

Freeze-dried Products: The Process and the Markets

Outline of Key Points for IIFET 2000 Presentation

Dr. Herb Aschkenasy, Oregon Freeze-Dry

- Preservation without preservatives
- Retention of original product characteristics, i.e. shape, flavor, color, nutrients, etc.
- End user neutral, i.e. can be organic, Kosher, Hallal, non-GMO, etc.
- Description of process by which these attributes can be achieved and the company that achieves them.
- Has been commercially applied to fish, clams, shrimp and surimi.

Demand For Food

- World population - 6 billion
- Increasing to 8 billion in 25-30 years
- A growing middle class
- Increasing median age
- Growth in special needs
e.g. Organic, Hallal, Kosher

Objectives

- Reduce Spoilage
 - About 1/3 of all food produced spoils
 - About 10-15% of landed food from the sea spoils
- Improve Distribution
 - Easier movement of higher value foods to where they can be consumed and paid for
- Longer Shelf Life
 - Under a variety of storage conditions

Preservation Methods

- Canning
- Freezing
- Drying
 - Air, Spray, Drum, Tunnel, Fluidized Bed, and others
- Freeze Drying

Unique Advantages

- Retention of shape - rapid rehydration
- Retention of flavor, color, nutrients
- Extraordinary shelf-life
- Light weight
- End User Neutral

Disadvantages

- Drying equipment is expensive
- Reliable source of electricity required

The Process

- Sublimes (evaporates) ice
- Product remains cold
- Can be applied to almost any food (and many non-food) items.
- We freeze-dry clams, shrimp and fish in commercial quantities.

The Company

- Headquarters building
- 3 plants in Albany, Oregon
- Operations in Denmark and England