - ☐ Half or more, but not all
   - ☐ All
   - ☐ Don't know

7. Did you buy nuts today?
   - ☐ Yes
   - ☐ No

[If "Yes" to Q7, show next 3 questions.]

8. What kinds of nuts did you buy?
   - ☐ Almonds
   - ☐ Cashews
   - ☐ Mixed nuts
   - ☐ Peanuts
   - ☐ Pecans
   - ☐ Pistachios
   - ☐ Walnuts
   - ☐ Don't know

9. Of the nuts you bought, how many were being sold from a refrigerator in the store?
   - ☐ None
   - ☐ Less than half
   - ☐ Half or more, but not all
   - ☐ All
   - ☐ Don't know

10. Of the nuts you bought, how many were California-grown?
    - ☐ None
    - ☐ Less than half
    - ☐ Half or more, but not all
    - ☐ All
    - ☐ Don't know

11. In the past month, how much of your produce (fruits, vegetables and herbs) did you buy at this store?
    - ☐ None
    - ☐ A little
    - ☐ About half
    - ☐ Most

- ☐ All
- ☐ Don't know

12. [Show only if respondent did not answer "None" to Q11] Please check below if the statement is a reason you shop **here for produce** or write in your answer.
    - ☐ This store is convenient.
    - ☐ Produce items are a good value.
    - ☐ Produce is high quality.
    - ☐ This store carries the items that I want to buy
    - ☐ Other: ____

13. [Show only if respondent answered "None" to Q11] Please check below if the statement is a reason you **do not shop here for produce**, or write in your answer.
    - ☐ This store is not convenient / I prefer shopping for produce elsewhere
    - ☐ Produce items are not a good value / they are too expensive.
    - ☐ Produce is not high quality.
    - ☐ This store does not carry the items that I want to buy
    - ☐ Other**: ____**

14. How important is it to you that this store carries **fresh fruits and vegetables**?

Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
O	O	O	O	O	O	O

15. How important is it to you that this store carries **California-grown fruits and vegetables**?

Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
O	O	O	O	O	O	O

16. How easy or difficult would you say it is to get **affordable, appealing, high quality** fresh fruits and vegetables in this neighborhood?

Very difficult	Difficult	Moderate (not easy or difficult)	Easy	Very easy	Don't know
O	O	O	O	O	O

17. During the past month, where did you get **most** of your fresh fruits and vegetables?
    - ☐ Supermarket
    - ☐ Small market

- ☐ Convenience store
- ☐ Farmer's market, CSA box, or farm stand
- ☐ Food bank or food pantry
- ☐ Community or backyard garden
- ☐ Don't know

For the questions 18a-e, please indicate how important the following factors are when selecting what produce to buy.

18a. The **quality** of the produce (i.e. how ripe, unblemished, etc. it appears)

o Not important o Slightly important o Important o Very important o Don't know

18b. The **cost** of the produce

o Not important o Slightly important o Important o Very important o Don't know

18c. The **taste** of the produce

o Not important o Slightly important o Important o Very important o Don't know

18d. Whether the produce is **California-grown**

o Not important o Slightly important o Important o Very important o Don't know

18e. Whether the produce is organic

o Not important o Slightly important o Important o Very important o Don't know

19. Is there anything else this store could do to encourage you to purchase fruits and vegetables here?
    - ☐ Yes
    - ☐ No

20. If yes: ____
    ____

The following statements are things people have said about their food situation. For these statements, please say whether the statement was often true, sometimes true, or never true for your household **in the last 12 months.**

21. "We worried whether our food would run out before we got money to buy more."
    a. Often true
    b. Sometimes true
    c. Never true
    d. Don't know
    e. Prefer not to answer

22. "The food that we bought just didn't last, and we didn't have money to get more."

a. Often true
b. Sometimes true
c. Never true
d. Don't know
e. Prefer not to answer

23. "I/we couldn't afford to eat balanced meals."
    a. Often true
    b. Sometimes true
    c. Never true
    d. Don't know
    e. Prefer not to answer

Demographic information

24. What is your age? __________
    - ☐ 18-30
    - ☐ 31-50
    - ☐ 51-70
    - ☐ 71+

25. How do you describe your gender?
    a. Male
    b. Female
    c. Other/non-binary
    d. Don't know
    e. Prefer not to answer

