



ReFresh Nebraska

Stop the Rot

Winter 2019

The Impact of Food Tracking Technologies

The summer 2019 issue of ReFresh looked at how wasted food can be kept out of the landfill with the help of technologies like on-site aerobic digestion, or grinding, followed by anaerobic digestion at wastewater treatment facilities. Such end-of-life technologies are great for keeping food out of the landfill, but what role can automation play in keeping it from going to waste in the first place? Some of the biggest innovations in recent years have come in how food is tracked along the supply chain to ensure freshness, and inform purchasing, display and prep schedules.

The food industry has long believed that for any given type of produce, everything picked on a given day will remain fresh for roughly the same amount of time. They even base "best by," and "use by" dates on the assumption. However recent studies have shown that changes in temperature and humidity, not to mention length of exposure, can have a profound effect on product freshness. In fact, items picked in the cool of the morning have the potential to remain fresh up to a week longer than those picked in the heat of the afternoon. As a result, as much as 1/3 of produce label dates can be wrong from the very day they leave the field.

New technologies by companies like Wal-Mart and Zest Labs, (utilized by Hy-Vee among others), are using this information to not only revolutionize freshness dating, but cross-country transportation schedules as well. Pallet sensors track environmental conditions from harvest to store, continually updating estimated shelf-life along the way. Negatively impacted pallets can then be routed

to nearby stores while those packed in peak conditions are allowed a few extra days in transit so that each arrive in stores or distribution centers with roughly the same shelf-life.

Further adjustments to display and prep schedules can then be made based on conditions encountered along the way, ensuring that as much product as possible reaches consumers before it goes bad. In fact, Zest Labs has found that, when properly tracked, transit waste can be reduced by as much as fifty percent. Similar sensors can also be used to track pallets or cases of beef, poultry, pork and seafood with the added benefit of documenting provenance in an effort to reduce fraud, and provide support in the event of recalls.

Once it reaches consumer-facing businesses like restaurants and cafeterias, product is sorted for use by estimated shelf-life, and stored to maximize freshness. The focus then shifts to pre-consumer kitchen waste through Inventory Management Systems (IMS) from companies like Phood, Winnow, and Leanpath - all of which help reduce waste by tracking foodstuff from the moment it enters a facility until it's consumed or otherwise disposed of. While similar to the rudimentary Food Waste Challenge covered in our Spring 2018 issue, technology in today's commercial kitchen goes lightyears beyond pen and paper.

For initial set-up, all recipes are entered into the system, followed by production cycles, and opening stock quantities. Once launched, the IMS is ready to track purchases, as well as the weight and type of food wasted over the course of a day. For this last step, some systems require

a few minutes of data entry at the scale, while others utilize digital recognition software that can easily identify numerous items in a single weighing - before or after they've been prepped and cooked.

Either way, the system is then able to inform future purchases, and meal plans based on the reason for the waste - be it over purchasing, over production, food safety issues, or customer choices - and arrange menu cycles that ensure all items purchased can be used in multiple recipes. Monetary and environmental values can also be assigned and displayed by the IMS - not as a punitive measure, but as a way to instill staff pride for reducing waste wherever possible.

In certain settings, like the school cafeteria, post-consumer data can be similarly displayed at the point of disposal, relaying information to kids as they place items in the bin. Schools employing such monitors report as much as 30 percent reduction in waste as kids learn about impact and how it can be prevented. In commercial kitchens, post-consumer data helps inform considerations like customer preferences, and portion sizes, which in turn leads to food saving measures like batch and plate adjustments.

Embraced by staff and properly implemented, the impact of these technologies on individual restaurants and cafeterias is significant, with many reporting as much as a 14 percent reduction in food waste over the course of a year. If standardized throughout the industry, the repercussions would be profound, and surely go a long way toward EPA's goal of reducing food waste 50 percent by 2030.



20 WASTE-CUTTING TIPS EVERY FOODSERVICE CHEF SHOULD KNOW

1. Watch The Salad Bar

- ◆ For dinner or late service, offer grab-n-go salads instead of restocking the salad bar OR consider rotating to smaller pans as service winds down.

