

Raw Lacto Fermented Vegetables – Now on a Commercial Scale!



Vegetable processors can now successfully produce a profitable range of **raw** lacto fermented vegetables, condiments and juices. These products can be marketed in many different ways:

- As a health food, full of nutritional value and rich in “friendly bacteria”
- As a traditional food, “just like Grandma used to make”
- To the catering industry, including hotels, restaurants and institutions
- As a component in sandwiches, salads, and ready meals
- For regular retail in supermarkets, in the prestige chilled section
- To niche markets, such as vegetarians, weight watchers, raw food enthusiasts, and many more

Our technology and methods are based on years of scientific research and practical experience. We are currently working with clients in North America, Europe and Japan, whose products include sauerkraut, carrots, beets, red cabbage and other vegetables.

The Challenge - Controlling the Process

Traditional lacto fermentation is uncontrolled and spontaneous. The results are inconsistent and can be unstable. Many factors can affect the final product, for example:

- Vegetable freshness and quality
- Fermentation time
- Temperature
- Salt quality and content
- Secondary fermentation

Vinegar, pasteurisation or chemical preservatives are often used commercially to produce uniform, shelf-stable products. These methods affect the quality of the products by:

- Changing their authentic flavour, colour and texture
- Reducing their nutritional value
- Killing the beneficial lactic-acid-producing bacteria

The Solution

Large-scale production of traditional lacto fermented vegetables requires a scientific approach and precisely controlled production. Using our unique starters and methods, you can:

- Ensure consistent, stable production, without pasteurisation, vinegar or preservatives
- Preserve the texture, flavour and colour of traditionally-fermented vegetables
- Offer consumers a prestige range of products that are full of health benefits
- Increase profitability and reduce waste

Product Comparison

Raw lacto fermented vegetables are superior in many ways to their closest rival products. Here is a comparison with fresh cut vegetables (grated, sliced, etc) and regular pickles:

Product feature	Fresh cut vegetables	Regular pickles	Raw lacto fermented vegetables
Storage	Chilled	Ambient	Chilled
Shelf life	Short	Long	Long
High value by-products	No	No	Yes (fermented juices)
Additives	No	Sometimes	No
Pasteurised/sterilised	No	Yes	No
Salt content	None	High	Medium
Friendly bacteria	No	No	Yes
Image	Healthy	Processed	Very healthy

Practical Experience Backed by Science

Vitality Foods Ltd is the marketing partner of Caldwell Bio Fermentation Canada Inc (CBFC).

CBFC, in association with Agriculture and Agri-Food Canada ([AAFC](#)), are the first to apply sustained microbiological research and practical production know-how to the traditional practice of lacto fermentation. In 2007, the team was awarded the [FPTT Excellence in Technology Transfer Award](#) for the successful commercialisation of this process.

Together, we offer an unrivalled combination of expertise and starter technology that can help you maximise your success with lacto fermented vegetables.

Our Starters

Our mixed-strain bacterial starters were developed specifically for lacto fermented vegetables. They are tested and maintained by highly qualified microbiologists, whose ongoing research and investment ensures our continued leadership in this field. The following table illustrates the advantages of using our starters and precise production methods for producing **raw** lacto fermented vegetables:

Attribute	Without starter	With our mixed-strain starters
Fermentation type	Spontaneous	Controlled
Fermentation time (optimal)	21-30 days	7 days
Maturation time (optimal)	3-6 months	2 months
Acidification rate	Variable, slow (> 3 days to pH 4.0)	Fast (< 1 day to pH 4.0)
Final pH	3.2 - 3.6	3.2 - 3.6
Salt level	2.0 - 2.5%	1.8%
Stability (chilled)	Variable	1 year shelf life
Final yeast levels	Variable	Below detectable limit
Secondary fermentation	Frequent	None
Lactic acid/acetic acid ratio and concentrations	Variable	Fixed
Taste, colour and texture	Variable	Consistent
Vitamin C levels	Reduced by 50%	100% retained
Safety	Need heat (pasteurisation) or chemicals (Sorbate/Benzoate)	Safe without heat or chemicals

For more information, please email us at info@vitalityfoods-eu.com, or visit our website: www.vitalityfoods-eu.com.