



Fresh Defrost
Innovative Pre-Freezing technology

Business Profile



**A Pre-Freezing Technology
Company**

Business Profile

Confidential: 2013

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Fresh Defrost Ltd. - 2013

Food industry's BIGGEST breakthrough Since refrigerated boxcars!

What is Fresh Defrost™?

Fresh Defrost™ is an innovative method that yields frozen fruit and vegetables that taste, feel and look as though they are fresh produce, after defrosting. The technology is environment friendly and totally 'green', involving only physical processing of the produce, with absolutely no use of chemicals or radiation. The Fresh Defrost™ apparatus is easily incorporated into any existing processing line between initial preparation and quick freeze/bagging.

Fresh Defrost™ has successfully been 'tried and tested' on figs, cherries, strawberries, blueberries, pomegranate arils, mango, pineapple, melon, citrus fruit and vegetables such as asparagus, beetroot, peppers, mushrooms.



Thawed Arils after IQF freezing



Thawed Arils after Fresh Defrost™

Huge opportunity to be a competitive player in the multi-billion dollar frozen produce market, with Fresh Defrost™ technology incorporated into your existing food processing lines.

With Fresh Defrost™ everyone wins. Current trends show a 20% rise in healthy-eating food habits. Consumers are seeking fresh fruit and vegetables all year round. Now you can meet that consumer demand with superior frozen produce with fresh produce quality!

Fresh Defrost™ is a subsidiary of Juran Metal Works Ltd, a leading global company and provider of innovative products and processes primarily for the agriculture and food industries.

Fresh Defrost Ltd

23 Shmotkin Street

Rishon Lezion, 75363 Israel

Tel: +972 3 964 0377

Website: www.freshdefrost.com

KEY PERSONNEL

Ofer Juran, CEO

Owner of Juran Metal Works Ltd, with a BA Mechanical Engineering & MBA for Engineers, Haifa Technion Institute of Technology.

Avner Galili, VP Marketing & Business Development

General manager of Juran Metal Works Ltd, previous senior positions held in agriculture and hi-tech industry; Board of Directors, Israel Export Institute (1999-2003) & professional advisor, Genetic Engineering Consortium.

COMPANY OWNERSHIP

Juran Metal Works Ltd (70%)

Inventors (30%)

