



True Beauty and Sustainability Begins with the Ingredients

Hidden within some of the ingredients of our daily skincare products are stories of sustainability.

How does cosmetic ingredient manufacturer Hayashibara strive to work for true beauty?

More and more, consumers are scrutinizing ingredients when choosing their skincare products. They search for keywords such as “Retinol” and “Vitamin C derivatives”, and focus on how sustainable, ethical, and environmentally conscious manufacturers are.

The Okayama Prefecture-based Hayashibara is a long-standing manufacturing company that initially prepared syrup sugars from rice starch and has been producing various functional sugars using enzymes for more than 130 years. The company is developing unique and efficacious ingredients for personal care, pharmaceutical, and food products around the globe, and their ingredients can be found in a wide variety of skincare products used every day.

Developing more environmentally friendly, sustainable, and socially responsible manufacturing processes and products is the goal

Hayashibara’s core strengths lie in its manufacturing technology, which combines the power of microorganisms and enzymes - the fruits of nature - with raw materials of natural origin. The company is working to reduce the burden on the environment, by upcycling, and manufacturing non-petroleum-based, vegetable-based materials for personal care and cosmetic ingredients. Next, we will focus on three unique sustainable Hayashibara technologies:



1 “AA2G™” Ascorbyl Glucoside (Vitamin C Derivative) Effective use of byproducts from manufacturing Reducing the environmental impact

AA2G™ -- Developed with the effective use of byproducts from manufacturing, Hayashibara has been working to reduce its environmental impact as well as to make effective use of resources. In skincare products AA2G™ helps deliver:

- Healthier, Brighter, Younger-Looking Skin
- Stabilized time-released Vitamin C
- Brightened and evened skin tone
- Protection against UV-induced damage

The nutrient-rich byproducts of the AA2G™ production process would put a strain on the environment if they were disposed of as is. But the company has been working to reduce its environmental impact as well as to make effective use of resources; for example, reusing the byproducts for other purposes, such as fermentation production.

In summary, the ingredients used in daily skincare routines demonstrate the end goal of being efficacious while keeping the environment in mind.

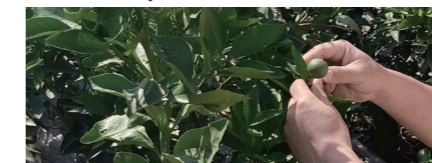
2 “Glucosyl Naringin” Upcycling fruit waste Respectful use of natural resources

Next, we focus on a skincare active ingredient that protects against wrinkles and sagging - essential to managing signs of aging.

Glycosyl Naringin (GN) -- Produced using upcycled discarded fruit that - rather than being thrown away - are reborn as raw materials for skincare ingredients, thereby contributing to a reduction in environmental impact. In skincare products GN helps to:

- Promote elasticity and boost skin resilience
- Encourage elastin production and elastin fiber formation
- Restore skin firmness

Naringin is derived from citrus fruits such as grapefruit and yuzu. When harvesting citrus, young developing fruit is typically removed as part of the thinning process in order to improve fruit quality at harvest. Instead of throwing away those young fruits and other unsellable fruit that has fallen from the trees before harvest, Hayashibara utilizes them as raw ingredients in skincare actives. The company also applies that approach to alpha glucosyl hesperidin, another citrus-derived ingredient that is used to help combat dull skin and dark circles under the eyes.



3 “Pullulan” Developing a non-petroleum based sustainable plant-derived polymer

Many polymers are derived from petroleum, but Hayashibara developed a non-petroleum, sustainable plant-based polymer made by fermenting starch. It is used in medicine capsules, oral refreshment films, and cosmetics such as serums with an immediate lifting effect.

- Flexible film forming
- Instant lifting effect
- Reduced wrinkle depth
- Superior texture creation
- Adhesive and bonding properties

Pullulan and its unique properties make it a promising sustainable plant-based material.

At Hayashibara, ingredients developed for skincare and cosmetic products are made with an awareness of protecting the global environment, establishing and maintaining sustainable development in an ethical manner, and an understanding that true beauty and sustainability begins with the ingredients. Be Beautiful. Be You.

Awarded Gold Medal from international certification system EcoVadis

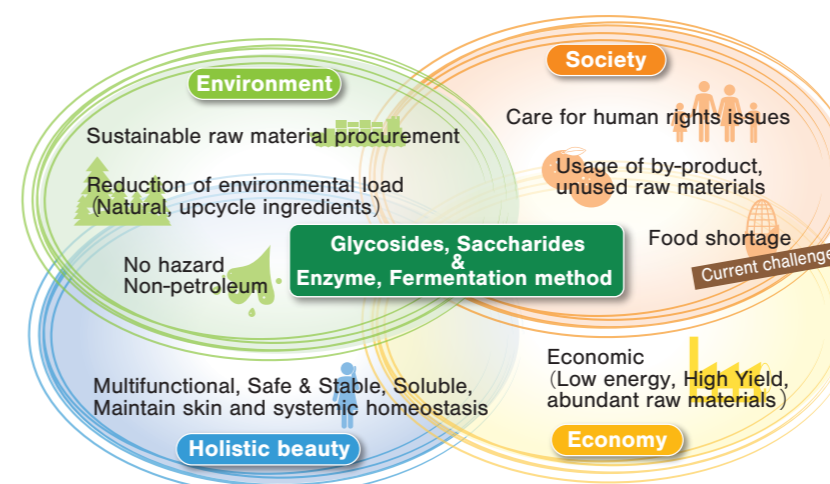


2022 EcoVadis Sustainability Rating “Gold” logo

EcoVadis surveys and assesses the sustainability performance of more than 90,000 suppliers in more than 160 countries. Its evaluation is based on four categories: Environment, Labor and Human Rights, Ethics, and Sustainable Procurement. Hayashibara was awarded the EcoVadis “Silver” in 2021 and the prestigious “Gold” in 2022, which is only awarded to the top 5% of eligible companies worldwide.

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Holistic Sustainability of Hayashibara