26. What race/ethnicity do you consider yourself to be? (Check all that apply)
    a. American Indian or Alaska Native
    b. Asian
    c. Black or African American
    d. Native Hawaiian or Pacific Islander
    e. Hispanic or Latinx
    f. White
    g. Other
    h. Don't know
    i. Prefer not to answer

32. What languages do you normally speak at home?
    - ☐ English
    - ☐ Spanish
    - ☐ Mandarin or Cantonese
    - ☐ Arabic

- ☐ Other ___________
- ☐ Don’t know
- ☐ Prefer not to answer

33. What is the highest grade or level of school you have completed?
    - ☐ Grade 1-12 (no diploma)
    - ☐ High school graduate/GED
    - ☐ Vocational certificate
    - ☐ Some college or Associate’s degree
    - ☐ Bachelor’s degree
    - ☐ Master’s degree or higher
    - ☐ Don’t know
    - ☐ Prefer not to answer

34. Which of the following best describes your main daily activities?
    - ☐ Stay at home, providing unpaid care for children/adults full time
    - ☐ Retired or disabled
    - ☐ Student
    - ☐ Working full time
    - ☐ Working part time
    - ☐ Furloughed
    - ☐ Unemployed or laid off
    - ☐ Don’t know
    - ☐ Prefer not to answer

35. Which range best describes your total yearly household income before taxes during the last 12 months?
    - ☐ Less than $15,000
    - ☐ $15,000 to $29,999
    - ☐ $30,000 to $39,999
    - ☐ $40,000 to $49,999
    - ☐ $50,000 to $59,999
    - ☐ $60,000 to $69,999
    - ☐ $70,000 to $79,999
    - ☐ $80,000 to $89,999
    - ☐ More than 90,000
    - ☐ Don’t know
    - ☐ Prefer not to answer

36. In the past year, have you or your family received CalFresh benefits, sometimes called EBT, SNAP, or food stamps?
    - ☐ Yes
    - ☐ No
    - ☐ Don’t know
    - ☐ Prefer not to answer

37. In the past year, have you or your family participated in WIC (The Special Supplemental Nutrition Program for Women, Infants, and Children)?
    - ☐ Yes
    - ☐ No
    - ☐ Don’t know
    - ☐ Prefer not to answer

Appendix C: Explanation of methods and survey instruments

Storeowner survey

Changes in storeowner survey instrument

The question, "Where do you currently buy (or plan to buy) California-grown produce" baseline question included, "wholesaler," as a response, with an additional question asking respondents to indicate whether the wholesaler was a "market, NOT open to the public" or a "club, like Costco or Sam's Club." Many respondents did not answer the additional question, so the follow up survey was redesigned to combine the two questions. The responses to, "Where do you currently buy (or plan to buy) California-grown produce" were changed to include "Supplier/distributor/wholesaler (not accessible to the public)" and "Retail store (e.g. Safeway, Costco, Sam's Club, Trader Joes, Grocery Outlet)" as responses. However, changing the survey instrument rendered the results from the follow up and baseline surveys not directly comparable. The solution NPI researchers chose was to include three categories of responses in the baseline and follow up frequency tables:

- "Supplier/distributor/wholesaler (not accessible to the public)"
- "Retail store (e.g. Safeway, Costco, Sam's Club, Trader Joes, Grocery Outlet)"
- "Wholesaler (unspecified)"

Stores that answered the additional question at baseline indicating whether their wholesaler was open or closed to the public were represented in the appropriate categories, but any store that did not answer the question was included in the "Wholesaler (unspecified)" category. Frequencies at baseline and follow up can be interpreted, but pre/post analysis cannot be conducted.

Storeowner survey data cleaning:

Below is a detailed list of changes made to the storeowner survey data.

