

MONOCROPPING

There's no such thing as a free lunch.

Adam Weiner, JD, CFSE

Stephanie Weiner, BA

OVERVIEW

This article will take a broad look at the issue of monocropping, including how monocropping relates to commercial food service and will briefly examine the economic term of opportunity cost.

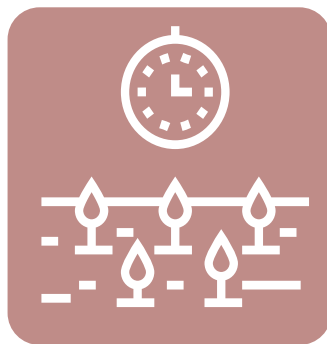
First, an introduction to the two key terms of this article. In a broad sense, monocropping is the large-scale planting of a single crop every year on the same land without crop rotation. Monocropping has been around for quite some time. Many feel that it first got its hold in the Caribbean in the 17th century with the planting of sugar.

Opportunity cost is a term that economists use to show that the cost of an item goes beyond dollars and cents. Essentially, opportunity cost means the cost of doing one thing is the lost chance to do something else. If you go to the baseball game on Saturday from 4 p.m. to 8 p.m., you can't go to the neighbor's barbecue that goes from 5:00 p.m. to 7:00 p.m.

MONOCROPPING

Corn is an example of a monocrop and is the largest agricultural crop in the United States. It is an interesting commodity because it is used for a very wide range of different purposes, including, but certainly not limited to, the following:

Food for people in various forms, such as corn meal, corn tortillas, corn on the cob, corn chowder, corn bread, etc.



Food for animals, including cows, sheep, horses, goats, ducks and turkeys

- Vegetable oil
- Fuel for powering everything from farm equipment to your household car
- Medications and pharmaceutical products
- Cosmetics
- Soaps and cleaning products
- High fructose, a sugar used in the foodservice industry

For culinary purposes, the two key issues of monocropping and corn are economic and environmental concerns.

ECONOMIC CONCERNS

Let's start with economics. In economics, one of the first lessons taught is that there are opportunity costs in almost every decision. It is often cutely referred to as: "There is no such thing as a free lunch." What this means is that if you decide to do one thing, there will automatically be other things you can't do. Suppose someone you don't like at work insists that you go out to lunch with them and they will pay. The opportunity cost of having someone buy you lunch is that you can't have lunch with someone else or do something else. And you are with a person you don't like. Even though you are not paying anything out of pocket, there is still a cost to go to lunch.

How does this apply to corn? Corn can be used to produce an arguably cleaner fuel for vehicles:

ethanol. If corn is used to produce ethanol, the same corn can't be used to feed animals. This means that there will be less animals coming to market as food, which will drive the price up. Alternatively, producers will have to use other more expensive feed, which will also drive the price up.

If corn is used for ethanol, the same corn can't be eaten by people. For many people around the world, this means that they have lost a substantial portion of their food intake. The opportunity cost of using corn as a fuel is that there will be less food for people in the United States and around the world to eat. The converse is true - when you cook with corn, or products that contain or were fed corn, that same corn couldn't be used for other purposes such as making ethanol or soap.

ENVIRONMENTAL CONCERNS

The other issue is the environmental impact of monocropping. The American Dust Bowl tragedy, where severe dust storms damaged the agriculture in the 1930s, was in part caused by monocropping. But, nearly 100 years later, we are doing the same thing!

Monocropping is more profitable for large-scale producers in the short run. However, there are tradeoffs. Some of the environmental issues of monocropping include:

- Decreased soil quality, which leads to an increase in fertilizer use. Overuse of fertilizer has been linked to massive pollution in lakes/rivers and has resulted in ocean dead zones, which refers to a reduced level of oxygen in the water with marine life dying or leaving the area. Since all the rivers flow out to the sea, the fertilizers used inland can eventually find their way to the oceans.
- Turning soil from a carbon absorber into a carbon producer. Soil is remarkably good at absorbing carbon dioxide, a greenhouse gas which contributes to global climate change. However, this benefit is reversed by monocropping, increasing greenhouse gasses and contributing to global climate change.
- Increased vulnerability to pests/diseases wiping out all fields. An example from history would be the Great Irish Potato Famine when Ireland suffered a period of starvation due to a disease which affected the potato crop. As a result, the process of monocropping includes an increased use of pesticides and herbicides which can negatively impact food chains.