MILESTONES & ROADMAP

Founded: June 2006

Patented in countries worldwide

Working Prototype: 2007

Proof of concept on range of fruit & vegetables

First commercial unit operational: 2009

Second commercial unit operational: 2012

CONTACT PERSON

Avner Galili

Tel: +972 52 630 6880

Email: avner@freshdefrost.com

Introducing Fresh DeFrost™ - An Innovative New Pre-Freezing Technology

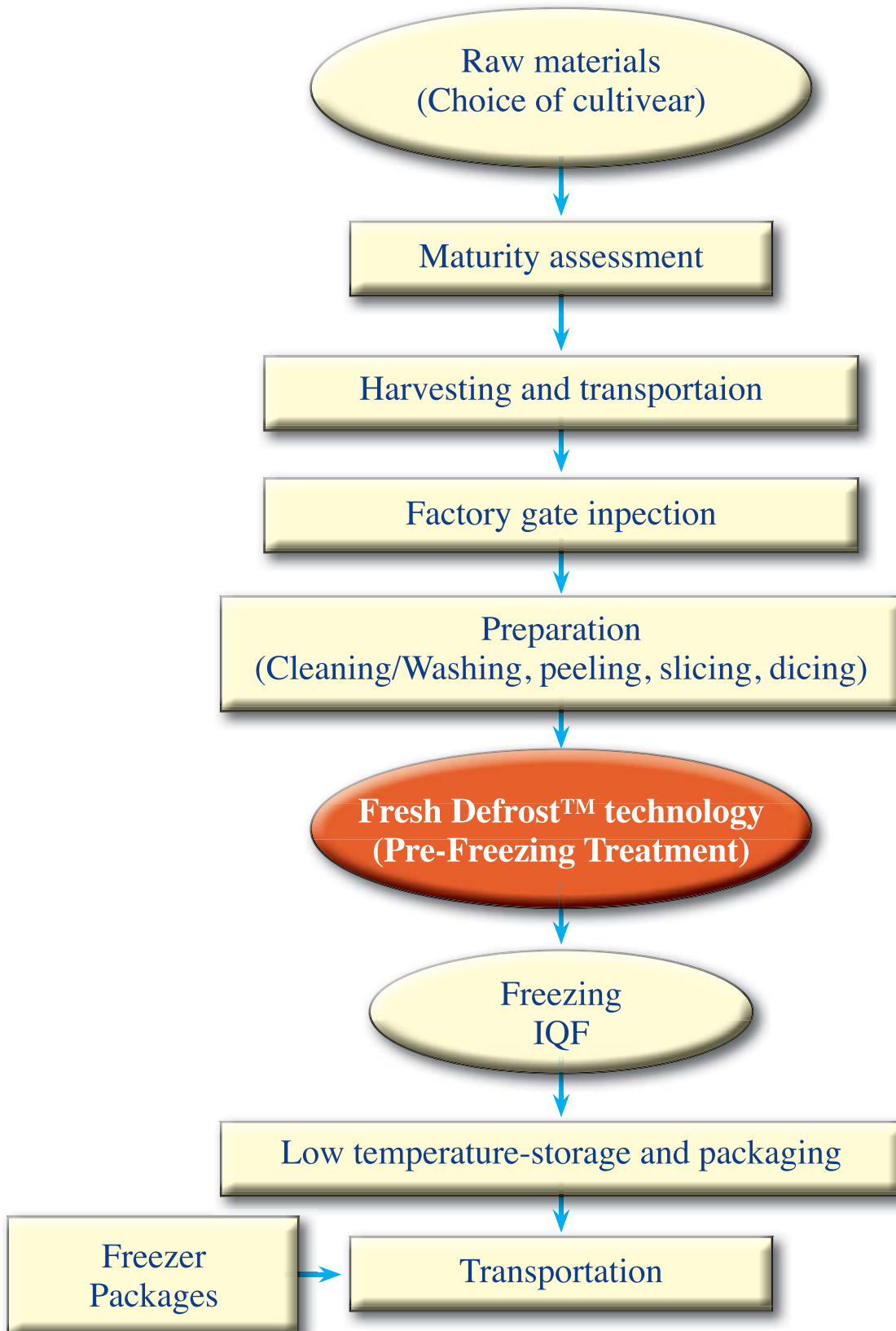
Global production of frozen fruit and vegetables currently reaches 15 million tons, and is growing annually at a rate of over 3%. However, considering normal human consumption of fruit and vegetables, production of frozen products is very heavily skewed toward vegetables. Fruit and berries account for 35% of total fruit and vegetable consumption, while vegetables account for 65%. In contrast, frozen vegetables account for more than 91% of global production, while in some countries, such as the US, this figure reaches over 93%. Frozen vegetables are thus far more popular than frozen fruit in the food industry, as well as with consumers.

Another clear trend in the frozen products market is diversification. The main obstacle to this is quality deterioration during thawing with much of the damage attributed to loss of juice and structural density. This is a problem yet to be overcome. The main niche for frozen products therefore, remains the manufacture of processed products such as juices, nectars, preserves, yoghurt additives, and so on. Frozen fruits and berries, which suffer the most severe quality deterioration upon thawing, are given very limited supermarket shelf space, while the modest volume of frozen fruit and vegetables sold is more often than not used as a cooking ingredient.

Our research was based on the assumption that damage to the quality of frozen fruit and vegetables was related not to the size of the ice crystals, but rather to the overall increase in the volume of ice crystals in the cell, leading to rupture of the cell membranes (since plant tissue membranes, unlike those of animal tissue, are characterized by very low elasticity). In addition, further damage is caused by crystallization of the water in the intercellular space, the first to crystallize during freezing. It is a well-known fact that during freezing at temperatures of -18°C to -20°C , the volume of ice crystals increases dramatically. If, by applying the **Fresh DeFrost™** pre-freezing technology, we can induce conditions that conserve the integrity of the cell membrane, then it should be possible to compensate for the increased volume of the ice crystals.