- Outliers where the intended response was clear were edited to reflect the intended response (e.g., "99" for price per pound was changed to 0.99).
- Outliers where the intended response was not clear were set to missing. Below are four examples:
    - A respondent reported they sold 0.5 pieces of oranges monthly
    - A respondent reported the cost of lettuce was $0.01 per pound
    - A respondent reported the weight of carrot packages they sell was 44563 pounds
    - A respondent reported the price instead of a weight
- When stores listed a range instead of an exact value for produce sales, the range was averaged (e.g., "25-30 pounds per week" was converted to "27.5 pounds per week.")
- When storeowners entered duplicate weight information (e.g., respondent entered values for # of pounds and # of packages) the amount entered in pounds was used.
- Survey respondents had the option to report produce sold by the piece, pound, ounce, or package (with a weight per package) and by the day, week, or month. All values reported were converted to pounds per week.
    - Conversions for produce "pieces" to weights were calculated via conversion factors from the USDA FNDDS database.
    - For lettuce and tomatoes, survey respondents were also asked to specify the variety of produce item (e.g., iceberg vs. romaine lettuce, beefsteak vs. roma tomato). FNDDS conversion factors

unique to each produce variety were used, when available. When not available, the most similar produce variety for which data were available was used.
    - When stores listed multiple types of tomatoes when asked to just specify one (regarding price and/or quantity sold), the more common type of produce was chosen (e.g., "roma" for tomatoes, "romaine" for lettuce).
- When possible, NPI researchers contacted storeowners via phone to inquire about produce weight and price outliers. Produce weight and price data for four stores were changed due to these conversations.
- When possible, NPI researchers contacted storeowners via phone to inquire about discrepancies in the number of produce items stores reporting offering at baseline and follow up (e.g., one store reported offering 21 types of vegetables at baseline but only 3 at follow up.) Produce variety data for five stores were edited due to these phone conversations; however, both edited and unedited data are reported in the analysis.
- One store completed two follow up and baseline surveys for Round 1 and Round 2. Round 2 data was used, as the Round 1 follow up survey was taken the same day as the refrigerator installation.
- Four stores completed two baseline surveys, one each in Round 1 and Round 2. Round 2 surveys were deleted, as they were less complete than the Round 1 surveys.
- All write-in data written in Spanish were translated to English.

Customer survey

Changes in customer survey data collection

At baseline, customer survey data were collected in-person. NPI researchers contacted storeowners ahead of time to ask when the store was most busy, to enable maximum data collection. Storeowners were also asked to identify the primary language spoken among their customers. If storeowners claimed most customers spoke Spanish, a data collector fluent in Spanish conducted the surveys.

At follow up, due to physical distancing measures imposed by the COVID-19 pandemic, data collection was mostly conducted remotely. NPI researchers sent flyers and postcards to each store containing an electronic link to the Qualtrics customer survey. These documents included a Qualtrics link that was shortened to make it easier for customers to search using their personal electronic devices while shopping at the store. For additional accessibility, a QR code linked to the survey was added to the flyers and postcards as well as a phone number participants could text that would send the survey link directly to their phone. The flyers and postcards were printed by NPI and mailed to each of the stores that had not completed their ten customer surveys in-person. Storeowners were instructed to display the flyers at their register and hand a postcard to each customer who purchased food or drinks.

Unfortunately, perhaps due to the increased administrative onus on storeowners and customers, the survey response rate decreased from baseline to follow-up. In attempt to receive a greater number of responses for the remote customer surveys at follow-up, NPI reached out to the ten storeowners toward the end of data collection to offer an additional $100 incentive to each store that was able to reach the goal of collecting ten surveys within two weeks. This incentive drew in a few more customer surveys, but the ultimate follow-up response rate remained low.

Changes in customer survey instrument:

The follow up customer survey was adapted to be better suited for remote data collection. An individual survey was created for each store, with the same content questions as the baseline survey, but with a few changes to screener questions. The screener question, “Where did you hear about this survey?” was added to the remote surveys to ensure customers completed the survey at stores participating in the CDFA program (without an in-person data collector to verify this information). The question, “Did you visit the store within the last 7 days?” was also added to the remote surveys to ensure recency of data collection. The in-person survey question, “Did you buy any food or drinks at this store today?” was changed for remote surveys to, “Did you buy any food or drinks at this store during your last visit?” given customers may have taken the survey a day or two after they visited the store. Content questions remained unchanged, rendering data analysis unimpacted.

