

CELLULAR FRACTION-LINE TECHNOLOGY

Sustaining Nature's Design

The advantage of Cellular Fraction-Line Technology (CFL) in terms of the quality, efficacy and experiential nature of the product lies in the fact that this evolutionary process sustains the cellular and molecular structure as well as the extracellular matrix of the plant material as closely as possible to the plant as it grows in nature. The healing message is carried by this complex synergistic structure with thousands of co-factors which we make every effort to sustain.

- Not any one or several isolated (extracted) ingredients alone carries the full text of the healing message
- Nature's complex design should be disturbed as little as possible

How does CFL accomplish this?

1. Dehydration (removal of water in its liquid state using heat) causes the water to evaporate at a constant rate while the quantity of water decreases.

This results in a surface tension that affects anything in contact with the water. Structures as fragile as cell walls can be pulled apart by this tension.

In contrast, CFL is a premium freeze dry process that removes the water in a gas state (water vapor) by sublimation and no such surface tension is created.

This helps to maintain cellular integrity.

2. Uneven drying such as in the case of dehydration or conventional freeze drying, involves a scenario in which all the water in the product is forced to follow an escape route through a relatively small exposed surface area which creates pressure.

This can damage the cellular structure. In contrast, the CFL process dramatically increases the exposed surface area as the product flies around in a vortex rather than sitting motionless on trays.

This exposes the entire surface area to the drying process at the same time, resulting in “even” drying that avoids the pressure that can damage the structure, shape and biological makeup of the plant material.

3. . In the Cellular Fraction-Line process, the motion of the frozen particles and the sublimation of the ice structure that holds the particles together causes the particles to break up into a fine powder naturally along cellular fraction-lines (along the paths of least resistance).

This occurs inside the product chamber without mechanical grinding. In the case of dehydrated or conventionally freeze dried plant material mechanical grinding is needed to create a fine powder.

Avoiding the brutal mechanical grinding process prevents damage and hemorrhaging of the cellular structure. In addition, friction resulting from the mechanical grinding process may generate enough heat to damage thermosensitive vital ingredients.

OUR GOAL:

The goal of CFL is to reduce water content to the point where the plant material is no longer subject to degradation while sustaining the biological activity of the fresh plant with all its complexity and natural synergy.

Thai Freeze Dry's mission is to revive your relationship with nature's complete foods. This is part of a wave of transformation challenging us to change our view of reality and re-evaluate our place in nature and the relationship between our physiology and our consciousness. (see "Wave of Transformation")

Please join our tribe. Welcome to all. Let's keep it real and let's get healthy!

www.thaifreezedry.com



THAI FREEZE DRY
COMPANY LIMITED

CONVENTIONAL FREEZE DRYING:

This holds some promise but is deficient in certain aspects.

a. **Moisture level:** conventional freeze drying produces a result of approximately 5-6% moisture content. This is far too high. By the time the product reaches the consumer it has lost viability.

b. **Exposure to heat:** It is a trade secret that in most cases freeze drying results in a moisture content in the area of 10% before the heat is increased in the very last phase of the process to remove the “residual moisture.”

c. **Mechanical grinding:** After the product is dried it must be mechanically ground to a fine powder and in this grinding process it is easy to reach temperatures which damage the product. The mechanical grinding also hemorrhages cellular integrity and the extracellular matrix and is extremely damaging to live bacteria.

CELLULAR FRACTION-LINE TECHNOLOGY :

a. Moisture level:

Due to the greatly increased surface area exposed to sublimation the product comes from the machine with often less than 0.5% moisture content. If the product is not hygroscopic it may gain only a minor increase in moisture during its processing sequence. This allows the product to be delivered without having been exposed to moisture.

b. Exposure to heat:

The product flying around in a vortex dries with no exposure to heat at any time in the process. The exposed surface area increases the rate of heat exchange allowing the product to dry with no exposure to heat

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c. Fractionalization:

The movement of the super frozen particles and sublimation of the ice structure that holds the particles together results in the product breaking down along natural cellular fraction lines thereby preserving the cellular structure and extracellular matrix. The product maintains its bioactivity. We avoid damaging the delicate cell structure of the probiotic organisms.

d. Easily absorbed:

The porous particle structure provides more surface area per unit of weight and is therefore more easily absorbed, digested, and metabolized.

Cellular Fraction-Line Technology is the best method known to sustain the vitality of the bacteria in a stable form. Once ingested the porous particle structure allows the probiotic bacteria to re-hydrate faster and more fully. A larger proportion of the bacteria will hydrate to become functional and begin to divide again as they did before being processed.

Cellular Fraction-Line Technology allows for multiple species and strains of bacteria to be combined in a single product without fear of competition.

Our process cannot increase the quality of the raw material you deliver to us. What we can do is deliver a stable dry powder that reflects the vitality of the probiotic bacteria at a level higher than any other process we have found.

Economic Considerations :

Fermented liquid products generally contain about 95% water. You are storing, shipping, and selling water. The costs involved in this are excessive and recent restrictions on shipping or carrying liquid products make this matter still more difficult. The water content will allow fermented products to continue to ferment resulting in an unstable product. The water provides the medium for probiotic bacteria to degrade.

Taste:

Many fermented products don't have a pleasant taste. This is a huge concern in regards to market acceptance and compliance. The freeze dried capsules effectively eliminate this consideration