The **Fresh DeFrost™** technology involves only physical processing of fruits and berries. It does not employ any chemical preparations and maintains the natural character of the produce.

**A general flowchart of frozen fruits
with Fresh DeFrost™ Pre- Freezing technology:**



Fresh DeFrost™ lends itself to a variety of applications using various systems, including relatively simple and inexpensive systems that may readily be incorporated into existing industrial lines for the production of frozen foods.

The innovative Fresh DeFrost™ technology overcomes the drawbacks of current freezing technologies. Fruit and berries that are thawed out after being processed by the Fresh DeFrost™ method are nearly indistinguishable from their fresh counterparts.

A newly developed, proprietary technology, Fresh DeFrost™ is the most important innovation to impact the field of plant material freezing in recent decades.

The new freezing process is the first of its kind and the first major innovation in the food freezing industry for decades. It brings with it important advantages. It is an all natural process using no chemicals, and maintains the fruit's original nutritional value. It does not adversely affect the flavor or appearance of the fruit or vegetable, never causing them to become runny. What's more, the hygienic process resulting in low bacterial levels ensures increased shelf life.

It offers a number of significant advantages:

- **First**, the process involves no chemical additives or compounds. The original fresh taste and food value is maintained.
- **Second**, the process has no undesirable effect on the produce, nor does it cause any loss of the aroma of the fresh product. It does not reduce the structural density of fruit, berries or vegetables.
- **Finally**, the process allows sanitary conditions that ensure a low Level of microbial contamination, thereby increasing the food's shelf life

With the new Fresh DeFrost™ technology, producers and distributors can now offer their clients a year-round supply of their favorite fruit and berries, at a far superior post-thawing quality than can be provided by any other technology in use today.



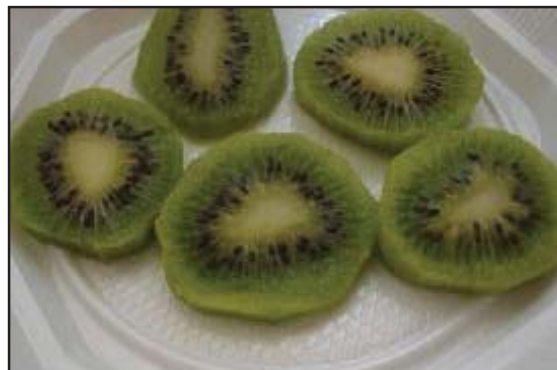
Arils - IQF Technology



Arils - FDF Technology



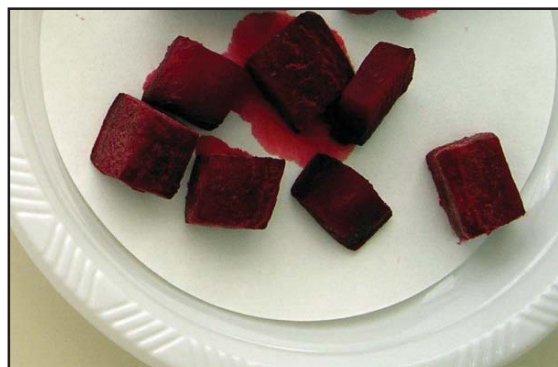
Kiwi - IQF Technology



Kiwi - FDF Technology



Beetroots - IQF Technology



Beetroots - FDF Technology



Green Peper - IQF Technology



Green Peper - FDF Technology

Fresh Defrost Tests Results as of October 2008

In the following pages you will find:

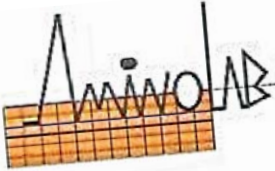
- A brief summary of most tested fruits and vegetables, treated by Fresh Defrost R&D department.
- Certificate of Analysis for pathogens made by Aminolab, as an independent laboratory for:
 1. Coliforms
 2. Yeast
 3. Molds
 4. Lactobacillus
 5. Streptococcus Fecalis

