

We make nutritious, delicious.

It is time for a radical change.



“If you don’t eat your food as a medicine, you will have to eat medicine as food in the future.”

This quote might sound slightly controversial, but is spot-on. The idea that **food can serve as medicine** is not a new one, but in recent years, the concept has gained renewed attention as research continues to uncover the many ways in which the nutrients found in fresh produce can improve health outcomes. In particular, the higher nutritional value of produce grown in indoor farms has been shown to contribute to this idea. In this white paper, we will explore the ways in which fresh food can work as a medicine, why consumers do not clearly understand the concept of food as medicine, and how Plantlab can enhance the nutritional value of the produce grown.

Fresh Food as Medicine

Diet plays a crucial role in overall health. A study on the health effects of dietary risks in 195 countries found that an unhealthy diet is the top contributor to death. In fact, poor dietary choices contribute to one in every five deaths worldwide and are linked to conditions such as cardiovascular disease, type 2 diabetes, and certain forms of cancer. Additionally, food can also affect various health conditions, including intolerance and allergies, nutritional deficiencies, and digestive health. Not surprisingly, food can also have the opposite effect. Food can be the greatest form of medicine, when used correctly.¹

Fresh foods, such as vegetables, are rich in a wide variety of essential nutrients, including vitamins, minerals, and antioxidants. These nutrients have been shown to have a wide range of health benefits, including reducing the risk of chronic diseases such as heart disease, diabetes, and cancer.² For example, fruits and vegetables that are high in

vitamin C and other antioxidants have been shown to reduce the risk of cancer and heart disease by helping to protect cells from damage caused by free radicals.³ Similarly, fruits and vegetables that are high in potassium and other minerals have been shown to help lower blood pressure, which can reduce the risk of heart disease and stroke.⁴

In addition to these specific health benefits, fresh foods are also important for maintaining overall health and wellness. For example, they are a good source of dietary fiber, which is essential for maintaining a healthy digestive system and preventing constipation. They are also low in calories and high in water content, which can help with weight management.⁵

Consumers and healthy food

In today's economy, inflation is a top concern for consumers, making it difficult for them to look beyond the price when making purchases. However, a study by Deloitte shows fresh food producers and retailers may find an advantage in connecting with consumers by highlighting the health and wellness benefits of their products. Despite the focus on price, their research shows that there is a consistent demand for health and wellness among consumers. According to the study, 84% of consumers consider health and wellness when purchasing fresh food. Additionally, three out of four consumers are actively seeking more personalized nutrition, an increase of 13 percentage points year on year. This presents an opportunity for fresh food producers and grocers to differentiate themselves by emphasizing the health benefits of their products, rather than just their price.



Furthermore, the study found that 55% of consumers are willing to pay a premium for foods that contribute to their health and wellness. This indicates that there is a significant market for higher-priced, healthy food options. By emphasizing the health benefits of their products, fresh food producers and retailers can differentiate themselves from competitors and appeal to a significant market.

However, 62% of consumers report confusion and conflicting information about the healthfulness of certain fresh foods. Forty percent of consumers are uncertain about which fresh foods have medicinal properties. Over half of consumers believe that having information about the origin, safety, and nutritional properties of food is essential in order to use it as medicine. So this is where a potential profit could be made by the industry.⁶

Indoor Farming and Nutritional Value

As you might be aware from visiting our website, indoor farming is a method of growing fresh produce in controlled environments, using techniques such as hydroponics and LED lighting. This method has been shown to enhance the nutritional value of the produce grown.

One of the main benefits of indoor farming is that it allows for year-round growing, regardless of the

climate or weather conditions outside. This means that produce can be grown with ideal temperatures, humidity, light, and other conditions, leading to consistent quality 365 days a year without the need to use chemicals and pesticides. This implies that the produce grown in our indoor vertical farms is 100% clean and often has higher levels of vitamins, minerals, and other beneficial compounds compared to those grown using traditional farming methods.



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as the produce is grown close to the consumer.
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Indoor farming allows for a short supply chain, as the produce is grown close to the consumer. This results in fresher produce with a significantly longer shelf life, as the produce does not have to travel long distances to reach your plate.

How does that affect consumer behavior when deciding whether or not to purchase and consume fresh produce? A study led by EIT Food and conducted by Reading University compared the shelf life of a lettuce mix, stored in a sealed bag, produced by Plantlab with one grown in traditional farming. According to the study, the Plantlab mix remained appealing to consumers even after 21 days of being stored in a sealed bag. They were willing to purchase it from supermarkets, consume it at home, and even consider it as a potential option in restaurants. These results are particularly impressive when compared to those of the regular mix, which consumers were no longer willing to buy or consume after only 12 days of shelf life.⁷

Indoor Mix

Days after packing	Would you eat this in a restaurant?	Would you buy this in a supermarket?	Would you eat this at home?
0		Yes	Yes
3		Yes	Yes
5		Yes	Yes
7		Yes	Yes
10	Maybe	Yes	Yes
12	Maybe	Yes	Yes
14	Yes	Yes	Yes
17	Yes	Yes	Yes
21	Maybe	Yes	Yes

Regular Mix

Days after packing	Would you eat this in a restaurant?	Would you buy this in a supermarket?	Would you eat this at home?
0	Yes	Yes	Yes
3	Yes	Yes	Yes
6	Maybe	Yes	Yes
10	Maybe	Yes	Yes
12	No	No	No
14	No	No	No

➡ After 21 days in a closed bag, people would still buy the Plantlab mix in a supermarket, eat it at home and might it in a restaurant

Overall, the short supply chain and controlled growing conditions of indoor farming contribute to higher nutritional values in the produce, making it a more attractive option for consumers looking for fresh, healthy options. It is key to use a clear, simple way of communicating the nutritional value of our produce to the end consumer. Plantlab utilizes the higher nutritional value through our consumer brand **Boost!**.

Conclusion

The idea that fresh food can work as medicine is supported by a growing body of research, and the higher nutritional value and longer shelf life of produce grown using indoor farming can contribute to this idea. Indoor farming allows for year-round growing, precision farming techniques, and reduced use of pesticides and other chemicals, which can all enhance the nutritional value of the produce. As such, indoor farming can play an important role in promoting health and wellness through the consumption of nutritious fresh produce. Isn't that delicious?

Appendix

1. Ashkan Afshin et al., *"Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the global burden of disease study 2017,"* The Lancet 393, no. 10184 (2019): pp. 1958–1972.
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4. Dietary Guidelines Advisory Committee. (2015). *"Scientific Report of the 2015 Dietary Guidelines Advisory Committee. US Department of Agriculture, Agricultural Research Service."*
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