

Food Waste Study

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Meals on Wheels

June 11th 2025

Table on Contents	2
Introduction	3
Objectives	4
Preparation for Food Waste Audit	5
Overview of Audit Information	6
Participants	6
Data Collection	7
Results and Data Analysis	10
Recommendation	12
Conclusion	13
References	14
Appendix	15

Introduction

In the United States, approximately 35 percent of the food supply is wasted, resulting in around 149 billion pounds according to the USDA's Economic Research Service 2024.⁶ Food waste, landfill material being the largest category, represents not only the lost nutrients that could have supported families in need but also the wasted resources like water, energy, and labor that were used in logistics. Reducing food waste is not a single effort but it requires collaboration among federal, state, tribal, local governments, faith-based organizations, environmental agencies, communities, consumers, and food supply chains.^{1,2,3,6}

Globally, food waste is still a critical issue and needs to be addressed by all parties involved. In 2016, the USDA and the EPA launched the U.S. 2030 Food Loss and Waste Reduction Goal, aiming to cut food loss and waste in half by 2030.^{1,6} The EPA defines food waste as food sent to landfills, combustion, sewers, anaerobic digestion, composting, or land application, estimating 328 pounds per person a year in 2016.⁶ The goal would be to reduce this to 164 pounds per person by 2030. While food loss (occurring during production up to the retail levels) lacks a baseline at this point in time. Meals on Wheels has implemented innovative programs in Illinois, such as reusable trays, pre-planning to limit overproduction, and timely deliveries to maintain food quality, which indirectly reducing waste.⁴

Purpose

To demonstrate Meals on Wheels' commitment on mitigating food waste by conducting a food waste audit at the Bolingbrook Levy Center, following the "Student Guidelines for Food Waste Audit."

Objectives

- Conduct a food waste audit at Joshua Arms Senior Center during the Wednesday C1 meal service.
- Collect and analyze food waste data, identify reasons for waste, develop an After-Action Report (AAR) to reduce waste across Will County sites that serve C1 meals.
- Produce an executive summary with data and images in an appendix.
- Develop a presentation for Director of Operations and Chief Executive Officer to share findings and recommendations.

Preparation of Audit

Meals on Wheels, operated by Community Nutrition Network & Senior Services Association, delivers meals to homebound seniors and individuals with disabilities and runs Cafes at sites but for this audit it was at Joshua Arms Senior Center (1315 Rowell Ave, Joliet, IL 60433). Joshua Arms C1, overseen by Michelle Gotchie, ensure daily deliveries every day and efficient café operations every weekday. This audit on the Café's C1 meal service is to quantify and analyze food waste, aiming to enhance their reduction techniques and strategies to run the program more efficiently. The audit, scheduled for Wednesday June 11th, 2025, from 11:00am to 12:00pm, aligns

with their regular café hours. On June 6th, 2025, Charmiane Conley assigned Corey Gustafik (myself) to operate and conduct the audit, with Charmaine Conley assisting in gathering supplies and working the logistics.

Audit Process

The audit follows the Guide to Conducting Student Food Waste Audits, adapted for the café's senior congregate setting. Food waste will be collected from trays and the clients will be surveyed, with simplified questions to accommodate any potential cognitive or language barriers. All clients were fluent in English, so surveys will be offered in English only.

Equipment and Supplies

- Regular scale for weighing food waste.
- Buckets for collecting food.
- Disposable gloves and cleaning supplies.
- Clipboard, pens, and data collection forms.
- Labels sheets for each bin.

All equipment will be set up at the Joshua Arms at 10:30am on June 11th, 2025.

Staffing and Roles

- Food Collection: Corey Gustafik will collect trays and note immediate client feedback (e.g., reasons for uneaten food).
- Survey: Corey Gustafik will administer brief surveys on meal satisfaction and reasons for waste, adapted to clients' needs.

- Weighing: Corey Gustafik will weigh and record waste data, compiling survey responses and calculating metrics.
- Cleaning and Disposal: Corey Gustafik will manage waste disposal and sanitation to maintain hygiene for equipment and the site.

Procedure

- Setup (10:30am): Arrange scale, bin, and forms: brief site manager, staff, and clients about SOP.
- Meals and Data Collection (11:00am-12:30pm): serve meals, collect food waste, administer surveys (noting reason for waste), collect food leftovers.
- Waste Management: 11:30am-12:30pm): sort and weigh food waste and leftovers, record data and maintain sanitation.
- Data compilation: Summarize waste data and analyze survey responses to identify patterns.
- Clean up: dispose of waste, sanitize equipment, and store supplies.