For questions and clarifications please contact:

Mr. Avner Galili

avner@freshdefrost.com

Tel: +972-3-9640377



אמינולאב בע"מ
 שדות מעבדה אנליטית לתעשייה, דפואה, הקלואה, מחקר ואיכות הסביבה
 סניף ראשי: קריה ויצמן ת.ד. 4074, נס ציונה 70400 טל: 08-9303333, פקס: 08-9303300
 סניף צפון: בנין ר.מ.א, היצורים 19, ת.ד. 1033, כרמיאל 20100 טל: 04-9586916, פקס: 04-9582154

13/02/2008
 Report No: M-01115T



To:
 Dr. Goldman Genady
 Fresh Defrost

Tel: 054-4717912
 Fax: 03-9640451

CERTIFICATE OF ANALYSIS

Aminolab No.: 04690.08-M
 Sample: Frozen Fruit 1 - Pomegranate Pom. Won-
 27.01.2008-C-NCI
 Sampled by: The Customer

Sample reception: 31/01/2008
 Examination date: 31/01/2008
 Completion date: 03/02/2008
 Storage temp.: -15(-18)°C

General Remarks:
 For the standart requirements see appendix attached

Analyses Results:

Analysis	Units	Results	Remarks
Total Count	CFU/gr	<10	-
Coliforms	CFU/gr	<10	-
Yeast / Molds	CFU/gr	<10	-
Yeast	CFU/gr	<10	-
Molds	CFU/gr	<10	-
Lactobacillus	CFU/gr	<10	-
Streptococcus Fecalis	CFU/gr	<10	-

Analyses Remarks:
 (-)=No remarks

Quality Assurance:

Analysis	Method / Standard	Remarks
Total Count	IS 885 part 3	a,b
Coliforms	IS 885 part 4	a,b
Yeast / Molds	IS 885 part 8	a,b
Lactobacillus	IS 885 part 14	a,b
Streptococcus Fecalis	IS 885 part 5	a,b

Accreditations / Certifications:
 The laboratory is accredited under ISO/IEC 17025 with standard operating procedures.
 a. Aminolab is accredited to perform this analysis under ISO/IEC 17025 by ISRAC.
 b. Aminolab has the recognition to perform this analysis by the Israeli Ministry of Health.

Analyzed By: Naira Gortsunian Ph.D.

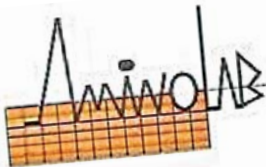
Approved by: Galit Tsabary, Ph.D. - Lab. Manager

Signature: _____

Signature: _____

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This certificate is valid only when it is presented in its complete form, and it is not permitted to extract part for inclusion in any other document. The data presented accurately expresses the results for the sample received only. It is not permitted to use Aminolab Ltd's name or its reputation in respect to the above - specified results, without Aminolab written consent.



אמינולאב בע"מ
 שדות מעבדה אנליטיים לתעשייה, דפוחה, הקלואה, מחקר ואיכות הסביבה
 סניף ראשי: קרית ויצמן ת.ד. 4074, נס ציונה 70400 טל: 08-9303333, פקס: 08-9303300
 סניף צפון: בנין ר.מ.א, היוצרים 19, ת.ד. 1033, ברמיאל 20100 טל: 04-9586916, פקס: 04-9582134

13/02/2008
 Report No: M-01115T



To:
 Dr. Goldman Genady
 Fresh Defrost

Tel: 054-4717912
 Fax: 03-9640451

CERTIFICATE OF ANALYSIS

Aminolab No.: 04697.08-M
 Sample: Frozen Fruit 8- Strawberry- Siraw- 28.01.2008
 -Tr5h- C1
 Sampled by: The Customer

Sample reception: 31/01/2008
 Examination date: 31/01/2008
 Completion date: 03/02/2008
 Storage temp.: -15-(-18)°C

General Remarks:
 For the standart requirements see appendix attached

Analyses Results:

Analysis	Units	Results	Remarks
Total Count	CFU/gr	105	1
Coliforms	CFU/gr	<10	-
Yeast / Molds	CFU/gr	<10	-
Yeast	CFU/gr	<10	-
Molds	CFU/gr	<10	-
Lactobacillus	CFU/gr	<10	-
Streptococcus Fecalis	CFU/gr	<10	-

Analyses Remarks:
 (-)=No remarks
 1. Results were obtained from plates on which less than 30 colonies were performed.