Appendix D: Storeowner interview key takeaways and quotes

Impressions of CDFA Healthy Refrigeration Grant Program	
Key Finding: Storeowners recommend the CDFA Healthy Refrigeration Grant Program.	· *Yes, I can't imagine any store denying this offer, unless there was like a language barrier or something because this was– this was fairly easy. Yes. I've had I've had more trouble trying to lower my cable bill than getting a free refrigerator.* · *I absolutely would [recommend the program], especially small local markets and stores like ours.* · *I think there should be a lot more people taking advantage of this opportunity and I hope they are.* · *I mean, first of all, to get a free refrigerator, especially when we're going through these struggling times, and to get something that helps us to boost our sales is amazing.* · *Really take the program seriously into consideration. Not only does it help your business, but it helps other people to have access to better quality food.*
Key Finding: Storeowners found the process of applying for the CDFA grant and obtaining the refrigerator easy and seamless.	· *It was excellent. It was painless, easy and simple.* · *I think we got everything done quick and fast and it was fairly easy.* · *I will say the push to get it here from [our local public health department] and all the group– it went great because they worked as if they own the place. It was a partnership.* · *No, you guys were spot on. Very quickly responsive. Very clear and concise. If there's any misunderstandings, then it was later clarified and it was clearly expressed. Very transparent. Like really one of the, like, easiest processes that I've had to deal with the state. If not, THE easiest process I've had to deal with the state.* · *So, yes, it was a very seamless process. The only investment I had to make was to sit down and do a couple– and give a couple of interviews, which I can do all day long just to get these refrigerators.* · *So, I had a great experience. Everybody was super helpful. They're very clear on what was necessary and what needs to be done and what the requirements were. And so, it really made it easy for us to get what it is within the program requirements.*

Impact of CDFA Refrigerator	
Key Finding: The CDFA refrigerator allowed stores to increase the variety and freshness of produce they sell.	· *So, we were able to get more of a selection and also it has helped keep the produce fresh.* · *We are able to stock more fresh fruits and vegetables for longer periods of time.* · *Now we have more space, so we bring in more items.* · *Now we carry watermelon, pineapple, papaya, and like the bigger fruits. There wasn't room before.* · *Well, we have fresh produce, and it makes everybody happier, the fact that we have a bigger inventory and our customers are– how do you say– taking advantage of the refrigerator, using–I mean always having fresh produce.*
Key Finding: The CDFA refrigerator made it more convenient for customers to shop at corner stores.	· *It's brought in the products– like I wouldn't say it's like, made a significant change in sales margin or anything like that. But it's something that brings our customers in so that way they don't have to go down to the city, which gets them to buy other things at that point.* · *I believe they're more happy to have the option of shopping– they're getting their fruits and vegetables here. And they don't have to go make two stops because they have the convenience of buying their meat here and their fruits and vegetables.* · *Yes, it has impacted it very much in a positive way because the previous refrigeration unit wasn't reliable, so we weren't able to store any fruits or vegetables in it. So now that we have fresh produce, it's actually a big, like, it's been very helpful to bring in local customers that don't want to go into the city, and also local customers that don't feel comfortable going to like big markets or anything especially with COVID.*
Key Finding: The CDFA refrigerator has helped to prevent produce spoilage.	· *So, it has helped from spoiling and we're able to get more product.*
Key Finding: The display of the CDFA refrigerator is attractive and showcases the produce as fresh.	· *Like, we don't throw away a lot of stuff like we used to because of the display– the refrigerator displays it like perfect.* · *Well, that's one of the main reasons why we're able to put produce in there because it's new, clean, and so people know, like, you know– like aesthetically, they know that the produce is good and fresh.*
Key Finding: The CDFA refrigerator has helped to increased produce sales.	· *We have seen a considerable bump in our fresh fruits and vegetables sales.*

Key Finding: The CDFA refrigerator increases the visibility of produce in the store.	· *It's much more visible. We put the refrigerator right near our front counter. And, yeah, it's a can't miss thing. It's one of the first things you see when you come into the store and we've had a lot of people come in and be like, 'Oh, you guys have fruits and vegetables?'* · *Now it's like visible. They can see the refrigerator. They can see everything that we have. Before they would have to like ask if we have it.* · *It has created a corner where it attracts a lot of attention, you know, it's got the LED lights, it's open refrigeration. Consumers tend to gravitate towards it. So yes, it's been extremely helpful.*
Key finding: The CDFA refrigerator improved the store's overall image.	· *The fridges have definitely– I felt like they took that lower tier store to a little higher level.* · *It had a big impact because it's giving a good image in the neighborhood by bringing fresh items.* · *The image the customer gets from our store is different now. They know that we carry healthier items so they are very happy with that.*
Key finding: The CDFA refrigerator inspired storeowners to make additional changes to the store.	· *I think the refrigeration was just the beginning for our team. So, adding the refrigeration definitely helped a lot and it kind of built up to another environment of, you know, what we want to continue with this very positive environment of feeling.*