Considerations

- Client need: Seniors may have cognitive or physical limitations, requiring clear, respectful communications, simple questions, and food waste returns.
- Logistics: Limited time at Joshua Arms, which means Corey Gustafik had to be efficient with data collection and avoid disrupting the normal operations.
- Data accuracy: Scales will be calibrated, and food will be weighed and placed in proper bucket.

Goals

- Quantify the amount and types of food waste and left over from Café.
- Identify reasons for uneaten food.
- Provide recommendations to Meals on Wheels, such as adjusting portion sizes, modifying menus or enhance orders.

Overview of Audit Information

- Location: Joshua Arms Senior Center, 1315 Rowell Ave, Joliet, IL 60433
- Numbers of Clients Approximately 15-20 café participants
- Date: June 11th, 2025
- Meal Service: Wednesday C1 meal (lunch, 11:00am-12:00pm)
- Menu: BBQ pulled chicken, cheesy mashed potatoes, broccoli, wheat bun and chilled pears
- Staff: Corey Gustafik (Audit Manager), Michelle Gotchie (site Manager), Charmaine Conely (Corey's Preceptor)

Data Collection:

Data will be collected onsite by assigned participants. The following tables summarize meal service, equipment weights, food weights and percentages and survey results:

Table1:

meal Service- Menu Description (11:00am-12:00pm)

Food Item	Presentation Format

Pasta	Pan
BBQ pulled chicken	Pan
Cheesy mashed potatoes	Pan
broccoli	Pan
Wheat bun	Pan served in container
Chilled pears	Pan, packaged in container

Table 2:*weight of equipment*

<i>Weight of pans and buckets</i>
<i>1 Pan=0.28 lbs.</i>
<i>Bucket 1= 0.88lbs</i>
<i>Bucket 2=0.72 lbs.</i>

Table 3:*Weight and units of food received.*

<i>Meal Service</i>	<i>Food Items</i>	<i>Presentation Format</i>	<i>Total Weight or Units</i>
<i>Lunch</i>	<i>Pasta</i>	<i>Pan</i>	<i>7.22lbs</i>

11:00am- 12:00pm	<i>Marinara sauce</i>	<i>Pan</i>	<i>13.1lbs</i>
	<i>Alfredo Sauce</i>	<i>Pan</i>	<i>11.68lbs</i>
	<i>Chicken</i>	<i>Pan</i>	<i>10.14lbs</i>
	<i>Italian Salad</i>	<i>Pan</i>	<i>5.42lbs (x2)</i>
	<i>Italian Dressing</i>	<i>Container within Pan</i>	<i>10.2lbs</i>
	<i>Fresh Fruit</i>	<i>Pan</i>	<i>20.24lbs</i>
	<i>Whole grain rolls</i>	<i>Individual</i>	<i>12 units</i>

Table 4:*Client Survey*

Type of Food (one item per line)	Loss Reason (ex. Didn't like, not enough detail)
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1.pasta with alfredo sauce	Didn't like the taste
2.marinara sauce	Too much sauce
3.italian salad	Doesn't like cucumbers
4.salad dressing	Didn't like the taste
5.salad dressing	Didn't like the taste
6.marinara sauce	Too much sauce
7.garlic bread	Didn't like the taste
8.Italian salad	Didn't like the taste and too much food
9.garlic bread	Didn't like that taste
10.Italian dressing	Too much dressing
11.garlic bread and pasta	Too much
12.Italian salad	Too plain and bland
13.Italian dressing	Too much dressing
14. Italian dressing	Too much dressing
15. Italian dressing	Too much dressing
16. Italian dressing	Too much dressing
17.italian dressing and salad	Too much dressing
18. garlic bread	Didn't like the taste

Table 5:*food items for recycling or reuse*

Item	End Weight	Reasoning	Food wasted Weight	Food Waste %
Bucket #1	13.42lbs	Leftovers	Marinara Sauce-5.36lbs Alfredo Sauce -5.65lbs Italian Dressing-1.85 Whole grain rolls-0.12	Marinara Sauce- 40% Alfredo Sauce-42% Italian Dressing -13.8% Whole grain rolls-0.009%
Bucket #2	4.28lbs	Food waste	Marinara Sauce 0.12 Alfredo Sauce-0.13 Italian Dressing-3.53 Garlic Bread-0.12 Italian Salad-0.14 Fruit Salad-0.24	Marinara Sauce -0.03% Alfredo Sauce-0.03% Italian Dressing-82.5% Garlic Bread-0.03% Italian Salad-0.03% Fruit Salad-0.56%

Note: individual packaged items (e.g., milk cartons, water) will not be counted because the site itself supplied these resources.