Quality Assurance:

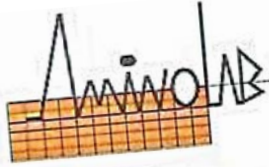
Analysis	Method / Standard	Remarks
Total Count	IS 885 part 3	a.b
Coliforms	IS 885 part 4	a.b
Yeast / Molds	IS 885 part 8	a.b
Lactobacillus	IS 885 part 14	a.b
Streptococcus Fecalis	IS 885 part 5	a.b

Accreditations / Certifications:
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a. Aminolab is accredited to perform this analysis under ISO/IEC 17025 by ISRAC.
 b. Aminolab has the recognition to perform this analysis by the Israeli Ministry of Health.
 Analyzed By: Naira Gortsunian Ph.D.

Approved by: Galit Tsabary, Ph.D. - Lab. Manager

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Lab No. 005
 13.02.2008
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Appendix to Certificate of Analysis No.: M-01115

Analysis	Units	Israeli Standards 877 for Frozen fruits and vegetables July 1995
Coliforms	CFU/ gr	≤ 10
Yeast	CFU/ gr	$\leq 5 \times 10^3$
Molds	CFU/ gr	≤ 10
Lactobacillus	CFU/ gr	$\leq 5 \times 10^3$

Regards,

The Microbiology Division



Fruit: Pomegranate



Control (IQF)



Treatment (FDF)

Fruit: Strawberries



Control (IQF)



Treatment (FDF)

Fruit: Cherries



Control (IQF)



Treatment (FDF)

Fruit: Lichi



Control (IQF)



Treatment (FDF)

Fruit: Figs



Control (IQF)



Treatment (FDF)

Fruit: Orange (Sliced)



Control (IQF)



Treatment (FDF)

Fruit: Melon (Galia)

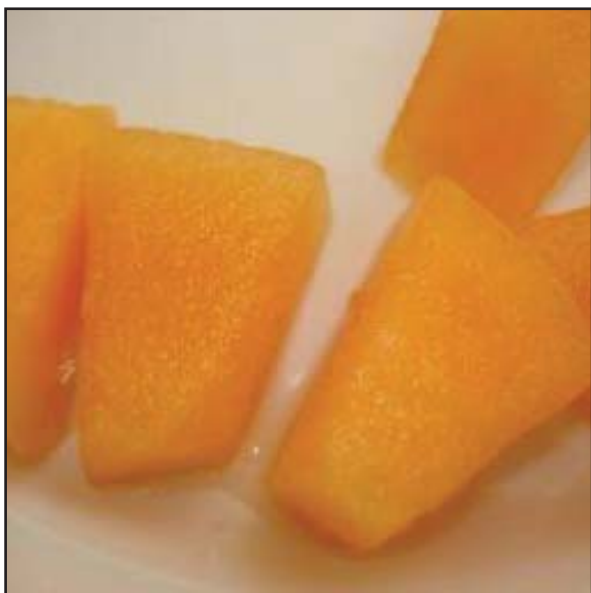


Control (IQF)



Treatment (FDF)

Fruit: Melon (Scharante)



Control (IQF)



Treatment (FDF)

Fruit: Apricot



Control (IQF)



Treatment (FDF)

