



Reducing Food Waste in the Home

Jenna D. Anding, PhD, RD, LD
Professor & Extension Specialist
Texas A&M AgriLife Extension Service



1

Let's talk about.....

- Food waste:
 - Trends
 - Sources
 - Contributing factors
- Why we should be concerned about food waste
- Tips for reducing food waste in the home



2



Food Waste or Wasted Food?

Edible food that is lost, discarded, or uneaten.

3

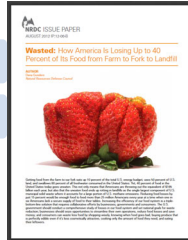
How much food is going to waste in the US?



Up to 40% of food in the US is lost.



Other studies estimate 25-30% (post harvest)

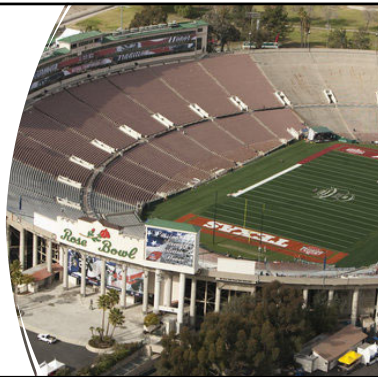


Source: Natural Resources Defense Council, August 2012

4

How much food is going to waste in the US?

Enough food to fill the Rose Bowl every day.



• Source: Bloom, J. *American WasteLand: How America Throws Away Nearly Half of Its Food (and What we Can Do About It)*.

5

How much food is going to waste in the US?

~20 pounds of food per person per month



Source: Natural Resources Defense Council, August 2012; Buzby, Wells, and Hyman, USDA ERS, *The Estimated Amount, Value and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the US, 2014*; Hoover, D. *Estimating Quantities and Types of Food Waste at the City Level*, NRDC, 2017.

6

Let's talk about it..... How much food do you throw away?



Food Waste Journal

KEEPING TRACK OF THE TYPES AND AMOUNTS OF FOOD WASTE THROWN AWAY CAN HELP YOU UNDERSTAND YOUR OWN CONSUMPTION PATTERNS AND HOW MUCH FOOD YOU WASTE. THE MORE YOU KNOW, THE BETTER YOU CAN BE AT REDUCING YOUR FOOD WASTE. TRY TO BEING "SMART" AND HOW MUCH YOU WASTE TO CHANGE.

1. Record the type of food (vegetable, fruit, meat, dairy, etc.) and the amount (weight or volume) that you throw away. Be as specific as possible. For example, record the amount of food that is thrown away, not just the amount of food that is thrown away. Record the amount of food that is thrown away, not just the amount of food that is thrown away. Record the amount of food that is thrown away, not just the amount of food that is thrown away.

2. Record the date and time that the food was thrown away.

3. Record the method of disposal (landfill, compost, etc.).

4. Record the reason for the waste (expired, damaged, etc.).

5. Add up the amount of each of the above food and beverage types for each week and then sum by adding the amount of food waste in each hour.

Type of Food	Amount	Method of Disposal	Why it was thrown away	Estimated Value

7

Three Types of Food Waste

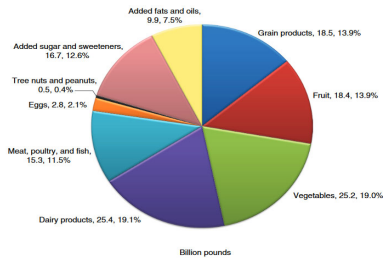
- **Avoidable:** Edible foods and beverages that were thrown away.
 - Crust cut off a sandwich
- **Possibly avoidable:** Edible foods and beverages consumed by some but not others.
 - Peel of a carrot; skin of a baked potato
- **Unavoidable:** Waste that comes from foods and beverages but is not edible under normal circumstances.
 - Chicken bones
 - Egg shells
 - Tea bags



Source: Kelleher and Robbins, BioCycle, August 2013

8

What types of foods/beverages are wasted?



- Top 3**
- Dairy (19.1%)
 - Vegetables (19%)
 - Grain (13.9%)
 - Fruit (13.9%)

Source: Buzby, Wells, and Hyman, USDA ERS; *The Estimated Amount, Value and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the US, 2014 (2010 data)*

9



Let's talk about it.....

What types of food did you dispose of most often?

Avoidable, Possibly Avoidable or Unavoidable?


10

3-city study of food waste

Kitchen diaries

- 69% was edible
- Most common foods wasted were
 - Fruits and vegetables
 - Leftovers

29% of the trash thrown out by consumers was food



Source: Hoover D. Estimating Quantities and Types of Food Waste at the City Level, NRDC, 2017.