Table 6:*Initial food weight, leftover weight/ percentage, and food waste weight/ percentage*

Meal Service	Food Items	Total Weight or Units w/o pan weight	leftover Weight (13.42lbs)	left-over %	Food Waste Weight (4.28lbs)	Food Waste %
lunch 11:am-12:15pm	Pasta	7.22lbs in Pan	0.00lbs	0	0.00lbs	0%
	marinara Sauce	13.1lbs in Pan	5.36lbs	0.4	0.12lbs	0.03%
	Alfredo Sauce	11.68lbs in Pan	5.65lbs	0.42	0.13lbs	0.03%
	Chicken	10.14lbs in Pan	0.00lbs	0	0.00lbs	0%
	Italian Salad	5.42lbs (x2) in Pan	0.00lbs	0	0.14lbs	0.03%
	Italian Dressing	10.20lbs	1.85lbs	0.138	3.52lbs	82.50%
	Fresh Fruit	20.24lbs	0.00lbs	0	0.24lbs	0.56%
	Whole Grain Rolls	12 units	.12lbs	0.00009	0.00lbs	0%
	Garlic Bread	5.14lbs	0.00lbs	0	0.12lbs	0.03%

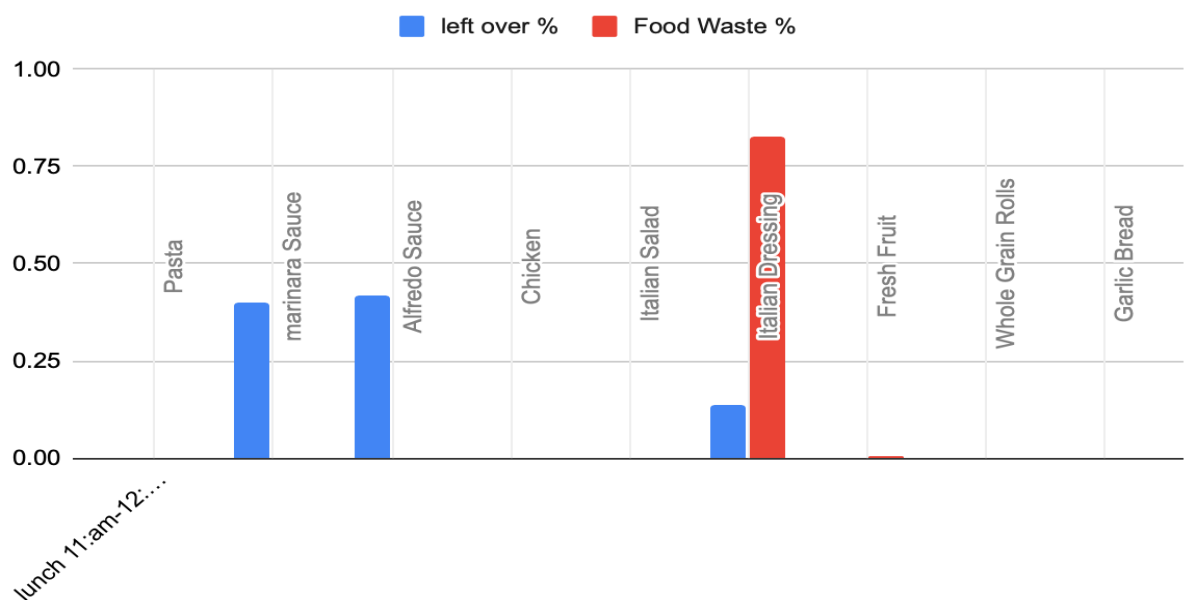
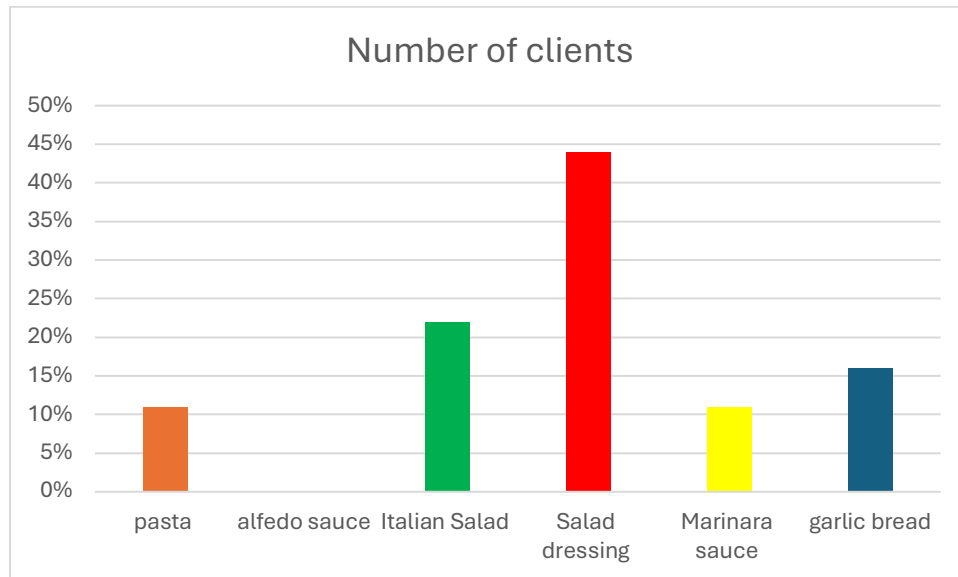
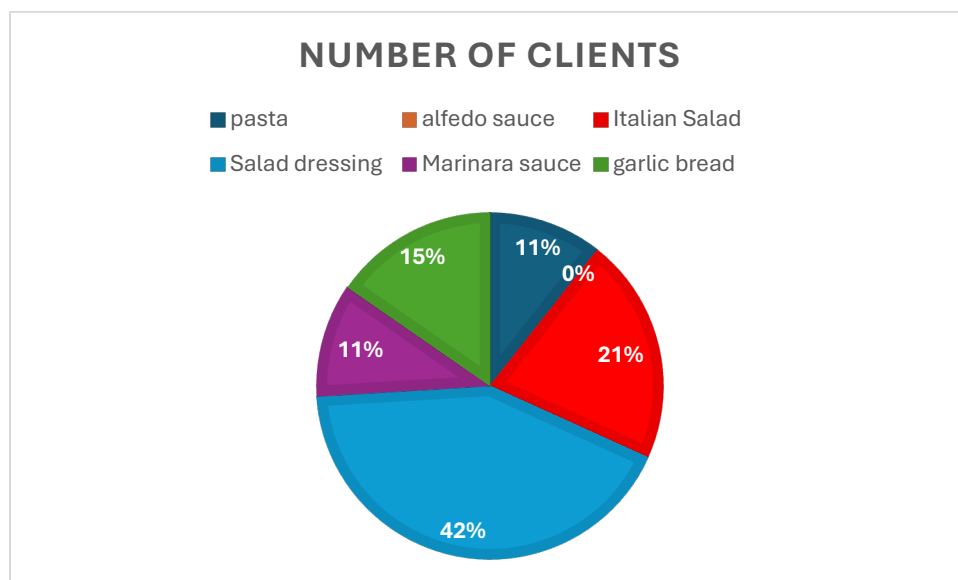
Table 7:*Food waste and Leftover percentage by food item*

Table 8:*Type of food loss by category***Table 9:***Percentage of food loss by category*

Results and Data Analysis

Initial food weight will be treated as 100%, with wasted food weighed and calculated as a percentage. Survey responses will be analyzed to identify patterns and data will be represented in tables and charts to highlight total waste and key contributors.

Recommendations

- Adjust portion size: reduce portions for high-waste items (e.g., Italian dressing and sauces) based on client consumption patterns and leftovers
- Modify Menu: replace unpopular items (e.g., Italian dressing, garlic bread, and whole grain rolls) with alternatives based on client feedback or adjust recipes to improve taste.
- Implement Pre-ordering: Introduce a more efficient RSVP or pre order system to better estimate the needs and coordinate with food vendor to adjust food sizes.
- Enhance Staff training: provide workshops on waste reduction techniques, including portion control and client engagement.
- Adopt Sustainable packaging: Use reusable or recycling container for sauces and individual items to minimize waste.

Conclusion

The food waste audit at Joliet's Joshua Arms Senior Center with Meals on Wheels commitment to the U.S. 2030 Food Loss and Waste reduction Goal. By following the

Student Guidelines for Food Waste Audits, this study provides actionable insights to reduce waste, optimize resources and enhance service sustainability. The site did not have a large amount of food waste on their end, but the food vendor portion sizes contributed to most of the food waste because of the inaccurate sizes of sauces related to food.