Fruit: Mango

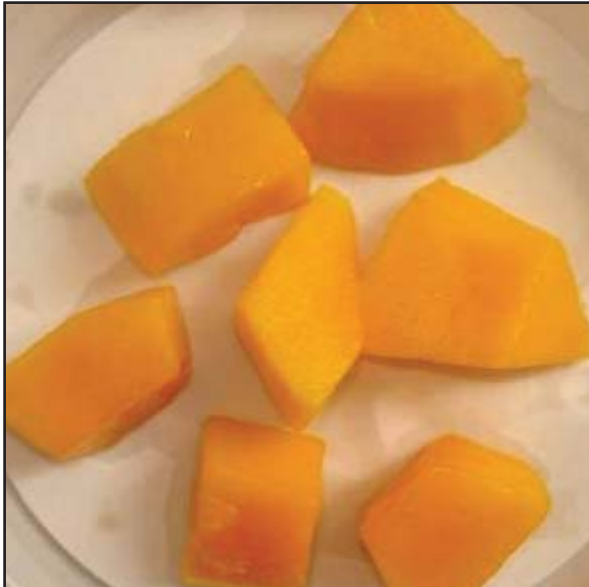


Control (IQF)



Treatment (FDF)

Fruit: Papaya



Control (IQF)



Treatment (FDF)

Fruit: Plums



Control (IQF)



Treatment (FDF)

vegetable: Beetroots



Control (IQF)



Treatment (FDF)

vegetable: Green Peper



Control (IQF)



Treatment (FDF)

vegetable: Red Peper



Control (IQF)



Treatment (FDF)

vegetable: Yellow Peper

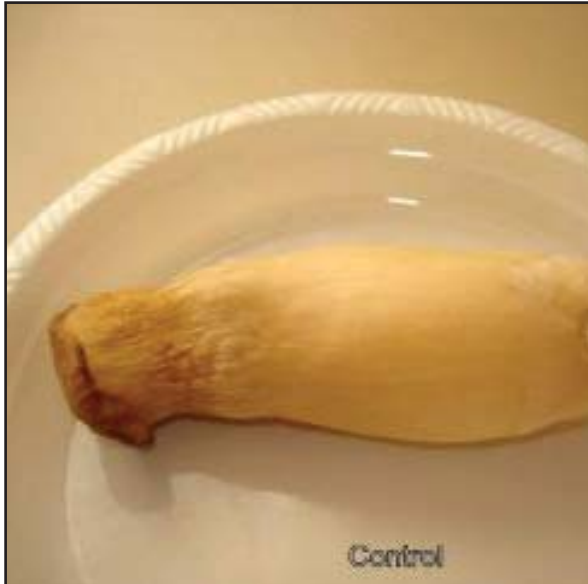


Control (IQF)



Treatment (FDF)

vegetable: Mushrooms (Pleurotus eryngii)



Control (IQF)

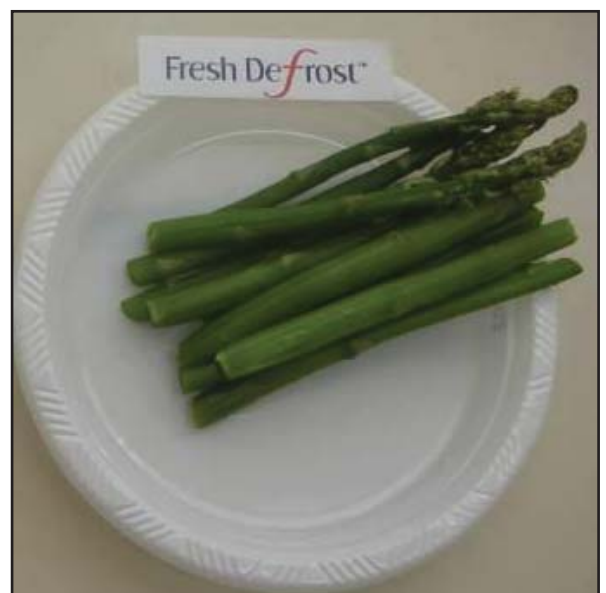


Treatment (FDF)

vegetable: Asparagus



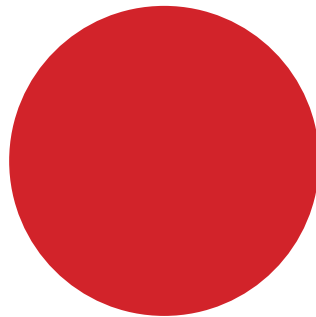
Control (IQF)