11



Why should we care about food waste?




12

1. Wasted resources

- Food produced in the US uses
 - 10% energy (3% is estimated lost)
 - 50% of land
 - 80% of freshwater (25% is lost)

Sources: EPA, 2011; USDA, Natural Resources Defense Council, 2012; Levis et al., *Waste Management*, 2010; Buzby and Hyman, *Food Policy*, 2012.



13

2. More people to feed.....

United States Population: 1990 to 2060

Numbers (in millions)

The population is projected to increase from 314 million in 2012 to 420 million in 2060, reaching 400 million in 2025.

2011 2025 2040 2050 2060

Source: U.S. Census Bureau, International Data Base, July 2015 Update.

World Population: 1950-2050

Population (billions)

Year

3 Billion 4 Billion 5 Billion 6 Billion 7 Billion 8 Billion 9 Billion

Source: U.S. Census Bureau, International Data Base, July 2015 Update.

14

Projected Population Growth in Texas

Millions

Year

— Zero Migration
— 0.5 of 2000-2010 Migration
— 2000-2010 Migration

Source: Dr. Lloyd Potter, State Demographer, TDC, UTSA, July 2016

15

3. Wasted food = wasted opportunity to feed hungry people

46.5 million people receive food and other services through food banks every year.

13.1% of Texas households experience food insecurity (2019 data)

Reducing food losses by 15% alone could feed more than 25 million Americans every year.



16

4. Wasted food contributes to landfills

• Largest component of municipal solid waste; more than plastics, metals, wood or yard waste.

- 97% of food waste ends up in a landfill
- Production of methane gas → impact on the environment?



Sources: EPA, 2011; USDA, Natural Resources Defense Council, 2012; Levis et al., *Waste Management*, 2010; Buzby and Hyman, *Food Policy*, 2012.

17

5. Wasted food = money lost

- The value of food lost in the US was estimated at \$165 billion
- Per household, this is estimated at \$936 a year or \$2.56/day.
- Per person estimates range from \$371 to \$400 annually



Sources: EPA, 2011; USDA, Natural Resources Defense Council, 2012; Levis et al., *Waste Management*, 2010; Buzby and Hyman, *Food Policy*, 2012; USDA ERS, *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States*, Feb. 2014.

18

Let's talk about it.....

What was the dollar value of the food that you disposed of in your home?

Food Waste Journal AGRICULTURE EDUCATION

Recording food that is given and amount of food disposed. This journal can be used to track food waste, determine causes of food waste, and estimate the amount of food waste. It can also be used to track food waste disposal methods and costs.

1. Record the date and amount of food disposed. This journal can be used to track food waste, determine causes of food waste, and estimate the amount of food waste. It can also be used to track food waste disposal methods and costs.

2. Record the date and amount of food disposed. This journal can be used to track food waste, determine causes of food waste, and estimate the amount of food waste. It can also be used to track food waste disposal methods and costs.

3. Record the date and amount of food disposed. This journal can be used to track food waste, determine causes of food waste, and estimate the amount of food waste. It can also be used to track food waste disposal methods and costs.

4. Record the date and amount of food disposed. This journal can be used to track food waste, determine causes of food waste, and estimate the amount of food waste. It can also be used to track food waste disposal methods and costs.

Food	Amount	Method of Disposal	Why It Was Disposed	Estimated Value



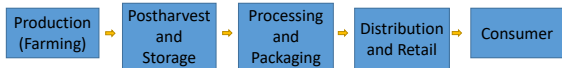
19

How did we get here?
How/why does
food waste happen?



20

Food Supply Chain



21

Let's talk about it.....

Think about the foods that you have disposed of in your home.

What were the factors that led to the disposal of those foods?

Food Waste Journal AGRICULTURE
EXTENSION

Keeping track of the types and amounts of food disposed of helps you identify areas for improvement. The "Food Waste Journal" helps you track food waste and identify areas for improvement.

1. Record the date, time, and amount of food disposed of in your home. Be sure to include the type of food and the reason for disposal.

2. Note the location where the food was disposed (e.g., trash can, compost bin, etc.).

3. Record the amount of food waste in terms of weight or volume (e.g., number of servings, etc.).

4. Note the reason for disposal (e.g., expired, spoiled, etc.).

5. Record the amount of food waste that is recycled or composted.

6. Note the amount of food waste that is landfilled or incinerated.

Food	Amount	Method of Disposal	Why it was disposed	Estimated Value

22



23

We Can't Save All of It.....