Storeowner experiences with CDFA technical assistance	
Key Finding: Storeowners experienced issues with the delivery and/or installation of the CDFA refrigerator.	· *Well, everything was good except for the delivery. So, they just dropped it off outside the store and they weren't able to put it inside the store. And it was in a box container, so we had a– and it didn't fit through our bars, so we had to take out the door and then connect it ourselves. But I mean, it was free, so can't complain.* · *The challenge was getting the refrigerators in and installed. It took a lot of manual power– muscle power to do that because they're very heavy. And the other thing is that our doors, like I mentioned the store was built in the late– early 30s, right, so the doors are exactly the measurement of the refrigeration. So, it left us maybe an inch gap to play with, and these refrigerators are not so light.* · *No, the delivery people basically put it on the ground on the outside. They did not come inside so I had to hire three people in order to get the refrigerators in.* · *The grant allows for us to purchase the equipment, but it doesn't support the cost of installation or any electrical modifications that are needed. So we had to raise funds and pay out-of-pocket because in order to accommodate the new unit, we had to run new electrical lines. That ended up costing us about $3,000 total.*
Key Finding: The assistance CDFA provided to help stores choose their refrigerator was well-received.	· *They gave us a list that had like 100 refrigerators or something and then we asked them to narrow it down and they– Mandela offered to help us with that and gave us like an option of four refrigerators and we just picked one.* · *Everything went smoothly. Everything was nice. People– they brought it here and it was actually quicker time than I expected. It got installed quick. It looked great. People appreciate it.* · *So, they helped out with making sure– So they helped me make sure that the repairs, and then also the refrigeration unit were within requirements and standards. They made sure that they clearly explained to me what needed to be done, which is make sure that it's all California produce that's in the fridge units…Yeah, they were great.*
Key Finding: Storeowners would appreciate more assistance identifying CA-grown produce.	· *I think a vendor that– that cares more about locally grown fruits and vegetables. And I think also if our customers be more educated about supporting local– local farmers. I think those two would help.* · *But when we go to the produce market, they do not do a good job clarifying where the product is coming from, unfortunately.* · *Just an increased variety of California produce, and then having labels. You know, the companies communicating one way or another that this is California grown.*

Key Finding: Storeowners would appreciate more assistance marketing CA-grown produce.	· *I don't know, there's a lot of existing kind of marketing resources probably within the CDFA sphere around 'buy California.' And just like existing kind of signage and resources, you know, marketing collateral that we might have been able to tap into.* · *I think I need to do a little bit better job on my signage, so that it can say 'local produce here.'* · *So we still have a lot of signage work to do to get the message out that we have the local fruits and vegetables available.*

Customer valuation of local produce	
Key Finding: Customers do not place a high value on produce being CA-grown.	· *Well, I don't think my customers are more attuned to that or aware of like, locally grown.* · *It [stocking CA-grown produce] doesn't affect them [the customers] at all because to them it's almost the same thing.* · *For the most part, I don't think customers are really reading into whether or not it's from California or not. They're just looking for the specific produce item. So, I would say it's probably more on the responsibility of the owner to make sure it's stocked with California fruits and vegetables, as opposed to like customers like demanding it.* · *Consumers just want a fresh product that is competitively priced. They do not care much about the destination. But you know– and then also seasonality affects it as well. If we just wait for everything to be grown in California, then we are going to not have that trust with our customers knowing that we'll have a lot of holes when it comes to placing the product where it belongs.* · *So honestly, I don't think the customers really notice or really care just as long as we have what they need and it's fresh enough. So yeah, I don't think we've ever had anyone ask if it was California grown.*
Key Finding: Customers care that produce is locally grown, especially since the COVID-19 pandemic.	· *A lot of people want local.* · *I mean, for the most part, I don't think they [the customers] really pay attention to it on the California part, but I do think if I did say it's like locally grown, you know, that they would have a better feeling about it.* · *People want to shop in a place where they know things are local. That seems really important to people. I think there's a real awareness of that since COVID and so I think it makes the point that we all got to be in this together and take care of each other.* · *I think particularly in the last year, there's a lot more kind of general public and consumer appreciation and recognition of the importance of local and regional resiliency.*

