



# ReFresh Nebraska

Stop the Rot

Summer 2019

## A Potential Game Changer

The Winter 2018 issue of ReFresh Nebraska focused on composting as a landfill diversion solution for post-consumer food waste. According to ReFED's A Roadmap To Reduce U.S. Food Waste (Roadmap), "in almost any scenario to reduce food waste nationwide by 50 percent, recycling represents a majority of the volume," and composting will factor significantly. The other major landfill alternative, anaerobic digestion, will also play a role, and may in fact end up having the greater impact.

While composting has grown to include a variety of complex processes, most folks have a basic understanding of how it works - if only in the backyard. With no comparable application in our daily lives, anaerobic digestion remains a mystery to many. As the term suggests, the process occurs in the absence of oxygen, using microorganisms to digest or break down organic material. A harmful greenhouse gas in the atmosphere, the methane produced by the process, actually becomes a productive by-product, as it is captured for reuse as fuel.

Scalable applications abound, including for use in dairies and feed lots. Manure is fed into the digestion tank, where it's kept at a temperature that promotes the growth of bacteria, which in turn produce methane. The resulting solids can be used in bedding while the liquid is applied to crops as a fertilizer. The captured methane is then used to power the operation, and any excess is sold back to the power company. Far

more than just a secondary benefit, interested parties will note that the odor is significantly reduced as well.

Not a sector to be left behind, manufacturers have also developed a variety of anaerobic applications. In fact, one innovative company has utilized the process to make lactic acid, which in turn become the building blocks for compostable bioplastics. Others are researching the production of monomers that aid production of high quality synthetic rubber without petroleum-based feedstock. As a matter of fact, both processes are occurring right here in Nebraska!

On a municipal scale, numerous communities, including Lincoln and Omaha, have employed anaerobic digesters for use at Wastewater Resource Recovery Facilities (WRRFs) for decades. Solids collected during the clarifying process, are pumped into large tanks where microorganisms break down and stabilize them for use in agricultural land applications. The methane produced is not only used to power the WRRF, but can also be used for a host of other potential applications as well. For instance, the addition of a digester gas upgrading system enables the facility to convert methane into renewable natural gas which can then be pumped into a pipeline, or used to power vehicles that run on compressed natural gas (CNG), like Lincoln's fleet of CNG buses.

Feedlots currently tend to be isolated operations, and the production of biopolymers is a highly refined

process, but the day may come when such materials can be integrated to WRRFs as well. Which begs the question - what about food waste? EPA lists the Theresa Street facility in Lincoln as accepting it, but inquiries regarding the form and processes have not been answered. That said, new technologies have been developed for the processing of food waste at places like grocery stores, restaurants and cafeterias.

On-site aerobic digesters utilize microorganisms and warm water in the presence of oxygen to break food down quickly. The resulting liquid is then easily discharged into the sewage system where it is carried to the local WRRF for further processing. With solutions for a variety of business sizes, digesters can process anywhere from 250 to 2,400 lbs of food waste per day. Depending on the types of food introduced, up to 150 gal of water may be required to process it all, but on the upside, the carbon dioxide and other environmental costs associated with over-the-road hauling are completely eliminated.

While long term research is currently being conducted on the introduction of aerobic microorganisms to an anaerobic atmosphere, early indications are that they at least seem to clean the pipes on their way to the facility. Whether or not these various systems are able to be integrated into a single network has yet to be seen, but the potential of each, makes the possibility an exciting game changer.

## EPA's Sustainable Management of Food Basics



### What is Sustainable Management of Food?

Sustainable Management of Food is a systematic approach that seeks to reduce wasted food and its impact over the entire life cycle, starting with the use of natural resources, manufacturing, sales, and consumption and ending with decisions on recovery or final disposal. EPA promotes innovation and (the) efficient management of food as a resource. Through the sustainable management of food, we can help businesses and consumers save money, provide a bridge for those who don't have enough to eat, and conserve resources for future generations. Building on the concept of "Reduce, Reuse, Recycle," this approach shifts the view on environmental protection and recognizes the impact of the food we waste.

### What is Wasted Food and Where Does it Come From?

The term "wasted food" describes food that was not used for its intended purpose and is managed in a variety of ways, such as donations to feed people, creation of animal feed, composting, anaerobic digestion, or sending to landfills or combustion facilities. Examples include unsold food from retail; plate waste, uneaten prepared food, or kitchen trimmings from restaurants, cafeterias, and households; or by-products from processing facilities. EPA uses the overarching term "wasted food" instead of "food waste" because it conveys that a valuable resource is being wasted, whereas "food waste" implies that the food no longer has value and needs to be managed as waste.