Corn isn't the only monocrop in the United States. Other monocrop commodities include, but are not limited to, wheat and soybeans. And although not technically monocropping since they are not crops, chickens/eggs, cows, turkeys, pigs, etc., that are raised for food production come from very few areas across the country. Like monocropping, the same land used to raise chickens/eggs, cows, etc. is used for raising the same animal year in and year out resulting in similar issues and concerns to monocropping previously addressed.



A related issue is that most of the production of specific products in the United States is limited to a small area of the country. For example:

- Approximately 33% of the world's tomatoes, and approximately 95% of the tomatoes consumed in the United States, come from just a few counties in central California.
- Approximately 80% of the world's almonds come from (again) a few counties in California. Basically, all of the almonds used in the United States, including in food service, come from these same plants.
- Approximately 80% of the United States lobster catch comes from Maine.
- Approximately 90% of the oranges used for juice are grown in Florida.

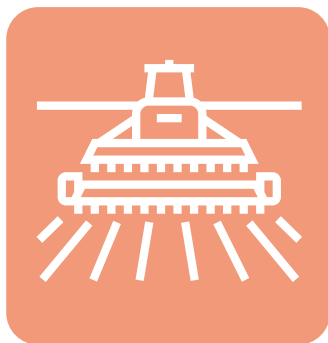
WHAT DOES THIS MEAN TO ME?

These, and other examples, raise several issues that need to be considered by the food service industry:

- How does the limited areas used to raise many raw products affect a food service establishment's ability to serve locally raised food.
- What happens to your food service business if there is a disruption to the supply of a key product. For example, if you rely on tomatoes and tomato products, what happens if there is a disruption to the crop in California?

- What if climate change issues, such as temperature change, droughts, flooding, etc., interrupt the supply of raw products to your establishment from key producing areas?
- What happens to the quality of the raw food products you use when it is held in storage and/or shipped across several (or many states) to get to you?
- What is the environmental impact, not only of monocropping crops, but of having them shipped from their production location to you. And, by the way, there might be a lot of shipping back and forth across the country to get to your establishment.

The raw product might be grown in one area and processed in another. Cattle might be raised in one area, sent to a feedlot in another, transported to a slaughterhouse, etc. One of the ironic, although now historical, examples of this was C and H sugar. The sugar cane was grown in



Hawaii and then shipped to the San Francisco Bay area where it was processed (C for California, H for Hawaii). Since Hawaii did not process any sugar, the sugar used in Hawaii in restaurants, coffee houses, hotels, etc., was grown in Hawaii, shipped to California, and then shipped back to Hawaii. The sugar went nearly well over 4,000 miles to get into the restaurant's back door!

MAKE A PLAN

In the recent past, even before Covid, there were major nationwide shortages in specific products for extended periods of time. This included lettuce, tomatoes and even beef (because of Mad Cow issues). Even after supply line issues were resolved after Covid, there were, and still are, chicken and egg shortages because of the Avian Flu.

Your establishment cannot really have a direct impact on these shortages. However, you should realize that because of monocropping, it is likely

that at some point there will be other major supply line disruptions for specific product(s).

One take away from this article is that it is time to start planning now. Look at your operation and menu, then determine what you would do if there were severe shortages and/or price increases of select products that are key to your operation. Chefs know about planning and preparation, they do it daily. But now it is time for managers, owners and chefs to plan and prepare for future disruptions.

The bottom line is that the decisions you make on what to cook, and the ingredients used to prepare them, have an impact on the current and future environment of your community, the United States and the world. Your decisions on items as basic as what to put on a pizza, serve in a sandwich, or bake for your guests' desserts have a short- and long-term impact on you, your business, the people in your communities, the people in the United States, and quite likely people around the world.



**American Culinary Federation
Education Foundation**