Appendix E: Additional data tables

Table 1. Characteristics of stores that installed a CDFA refrigerator

	Pre/post sample (n = 51)
Store characteristics	**n (%)**
Accept SNAP (at follow up)	49 (96.1%)
Accept WIC (at follow up)	16 (31.4%)
Participated in healthy retail initiative in the last 3 years*	20 (50%)[a]
Store staff receive training about stocking, promoting, and/or marketing FV*	29 (61.7%)[b]
Installed refrigerator	39 (76.5%)
Other food refrigerators	**Mean (SD)** **Range**
Number of other refrigerators (n = 43)	2.1 (2.3)[c] 0 – 10
Store size	**Mean (SD)** **Range**
Square footage (n = 40)	3755 (5232.3)[d] 120 - 30000
*Question responses were "yes," "no," and "I don't know" [a]n = 40, [b]n = 47, [c]n = 37, [d]n = 34, [e]n = 8	

Table 2. Reasons for selling CA-grown fruits and vegetables, reported by storeowners, at baseline and follow up

Main reasons for selling California-grown fruits and vegetables (multiple response)	Pre/post sample Installed refrigerator (n = 39)		
	Baseline	**Follow up**	**Difference**
	n (%), n = 37		**Percentage points**
It is important to support growers and farmers in the region	29 (78.4%)	23 (62.2%)	-16.2
It is important for my customers	21 (56.8%)	15 (40.5%)	-16.3
It is high quality	16 (43.2%)	19 (51.4%)	8.2
It is important for my sales/profits	9 (24.3%)	11 (29.7%)	5.4
The types of produce that I want to sell are CA-grown	8 (21.6%)	6 (16.2%)	-5.4
It is affordable	1 (2.7%)	4 (10.8%)	8.1
It is required by the CDFA Healthy Stores Refrigeration Grant Program	NA	8 (21.6%)	NA
Other (including write-in responses)	2 (5.4%)	1 (2.7%)	-2.7
I do not want to stock more CA-grown FV	0(0%)	0(0%)	0

Table 3. Fate of unsold fruits and vegetables in corner stores, reported by storeowners, at baseline and follow up

Fate of unsold fruits and vegetables (multiple response)	Pre/post sample Installed fridge (n = 39)		
	Baseline	Follow up	Difference
	n (%), n = 36		Percentage points
Throw them in the trash	16 (44.4%)	17 (47.2%)	2.8
Give them to customers (for free)	15 (41.7%)	16 (44.4%)	2.7
Take them home for personal/family use	10 (27.8%)	21 (58.3%)	30.5
Compost them	9 (25%)	6 (16.7%)	-8.3
Donate them to charity or community organization (such as food pantry or soup kitchen)	7 (19.4%)	6 (16.7%)	-2.7
Leave them on the street	0 (0%)	1 (2.8%)	2.8
Other (including write-in responses)	7 (19.4%)	4 (11.1%)	-8.3
Use in prepared food (write-in)	5 (13.9%)	3 (8.3%)	-5.6
I do not have excess fruits or vegetables	0 (0%)	0 (0%)	0 (0%)

Table 4. Storeowner interview sample demographics

	Qualitative storeowner sample (n = 14)
Respondent association to store	**n (%), n = 13**
Storeowner	7 (53.8%)
Store manager	2 (15.4%)
Store clerk	1 (7.7%)
Representative from outside organization	1 (7.7%)
Other	2 (15.4%)
Race/Ethnicity (multiple response)	**n (%), n = 13**
Asian	6 (46.2%)
Hispanic or Latinx	4 (30.8%)
White/Caucasian	1 (7.7%)
Middle Eastern (write-in)	1 (7.7%)
Prefer not to answer	1 (7.7%)
Age	**n (%), n = 12**
18-30	2 (16.7%)
31-50	7 (58.3%)
51-70	1 (8.3%)
Prefer not to answer	2 (16.7%)
Gender	**n (%), n = 13**
Male	7 (53.8%)
Female	4 (30.8%)
Prefer not to answer	2 (15.4%)