2. Build Re-Use Into Your Cycle Menu

- ◆ If running multiple soups, leave one open toward the end of the week & re-run unused soups saved from earlier.
- ◆ Leftover proteins like chicken breast can be chopped & placed in the salad bar.
- ◆ Use leftover breads to make croutons.

3. Plan An Extra Soup Each Day Made From Leftovers

- ◆ Create a delicious soup from yesterday's left-overs. Build it into your menu cycle & make it a standard offering.
- ◆ A rotating soup can be a smaller quantity than the others. Its purpose is just to use any leftover, overproduced product.

4. Beware Of Big Batches

- ◆ Too often, batch cooking means 1 or 2 big batches which can result in lots of waste. Cook a batch in smaller portions with the goal of getting as close to cook-to-order as possible.

5. Change Your Hotel Pans

- ◆ Consider getting rid of large hotel pans. Opt for smaller, more attractive pans & platters instead. This can help maintain freshness & improve guest appeal.

6. Add Sauces & Garnishes Last

- ◆ Wait to put seasonings or sauces on products until right before they go to the line. This increases reuse opportunities & ensures a fresher product.
- ◆ Rethink inedible or excessive garnishes. Re-imagine plate design with creative colors that don't lend themselves to extra food waste.

7. Keep Foods Fresher, Longer

- ◆ Refrigerate avocados with cut onions
- ◆ Soak sliced apples in ginger ale
- ◆ Wash berries in vinegar
- ◆ Store mushrooms in a paper bag
- ◆ Freeze & preserve fresh herbs in olive oil
- ◆ Separate lettuce with paper towels
- ◆ Wrap celery in foil
- ◆ Peel, cut & freeze ginger
- ◆ Refrigerate nuts & seeds
- ◆ Store potatoes with an apple

8. Reimagine Pizza

- ◆ During the last hour of service, make one pizza with different sets of toppings on each half.
- ◆ Consider transitioning from large pizzas to individual pizzas.

9. Crack Down On Egg Waste

- ◆ Don't mass produce big batches not justified by sales.
- ◆ Track leftovers & cut back on production to meet demand.
- ◆ Make enough to get through morning rush, then make smaller batches to get through the remainder of the morning.
- ◆ Hold the toppings. Wait to layer on cheese & veggies until pans are ready to put on the line.
- ◆ Find ways to safely reuse leftover eggs. Incorporate into pre-made breakfast burritos, or add to dishes like fried rice.

10. Reuse Leftover Bakery Treats Like Cake, Pie, Or Bread:

- ◆ Cake pops. Ball up cake & cover with frosting for cake-to-go.
- ◆ Trifle. Put cake, cream or custard, & fruit in a large cup or bowl to make this English dessert.
- ◆ Bread pudding. Use individual cups for easier pricing.

11. Cut Pastry Waste

- ◆ Buy wisely, reuse & market. Keep pastry offerings uniform for multiple uses like catering & retail. That way, changes to one can be used in the other.
- ◆ Get creative with sales. Target a "Snack Time" sale or "Third Shift Special" to entice afternoon sales.

12. Watch Casserole Waste

- ◆ Review popularity on a regular basis & consider making a half pan of less popular items, or make a change before the next production cycle.
- ◆ Or try individual portioning in tart style dishes for increased merchandising appeal, while allowing for better control of small batch production.
- ◆ Focus on the seasons. Production of comfort foods in colder months can often be lightened as summer approaches.

13. Watch Soup & Chili

- ◆ Starches like noodles, potatoes, or rice can be left out until served to avoid a "glue" that can prohibit reuse after cooling.
- ◆ Make smaller batches throughout the day.
- ◆ Watch the weather. As with casseroles, weather or season changes can affect sales.

14. Reuse Breakfast Meat For Other Meals

- ◆ Bacon & sausage aren't just for breakfast. As with eggs, track leftovers & cut back on production to meet demand.
- ◆ If product remains, crumble bacon for the salad bar, or use with potatoes, hamburgers or other recipes.
- ◆ Sausage can be used as pizza toppings or saved for gravy.