### Why is Sustainable Management Important?

Wasted food is a growing problem and an untapped opportunity. In 2015 alone, more than 39 million tons of food waste was generated, with only 5.3 percent diverted from landfills and incinerators for composting. EPA estimates that more food reaches landfills and incinerators than any other single material in our everyday trash, constituting 22 percent of municipal solid waste. Additionally, the U.S. Department of Agriculture (USDA) estimates that in 2010, 31 percent of the 430 billion pounds of food produced was not available for human consumption at the retail and consumer levels. The Food and Agriculture Organization of the United Nations (FAO) estimated in 2011 that approximately one-third of all food produced for human consumption worldwide is lost or wasted. Taking simple steps can make a difference in addressing this issue. Reducing wasted food is a triple win; it's good for the economy, for communities, and for the environment.

### Saving Money

When we waste food, we're not just creating a problem, we're also missing an opportunity to save businesses and consumers money:

- **Pay Less for Trash Pickup** - Organizations might pay less for trash pickup by keeping wasted food out of the garbage. Some haulers lower fees if wasted food is separated from the trash and sent to a compost facility instead of the landfill.

- **Receive Tax Benefits by Donating** - If you donate healthy, safe, and edible food to hungry people, your organization can claim tax benefits. The Bill Emerson Good Samaritan Act protects food donors from legal liability.
- **Waste Less and Spend Less** - If you can find ways to prevent waste in the first place, you can spend less by buying only the food you will use. Preventing wasted food can also reduce energy and labor costs associated with throwing away good food.

### Helping People

Preventing wasted food and recovering wholesome, nutritious food can make a difference in your community:

- **Feed People, Not Landfills** - Instead of landfills, we should be feeding people in our communities. You can donate a variety of foods to many different types of organizations. Contact Feeding America or your local food rescue organization for information about where you can donate and what types of food they are able to accept.
- **Feed Children** - In 2012, the U.S. Department of Agriculture National School Lunch Program provided nutritionally balanced, low-cost or free lunches to more than 31 million children each school day. By redirecting food that would otherwise be wasted, we can help feed our country's children.
- **Create Job Opportunities** - Recovering and recycling wasted food through donation, salvaging, processing, industrial reuse, and composting strengthens infrastructure and creates jobs. Food recycling in these sectors employs more than 36,000 people, supporting local economies and promoting innovation.
- **Feed the World** - According to the Food and Agriculture Organization of the United Nations, from 2012 to 2014 there were about 805 million hungry people on earth. They predict that by eliminating food loss and wasted food we would have enough food to feed all the chronically undernourished. They also expect that we wouldn't have to increase food production or put additional pressure on our natural resources to do so.

### Conserving Resources

Reducing wasted food does great things for the environment:

- **Reduce Methane from Landfills** - When food goes to the landfill, it's similar to tying food in a plastic bag. The nutrients in the food never return to the soil. The wasted food rots and produces methane gas.
- **Save Resources** - Wasted food wastes the water, gasoline, energy, labor, pesticides, land, and fertilizers used to make the food. When we throw food in the trash, we're throwing away much more than food.
- **Return Nutrients to the Soil** - If you can't prevent, reduce or donate wasted food, you can compost. By sending food scraps to a composting facility or composting at home, you're helping make healthy soils. Adding compost to gardens, highway construction sites, and poor soils makes great things happen. Properly composted organics (wasted food and yard waste) improve soil health and structure, improve water retention, support more native plants, and reduce the need for fertilizers and pesticides.



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!

## UGLY VEGETABLE PASTA

Instead of tossing your ugly veggies, make them the stars of the show! Brown the veggies, cook some pasta, add some homemade spicy garlic oil and enjoy your work of art!

### SERVINGS:

4

### USES UP:

Veggies, Herbs & Cheese

### INGREDIENTS:

1/2 cup extra virgin olive oil, plus more for finishing  
 1 zucchini cut into 2" pieces  
 1/2-1 fresh chili thinly sliced (spiciness to taste)  
 8 oz short-cut pasta  
 1/2 cup coarsely grated ricotta salata (or pecorino, feta or parmesan)

1 small eggplant cut into 2" pieces  
 3 garlic cloves thinly sliced  
 1 pint cherry tomatoes, halved  
 1 handful tender herbs like basil, mint &/or parsley stems minced, leaves torn or whole  
 Zest of 1 lemon

### DIRECTIONS:

**Brown the vegetables:** Heat half the olive oil in a large skillet over medium heat. Add eggplant and zucchini and cook until soft and lightly browned (about 10 minutes). Season well with salt.

**Make the spicy garlic oil:** Add garlic, chilis and remaining oil, then cook until fragrant (2-3 minutes).

**Cook tomatoes:** Add tomatoes and cook until they start to release their liquid when pressed (about 5 minutes).

**Cook Pasta:** Meanwhile, cook pasta in boiling salted water 2 minutes less than instructed (about 7 minutes).

**Finish pasta:** Drain pasta, saving about 1/2 cup cooking water. Add pasta to skillet, adding pasta water a few table spoons at a time and tossing to coat. Garnish with herbs, cheese, lemon zest, and drizzle of olive oil.