1. Technical factors
 - * Most foods are perishable; safety and storage considerations
2. Time and space factors
 - * United States is a big country; getting unwanted food across the country and to other processing plants/locations is a challenge
3. Economic factors
 - * Cost to recovery food; transportation cost (plus factors #1 and #2)
4. Consumer factors
 - * Individual tastes, preferences; food habits

Source: Buzby, Wells, and Hymen, USDA ERS; The Estimated Amount, Value and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the US, 2014

24

Environmental Protection Agency - Sustainable Management of Food

Goal: Reduce food waste by 50% in the next 15 years.

The image shows a screenshot of the EPA's Sustainable Management of Food website on the left and the Food Recovery Hierarchy pyramid on the right. The pyramid is an inverted triangle with six levels, from top to bottom: Source Reduction (purple), Feed Hungry People (red), Feed Animals (green), Industrial Uses (yellow), Composting (orange), and Landfill/Incineration (brown). The website screenshot includes a navigation bar, a main content area with various articles and images, and a footer with the source URL: <https://www.epa.gov/sustainable-management-food>.

25

The image displays four historical posters related to food waste. The first poster, 'FOOD IS A WEAPON', shows a plate of food with a knife and fork, with the text 'DON'T WASTE IT! BUY WISELY - COOK CAREFULLY - EAT IT ALL'. The second poster, 'YOU WOULDN'T DEPRIVE YOUR FAMILY OF FOOD!', shows a man and a woman with a child, with the text 'OF COURSE NOT! BUT - THAT'S EXACTLY WHAT YOU DO WHEN YOU THROW GOOD FOOD AWAY!'. The third poster, 'Be Patriotic sign your country's pledge to save the food', shows a woman in a patriotic dress. The fourth poster, 'food', lists six tips: 1-buy it with thought, 2-cook it with care, 3-use less wheat & meat, 4-buy local foods, 5-serve just enough, 6-use what is left. Below the posters is the question: **How can we reduce food waste in the home?**

26

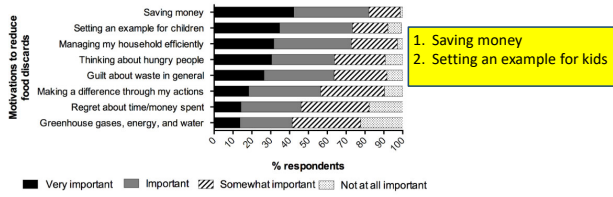
Why do we waste food?

- Lack of awareness (food is cheap; don't realize how much food is wasted)
- Desire for eating only the freshest food
- Concern about foodborne illness
- Confusion over label dates
- Spoilage
 - Improper storage; forgotten in the refrigerator; partially used ingredients
- Impulse and bulk purchases
- Poor planning
- Over-preparation

The image shows a hand holding several fresh vegetables, including carrots and potatoes. Below the list is the source information: Source: Natural Resources Defense Council, 2012; Neff et al. Wasted Food: U.S. Consumer's Reported Awareness, Attitudes, and Behaviors, June 2015

27

What motivates consumers to reduce food waste?

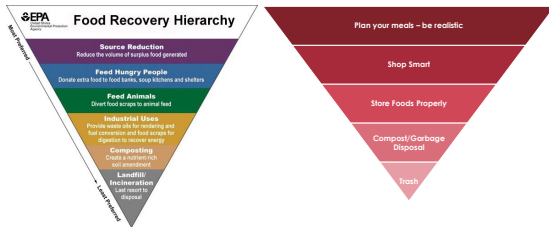


1. Saving money
2. Setting an example for kids

Source: Neff et al. Wasted Food: U.S. Consumer's Reported Awareness, Attitudes, and Behaviors, June 2015

28

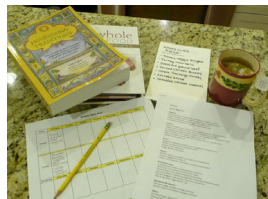
AgrLife Extension Hierarchy for Reducing Food Waste in the Home



29

Plan Your Meals – Be Realistic

- Are there any ingredients in the refrigerator or freezer that you need to use first?
- Think about how many times you will be eating away from home.