15. Use Fruit & Vegetable Trimmings

Trim waste is inevitable, but consider some of these ideas before throwing in trash or compost:

- ◆ Melons: Cut off the tough skin, then use rinds as a cucumber substitute in salads or cold soups.
- ◆ Veggies: Store trimmings in freezer until there are enough for a scratch vegetable broth.
- ◆ Celery: Leaves are full of flavor & make a great addition to meatloaf, soups & stews.
- ◆ Potatoes: Peels can be deep fried & salted to make tasty potato skin snacks.

16. Trim Down Trimmings

- ◆ Review trimming procedures & buckets with staff frequently to ensure they're not taking more than necessary.
- ◆ Ensure staff have proper tools in good condition. High-precision blades can have a huge impact.

17. Use Up Soft Serve Before Cleaning The Machine

- ◆ Make ice cream sandwiches.
- ◆ Create a "sundae bar" with fruit, candy, nuts & toppings

18. Use The Juice From Canned Fruit

- ◆ Create flavored water
- ◆ Sweeten iced tea
- ◆ Prepare a fruity salad dressing
- ◆ Use in a marinade
- ◆ Glaze a ham
- ◆ Combine with slices for a frozen fruit popsicle

19. Don't Dump Coffee Down The Drain

- ◆ Seal & refrigerate for sale as iced coffee. Enhance with half-&-half or flavored syrups.
- ◆ Coffee grounds are an excellent compost supplement. Be sure to save for the bin.

20. Start A "Food Waste Ideas" Logbook

- ◆ Keep a staff notepad in the kitchen for questions and ideas
- ◆ Incorporate a Q&A into pre-shift meetings.

ReFresh Recipes



Shopping your fridge first is an important strategy for reducing food waste. Here's a recipe idea that will help you use what you have before buying more!

WHOLE CARROT SOUP

The stars of this autumnal soup are carrots — the roots & the tops. Combined with potatoes & a few simple spices, this is an easy dish to whip up for dinner & even easier to freeze for later. The carrot tops add a swirl of color & their slight bitterness makes a lovely complement to the soup's sweetness.

SERVINGS:

4-6

USES UP:

Carrots, Carrot Tops & Potatoes

INGREDIENTS:

1 lb Carrots, tops removed & set aside, roots peeled & roughly chopped
1 lb Russet Potatoes, peeled
1 Onion, diced

2 Tbsp freshly squeezed lemon juice
Salt & freshly ground Pepper to taste
1/4 cup + 2 Tbsp Olive Oil
1 qt Chicken or Vegetable Stock (see Blonde Chicken Stock recipe from Winter 2017 Issue)

DIRECTIONS:

Puree 1/2 cup of the carrot tops & the lemon juice, 1/4 cup of the olive oil, & a pinch of salt & pepper in a small food processor, blender, or with an immersion blender. Set aside.

Saute the onion in a medium-size saucepan over medium heat in the remaining 2 Tbsp olive oil until translucent, 3-5 minutes. Add the carrot roots, potatoes, & stock, then bring to a boil. Lower the heat & simmer 20-25 minutes, or until extremely tender. Puree the soup in a blender or with an immersion blender, being careful not to splash yourself with the hot liquid. Season to taste.

Divide the soup among four bowls & drizzle a swirl of the carrot greens mixture on top. Serve immediately.

The soup & greens drizzle keep, cooled, covered & refrigerated for 2-3 days, or frozen for up to 3 months.

CREDIT: Eat it Up! by Sherri Brooks Vinton, Da Capo Lifelong Books 2016

For those of you dedicated to the old school card file recipe box, here's the recipe in a 3"x5" format to print

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FOOD STORAGE TIPS FROM SAVETHEFOOD.COM

BRUSSELS SPROUTS

REFRIGERATE IT: Yes **AT FRESHEST:** 10 days

OPTIMAL STORAGE: Do not wash until ready to use. Sprouts on the stalk last longer - wrap the stalk bottom with a moist paper towel followed by plastic wrap & keep in the fridge, or a cold place. Store loose Sprouts in a breathable bag in the high-humidity fridge drawer.