CREDIT: Joel Gamoran, Sur La Table National Chef and Host of Scraps

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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SAVETHEFOOD.COM

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# FOOD STORAGE TIPS FROM SAVETHEFOOD.COM

## HONEY

**REFRIGERATE IT:** No

**AT FRESHEST:** A few years

**OPTIMAL STORAGE:** Store in a sealed container away from direct sunlight in a cool, dark, dry place (as cold as 50°F/10°C). Storing honey in the fridge accelerates crystallization.

**FREEZING:** Store in an airtight container.

**USE IT UP/REVIVAL:** Crystallized honey is still good! To re-liquify, take off the lid & place upright in a pan of warm water for 10 to 20 minutes, stirring occasionally. If a plastic container, it's best to place it in a glass container before heating in the water. If not possible, be sure that the water is only warm & not hot to avoid any negative effects from heating plastic.

## MAPLE SYRUP

**REFRIGERATE IT:** Yes, once open **AT FRESHEST:** Room temp, unopened, 2 years; refrigerator, open, 1 year; freezer, indefinitely.

**OPTIMAL STORAGE:** Airtight container in the fridge or freezer.

**FREEZING:** Pure maple syrup, should not actually freeze, making the freezer a great place to store it as it will keep indefinitely. Store in an airtight container. Mix in any condensation on the top before use, & place back in the freezer.

**USE IT UP/REVIVAL:** Maple syrup is graded according to color, sugar content, & flavor. Grade A is lighter & more delicately flavored & is typically poured directly onto foods, while Grades B & C are stronger in flavor & are used more for cooking & baking. Maple syrup adds a nice richness to everything from Asian stir-fries to salad dressing. Try it in place of other sweeteners.

## MAYONNAISE

**REFRIGERATE IT:** After opening **AT FRESHEST:** Commercial, unopened, 2 years; opened, 2 to 3 months

**OPTIMAL STORAGE:** Commercial mayonnaise uses pasteurized eggs & has a high acidity level, which means it's safe when stored at room temperature. However, quality & flavor are improved by keeping the jar in the fridge once opened.

**FREEZING:** Not recommended.

**USE IT UP/REVIVAL:** If the oil in mayonnaise has crystallized, stir gently & add a few drops of water, if necessary, to re-emulsify it.

## NUT BUTTERS

**REFRIGERATE IT:** Yes **AT FRESHEST:** Commercial, opened, 6 months; natural, opened, 3 months; unopened, 2 years

**OPTIMAL STORAGE:** Commercial butters can be kept in a cool, dry pantry but will last twice as long if kept in the fridge. Natural nut butters, once opened, should be stirred & then stored in the refrigerator in a sealed container.

**FREEZING:** Not recommended.

**USE IT UP/REVIVAL:** Over time, the oils in natural nut butters may separate into a layer at the top of the container. This is a natural process that does not affect the quality. Simply stir the oil back into the butter. Do not drain it off, as it will cause the butter to be overly dry. Commercial peanut butter may be edible for much longer than listed here, but the quality will not degrade. Spoiled nut butters will smell "off" & should not be consumed.

To download the entire Food Storage Guide, go to [www.savethefood.com/food-storage](http://www.savethefood.com/food-storage)

## QUICK TRICKS

Food tossed is money lost.

Refresh still edible foods, re-purpose leftovers & reuse or "recycle" them in new ways.

1. Test **baking powder** freshness by mixing 1 teaspoon with 1/3 cup hot water. If it foams vigorously it still has rising power. To test **baking soda**, place 1 1/2 teaspoons in a small bowl. Add 1 tablespoon vinegar. If it fizzes, then it will still help leaven food. If not, use as an odor catcher in the fridge.
2. Fix lumpy gravy by pouring through a sieve or strainer
3. Coat measuring cups with nonstick cook spray before measuring sticky ingredients like honey & syrup.
4. Add 1 part vinegar, 3 parts oil, along with herbs & spices to a near-empty mayo, jam or jelly jar. Shake & use as quick salad dressing.
5. Fix lumpy frosting by adding something lumpy to it, like chopped nuts or coconut.

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

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NEBRASKA EXTENSION



# 45%

## FRUIT & VEGETABLES FOOD LOSSES

Along with roots and tubers, fruit & vegetables have the highest wastage rates of any food products; almost half of all the fruit and vegetables produced are wasted.



3.7 trillion apples



Food and Agriculture Organization  
of the United Nations



## Keep Nebraska Beautiful

KEEP AMERICA BEAUTIFUL AFFILIATE

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