References

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- 2.FDA. (2025). Food Loss and Waste. <https://www.fda.gov/food/consumers/food-loss-and-waste>
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- 4.Meals on Wheels America. (2024). Nutrition Programs and Food Security. <https://www.mealsonwheelsamerica.org/our-programs/nutrition>
- 5.ReFED. (2021). Roadmap to 2030: Reducing U.S. Food Waste by 50%. <https://www.refed.org/insights/roadmap-to-2030>
- 6.USDA. (2024). Food Loss and Waste FAQs. <https://www.usda.gov/foodlossandwaste/faqs>

World Resources Institute. (2016). Food Loss and Waste Accounting and Reporting Standard. <https://www.wri.org/research/food-loss-and-waste-accounting-and-reporting-standard>

Appendix

Table 1: meal Service- Menu Description (11:00am-12:00pm)

Food Item	Presentation Format
Pasta	Pan
Marinara sauce	Pan
Alfredo sauce	Pan
Chicken	Pan
Italian salad	Pan served in container
Italian dressing	Pan, packaged in container
Fresh fruit	Pan served in container
Garlic Bread	Pan

Whole grain rolls	12 units
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Table 2: weight of equipment

<i>Weight of pans and buckets</i>
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Table 3: Weight and units of food received.

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	<i>Marinara sauce</i>	<i>Pan</i>	<i>13.1lbs</i>
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	<i>Chicken</i>	<i>Pan</i>	<i>10.14lbs</i>
	<i>Italian Salad</i>	<i>Pan</i>	<i>5.42lbs (x2)</i>
	<i>Italian Dressing</i>	<i>Container within Pan</i>	<i>10.2lbs</i>
	<i>Fresh Fruit</i>	<i>Pan</i>	<i>20.24lbs</i>
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5.salad dressing	Didn't like the taste
6.marinara sauce	Too much sauce
7.garlic bread	Didn't like the taste
8.Italian salad	Didn't like it and too much
9.garlic bread	Didn't like it
10.Italian dressing	Too much
11.garlic bread and pasta	Too much
12.Italian salad	Too plain and bland
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14. Italian dressing	Too much
15. Italian dressing	Too much
16. Italian dressing	Too much
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Table 5: food items for recycling or reuse

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Table 7: Food waste and Leftover percentage by food item