FREEZING: Wash, trim any yellowing outer leaves, blanch, immerse in ice water, drain until dry, & pack in an airtight container.

USE IT UP/REVIVAL: Peel away yellowing outer layers; often there is still a significant sprout inside. Brussels sprout stalks tend to be too tough & woody to eat but can still be used in soup stock.

CARROTS

REFRIGERATE IT: Yes **AT FRESHEST:** Carrots, 2 weeks, a few months in a root cellar environment; carrot tops, 2 days

OPTIMAL STORAGE: Do not wash until ready to use. Store in a breathable bag in the high-humidity drawer or submerged in water on a fridge shelf. If present, separate green leafy tops, leaving 1 in/2.5 cm on the roots, (otherwise, the tops will draw moisture away from the roots). Tops can be stored in a breathable bag in the high-humidity drawer & used like fresh herbs to add color & flavor to dishes.

FREEZING: Remove tops, wash, blanch, cool, chop or purée, & pack into an airtight container. Raw carrots can also be shredded & frozen in zip-top freezer bags & used for baking.

USE IT UP/REVIVAL: Carrots do not need to be peeled, just washed carefully; however, peeling does remove some bitterness.

Bruised, browning, or damaged carrots can be salvaged by peeling away the external layers & removing the damaged pieces with a paring knife.

The whitish coloring that appears on cut carrots is simply dehydration. Revive limp carrots by placing them in an ice bath in the refrigerator for 1 hour. Limp carrots can be used in soups, stews & stocks. Carrot tops are great additions to soups & stews, or even floral arrangements.

CAULIFLOWER

REFRIGERATE IT: Yes **AT FRESHEST:** 5 to 7 days

OPTIMAL STORAGE: Do not wash until ready to use. Store in original wrapping or breathable bag in the high-humidity drawer of the fridge.

FREEZING: Wash, separate into smaller florets, blanch, immerse in ice water, drain until dry, lay florets out separately on a baking sheet to freeze, then transfer to an airtight container.

USE IT UP/REVIVAL: A yellowish coloring on cauliflower is from exposure to sun while growing & does not affect edibility. Brown spots that appear are normal & harmless when small & light brown in color; if the appearance is not to your liking, use it to make dips & soups. Use green leaves at the base of cauliflower just as you would cabbage, or throw into whatever you're making with the cauliflower.

To download the entire Food Storage Guide, go to www.savethefood.com/food-storage

QUICK TRICKS

Reducing the Size of Recipes

Alice Henneman, MS, RDN, Extension Educator

Ever have a missing ingredient ruin a recipe or require an extra trip to the store? Try these food substitutes - it may differ slightly, but will still be acceptable in terms of flavor, texture & appearance.

Product: 1 tsp Allspice **Substitute:** 1/2 tsp Cinnamon + 1/2 tsp Ground Cloves

Product: 1 tsp Apple Pie Spice **Substitute:** 1/2 tsp Cinnamon + 1/4 tsp Nutmeg + 1/8 tsp Cardamom

Product: 1 tsp Double Acting Baking Powder **Substitute:** 1/4 tsp Baking Soda + 5/8 tsp Cream of Tartar

Product: 1 tsp Baking Soda **Substitute:** There is no substitute for Baking Soda

Product: 1 Cup Butter **Substitute:** 1 Cup Margarine, or Vegetable Shortening for baking. An equal amount of oil can also be substituted for a similar portion of Melted Butter if the recipe specifies Melted Butter

Product: 1 Cup Buttermilk **Substitute:** 1 Tbsp lemon juice or vinegar + enough milk to make 1 Cup (allow to stand 5 minutes)

For more ideas on how to makeover your leftovers, go to: food.unl.edu/cook-it-quick-documents/makeover-your-leftovers.pdf

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