Language normally spoken at home (multiple response)	n (%), n = 13
Arabic	2 (15.4%)
English	9 (69.2%)
Korean (write-in)	2 (15.4%)
Punjabi (write-in)	2 (15.4%)
Spanish	4 (30.8%)
Other (not including write-in responses)	2 (15.4%)
Prefer not to answer	2 (15.4%)
Language normally spoken among customers (multiple response)	**n (%), n = 13**
Arabic	1 (7.7%)
English	10 (76.9%)
Mandarin or Cantonese	1 (7.7%)
Spanish	12 (92.3%)
Other	1 (7.7%)
Highest level of education	**n (%), n = 13**
Grade 1-12 (no diploma)	1 (7.7%)
High school graduate/GED	2 (15.4%)
Vocational certificate	1 (7.7%)
Some college or Associate's degree	1 (7.7%)
Bachelor's degree	3 (23.1%)
Master's degree or higher	1 (7.7%)
Prefer not to answer	4 (30.8%)

Table 5. Reasons for purchasing produce from stores with a CDFA refrigerator, reported by baseline and follow up customer samples

Customer reasons for purchasing produce at the store (multiple response)	Baseline customer sample, n = 55	Follow up customer sample, n = 43	Difference between baseline and follow up samples
	n (%)	n (%)	Percentage points
Produce is high quality	43 (78.2%)	25 (58.1%)	-20.1
Produce items are a good value	50 (90.9%)	25 (58.1%)	-32.8
This store carries items that I want to buy	49 (89.1%)	29 (67.4%)	-21.7
This store is convenient	54 (98.2%)	38 (88.4%)	-9.8
Other (including write-in responses)	15 (27.3%)	4 (9.3%)	-18
Store is clean/welcoming/has good service (write-in)	4 (7.3%)	0 (0%)	NA

Table 6. Reasons for ***not*** purchasing produce from stores with a CDFA refrigerator, reported by baseline and follow up customer samples

Customer reasons for purchasing produce at the store (multiple response)	Baseline customer sample, n = 28	Follow up customer sample, n = 9	Difference between baseline and follow up samples
	n (%)	n (%)	Percentage points
Produce is not high quality	4 (14.3%)	0 (0%)	-14.3
Produce items are not a good value / they are too expensive	6 (21.4%)	2 (22.2%)	0.8
This store does not carry the produce I want to buy	8 (28.6%)	5 (55.6%)	27
This store is not convenient / I prefer shopping for produce elsewhere	17 (60.7%)	6 (66.7%)	6
Other (including write-in responses)	10 (35.7%)	2 (22.2%)	-13.5
None (write-in)	3 (10.7%)	NA	NA

Table 7. Quantity of monthly produce purchased from stores with a CDFA refrigerator, reported by baseline and follow up customer samples

Quantity of monthly produce typically bought from the store	Baseline customer sample, n = 79	Follow up customer sample, n = 51	Difference between baseline and follow up samples
	n (%)	n (%)	Percentage points
None	24 (30.4%)	8 (15.7%)	-14.7
A little	33 (41.8%)	6 (11.8%)	-30
Less than half	0 (0%)	10 (19.6%)	19.6
About half	8 (10.1%)	11 (21.6%)	11.5
Most	8 (10.1%)	10 (19.6%)	9.5
All	4 (5.1%)	3 (5.9%)	0.8
Don't know	2 (2.5%)	3 (5.9%)	3.4

Table 8. Ease of accessing affordable, appealing, high quality fresh fruits and vegetables in the store's neighborhood, reported by baseline and follow up customer samples

Ease of accessing affordable, appealing, high quality fresh fruits and vegetables in the neighborhood	Baseline customer sample	Follow up customer sample	Difference between baseline and follow up samples
	n (%), n = 83	n (%), n = 52	Percentage points
Very difficult	7 (8.4%)	7 (13.5%)	5.1
Difficult	14 (16.9%)	9 (17.3%)	0.4
Moderate (not easy or difficult)	19 (22.9%)	14 (26.9%)	4
Easy	21 (25.3%)	11 (21.2%)	-4.1
Very easy	16 (19.3%)	10 (19.2%)	-0.1
Don't know	6 (7.2%)	1 (1.9%)	-5.3

Appendix F: CDFA Refrigerator Photos

Wah Fay Market, Oakland, CA – 12/22/2021

Rancho Market, Oakland, CA - 12/22/2021


Russet
POTATOES

Dallaq Market, Oakland, CA – 02/08/2022