Treatment (FDF)

Fresh Defrost

Innovative Pre-Freezing technology



JAPAN



Fresh Defrost

Innovative Pre-Freezing technology



Fresh Defrost

Innovative Pre-Freezing technology



USA

Fresh Defrost

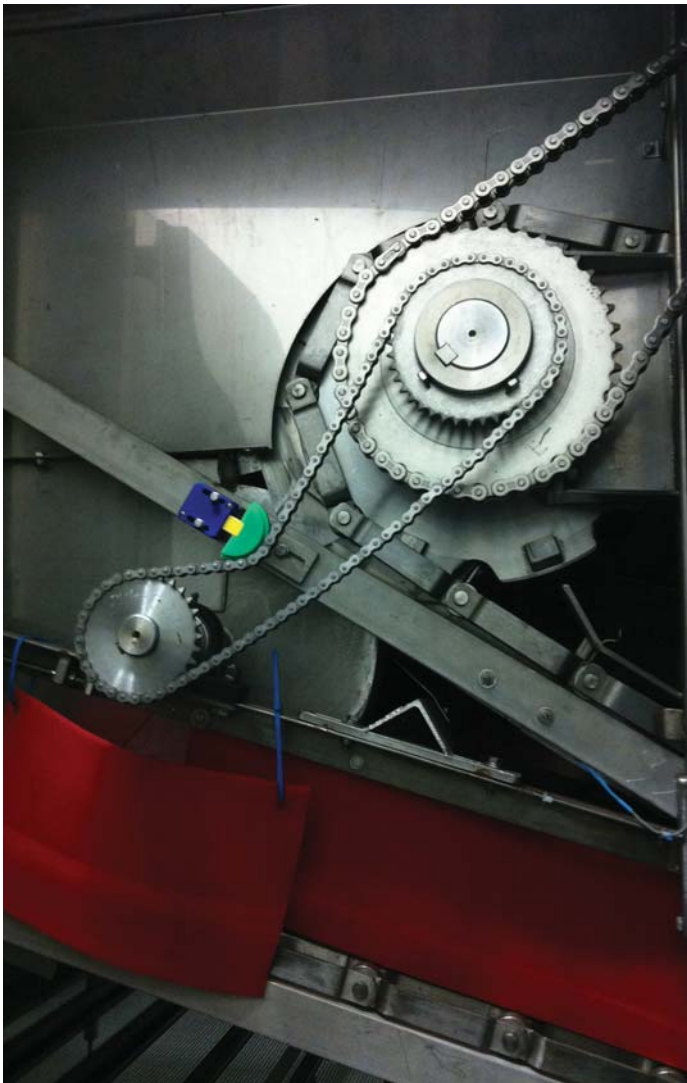
Innovative Pre-Freezing technology



3 stories continuous line for Strawberries, Blueberries, Apricot



1 belt continuous line for Strawberries, Blueberries, Apricot and other fruits



Semi commercial unit for pomegranate Arils



ArilSystem™
www.arilsystem.com

Fresh Defrost
www.freshdefrost.com

DiSTeK
www.distekgroup.com

Experts in the Design and Development of Leading Products and Innovative Processes, Unique Patents, Mechanized Solutions for Upgrading Performance in Industry and Agriculture

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- Wide Range of Advanced Products
- Comprehensive Turnkey Projects
- Customized Solutions for Clients' Specific Requirements
- Ongoing Customer Support

Our LEADING Products:

- **ArilSystem™**, the world's best automated pomegranate aril extraction system.
- Harvest and Post-Harvest Solutions for Sorting and Packing Houses.
- Conveyance Solutions.
- Heat Processing Equipment (dehydrators, ovens and dryers).
- Innovative Sulfur-free Litchi Preservation Treatment.
- **Fresh Defrost**, a pre-freezing technology. The food industry's first real breakthrough in decades.
- **DiSTeK** The Unique Patented Thermo-Diffusion Zinc-Coating.

Company Profile