

## Benefits of Fermenting Fruits and Vegetables

### *What is a fermented food?*

**Fermented foods and beverages** are made through desired microbial growth and enzymatic conversions of food components.



*Note: Photo of sauerkraut courtesy of Erin DiCaprio; photo of Sicilian style olives courtesy of Hanna Louvau.*

### *What is the difference between probiotics and the microbes in fermented foods?*

**Probiotics** are live microorganisms that when consumed in specific amounts confer a health benefit on the host. Probiotics are defined at the sub-species, strain level and require evidence from human studies.

Fermented fruits and vegetables may contain live microorganisms at the time they are consumed but these microorganisms are undefined at the strain level and should not be called probiotics.

**Improved preservation.** Fermented fruits and vegetables can be kept for months in the refrigerator before eating.

**Taste.** Fermented foods possess a unique flavor profile, due to the balance of sugar, bacterial produced acid, and volatile flavor compounds.

**Safety.** Properly fermented fruits and vegetables will create an environment within the food that is less favorable for foodborne pathogens to survive and proliferate. This includes an increase in acidity level to achieve a pH below 4.6.

**Nutrition.** Prolonging the shelf life of perishable fruits and vegetables through fermentation results in more retention of naturally occurring vitamins in the final product compared to other processing methods, such as heat treatment. Moreover, fermentation can result in the generation of vitamins and other bioactive compounds not found in the fresh fruit or vegetable.

**Health benefits.** Fermenting fruits and vegetables results in the modification and synthesis of nutrients associated with good health. During fermentation, the microorganisms responsible for fermentation may remove unwanted compounds (e.g. sugars that cause flatulence), modify compounds to make them more bioavailable (e.g. phenolic acids), and synthesize new products (e.g. B vitamins). Consumption of fermented foods can support immune responses and sustained microbial diversity of the gut. This can reduce inflammation of the gut and provide resilience against some illnesses.

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