



## Glittery and Crunchy A New Healthy Vegetable with a Salty Taste

**“Tsuburina” is a brand of vegetable (ice plant) cultivated using the HEFL technology to contain functional ingredients**

Tsuburina is **rich in the inositol group (anti fatty liver vitamin), beta-carotene, minerals, proline and organic acids, which are known as anti-aging ingredients.** It is characterized by bladder cells on its leaves and stalks that glitter like jewels. It has been found that such **anti-aging functional ingredients** can be increased in a

plant by controlling the cultivation conditions (temperature, humidity, wavelength of light, concentration of minerals in the nutrient solution, etc.). **With “Health and Beauty” as keywords,** we are further studying the cultivation of Tsuburina as a **brand vegetable.**

### Functional components found in Tsuburina

#### Inositols

They are part of the vitamin B group, which are essential in promoting cell growth, and are sometimes referred to as “antilipid vitamins”. Myoinositol is known to control the increasing of neutral fat and pinitol has been found to lower blood sugar levels. They are also known to help with recovery from fatigue and prevention of visceral disease, hyperlipemia, depression, hair loss, and so on.

#### Beta-carotene

It is known to convert to vitamin A inside the body and helps with relieving eye fatigue, preventing colds, etc. and has beautification effects. As an antioxidant, it protects cells from active oxygen. Research has shown that it helps with the prevention of bad cholesterol clogging blood vessels. It also enhances the immune system as it keeps areas such as the skin and mucous membranes in healthy conditions.

#### Prolines

They are amino acid moisture components. They sustain the ability of the cornified layer to retain its moisture, improve the condition of the skin, and help keep the metabolism of the skin normal. They are also ingredients that produce collagen, which is a component that makes up the inner skin and maintains its tone and firmness.

#### Vitamin K

It is essential for allowing the blood to properly coagulate and is needed to keep the calcium in the bones.

#### Minerals

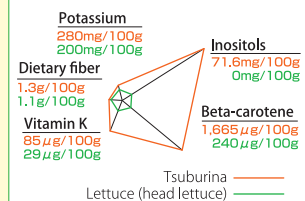
They include potassium (for maintaining normal blood pressure), calcium (for forming healthy bones, teeth, etc.), zinc (for a healthy sense of taste and promoting collagen production), and manganese (helping to get rid of carbohydrates and fats).

#### Organic acids

They are known to include acids such as citric acid (for improving kidney functions, recovery from fatigue, and maintaining normal blood pH levels) and folic acid (a coenzyme that is necessary for the synthesis of amino acid, nucleic acid, etc.) through cultivation methods.

#### Food component comparison

Plenty of natural inositols!  
Plenty of natural beta-carotene!

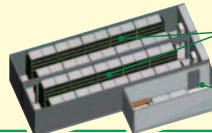


\*Increment of lettuce X 100  
\*Based on standard tables of food composition in Japan in 2010 and surveys conducted by us

### Container Type Plant Cultivation System

- \*The system has a footprint of 9 tsubo (approx. 30 m<sup>2</sup>) and has 6 shelves (120 HEFL lighting units) which are 2.5 m long, equipped with water supply and drainage facilities.
- \*Daily production is around 60 plants in one container. Seedlings can also be cultivated.
- \*The containers can be interconnected.
- \*As an option, a function to remotely control temperature, humidity, nutrient solution supply, and CO<sub>2</sub> concentration can be added.

Interconnection of containers



Cultivation rooms

Preparation room

HEFL lighting technology

Cultivation know-how

Emphasis on workability

Air conditioning technology



## ● Company information ●

Main Lines of Business	Production and sales of functional vegetables and assistance with the designing, constructing, and starting up of plant factories		
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