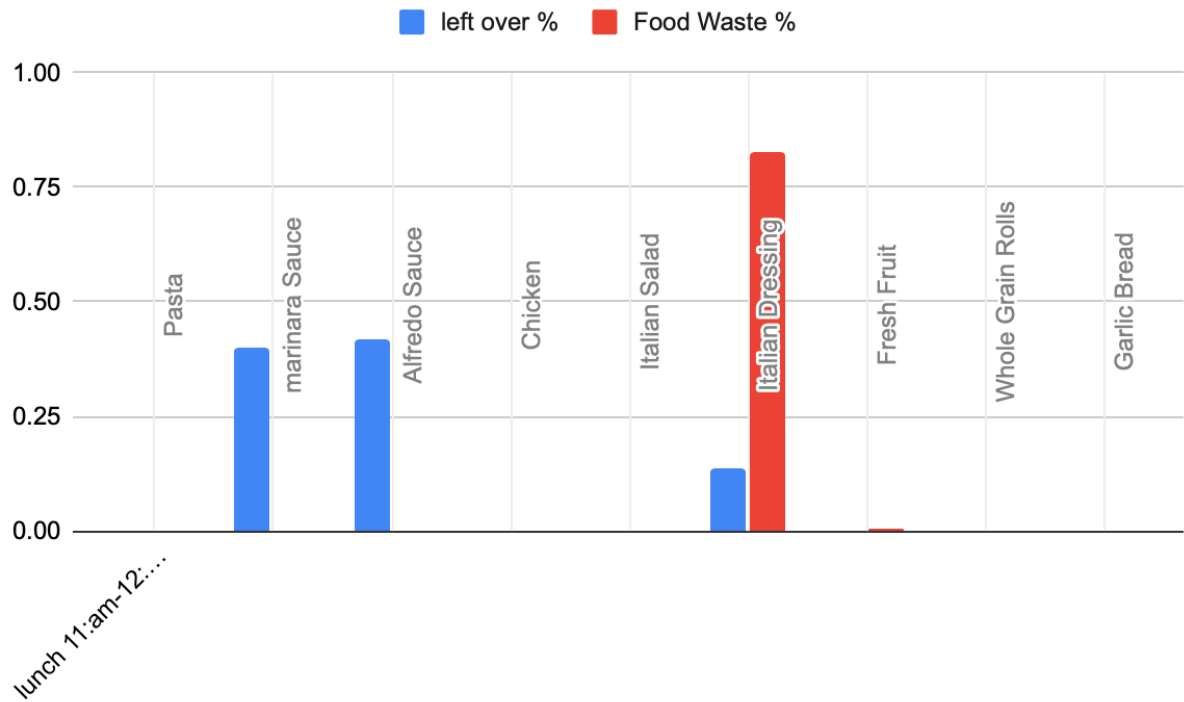


Table 8: Type of food loss by category

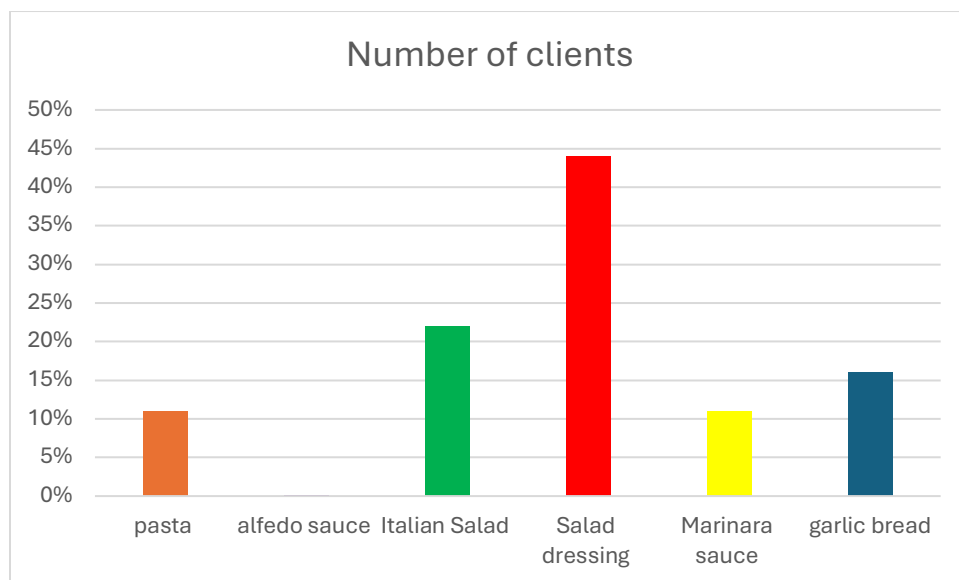
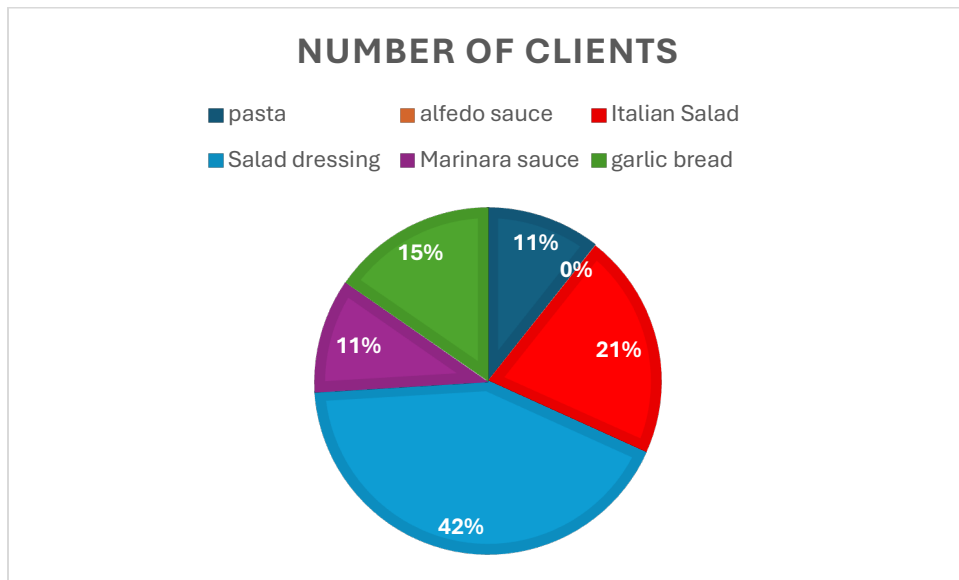


Table 9: Percentage of food loss by category



Collection and Pictures from site