30



Shop Smart

- Shop your refrigerator and freezer first.
- Stick to your list...unless there is a good reason.
- Have a plan for each item you put in the cart
- Buy only what you need (and will use)
 - Bulk items – do you really save??
 - Sale items – is it a sale if it goes to waste?
 - Bundled items (“buy a rotisserie chicken and get potato salad free!”)
- Don’t shop on an empty stomach

31

Store Foods Properly

- Fresh Produce
 - Store it right.
 - Use within 2-3 days for best quality
- Preserve surplus produce – but only if you will use it!
- Date your prepared foods (leftovers)
 - Use within 2-3 days for best quality/safety
- Keep an inventory of what is in your freezer

32

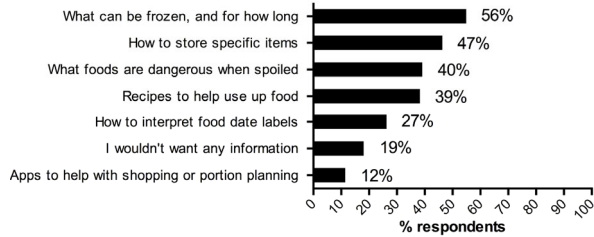
Home Composting

- Need the right mixture of “green” and “brown”
- Helps improve soil
- Keeps uneaten food out of the trash/landfill



33

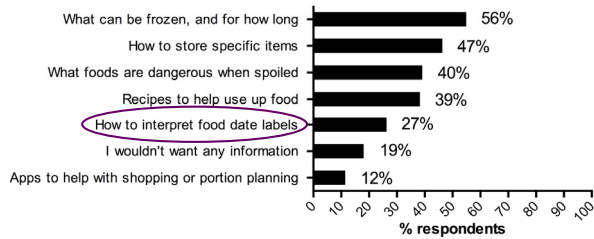
Educational Opportunities for Addressing Food Waste at the Consumer Level



Source: Neff et al. *Wasted Food: U.S. Consumer's Reported Awareness, Attitudes, and Behaviors*, June 2015

34

Educational Opportunities for Addressing Food Waste at the Consumer Level

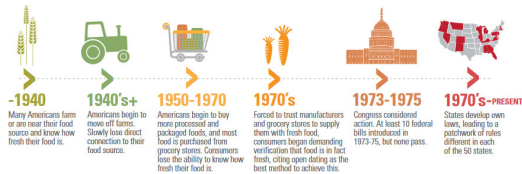


Source: Neff et al. *Wasted Food: U.S. Consumer's Reported Awareness, Attitudes, and Behaviors*, June 2015

35

Did you know?

With the exception of infant formula, the FDA does not require food manufacturers to place "expired by" "use by" or "best before" dates on food products.



Source: Natural Resources Defense Council, *The Dating Game: How Confusing Food Date Labels Lead to Food Waste in America*, 2013.

36

What does the date mean?

- Best-by
- Pull-by
- Best-If-Used-By
- Pack date
- Sell-by
- Use-by
- Best if used by
- Use-by
- Expiration

37

Did you know?

91% Americans report they “occasionally” throw away food after the “sell-by” date because they are worried about food safety.

25% of Americans do this “all the time”

Source: Food Marketing Institute, 2011

38

Consumers are confused!

- No federal regulation of sell-by dates.
- State laws exist, vary, and are constantly updated.
- Some cities have laws prohibiting the sale of perishable foods after the expiration date.
- Manufacturers determine the shelf life of their product.
- Consumers falsely believe that date labels are indicators of safety.

NRDC REPORT

The Dating Game:
How Confusing Food Date Labels Lead to Food Waste in America

NRDC Harvard

Source: Natural Resources Defense Council, The Dating Game: How Confusing Food Date Labels Lead to Food Waste in America, 2013.

39

Food Keeper (USDA)



There is an app for that!

Is My Food Safe? (Academy of Nutrition and Dietetics)



40

Communities are Getting On Board



San Francisco – Imperfect Produce



Trayless dining on college campuses

Your Fruit at Whole Foods Is Going to Get a Little Uglier



Whole foods selling "ugly fruit"



Recycling food and teaching culinary skills to unemployed adults
DC Central Kitchen

41

New educational program focused on reducing home food waste

- *Get a Taste for Reducing Food Waste*
 - Problem with food waste
 - Meal planning to reduce food waste
 - Understanding the dates on food labels
 - Home composting
- Participants complete a food diary pre (and hopefully post)
- Pre- and post-survey to assess impact



42

Final thoughts.....

- Lots of food is being wasted that could be put to better use.
- Food waste has economic, environmental, and other consequences.
- When talking about food waste, you have to know your audience.
- The desire for “fresh” and “perfect” foods fuel food waste.
- Date stamps on labels and fear of foodborne illness are also big contributors to food waste.

43

Necessity is the mother of invention.

Meet Mike Yurosek – father of the “baby carrot”

- Carrot grower; was losing up to 70% of his crop due to their shape
- Some of the culled carrots were fed to animals; others were discarded



44



TEXAS A&M
AGRILIFE
EXTENSION

45
