

GUTTATION

Lifting Pressure on Mineral Fertiliser for Strawberry Plant Health

Non-GMO, Non-Chemical, Non-Pesticides

A Cellular Regeneration Biotech with HQ in Singapore

Official Website: www.ibiostim.com



IN THIS ISSUE

MARKET SIZE & HUMAN NUTRITION

Asia-led production for low calorie, high fiber strawberries.

CONSUMER CHOICE

Unlocking consumer purse strings through organoleptic taste.

GUTTATION AS INDICATOR FOR PLANT HEALTH

Rewriting mechanism for excess water/mineral exudation through foliar intervention meeting harvest goals.

CELLULAR REPAIR IN “24Hrs”

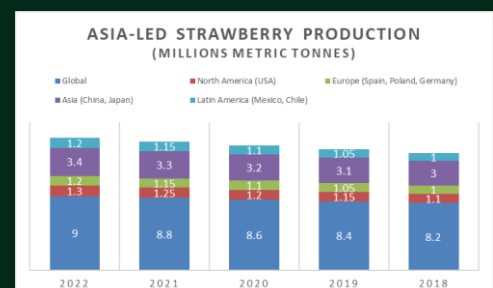
Editor Dr. Jeff Lim

Fieldwork by ChongMing

MARKET SIZE & HUMAN NUTRITION

Increasing awareness of the nutritional qualities of strawberries in consumers is driving growth globally, with Asia (China & Japan) leading at 3.4 million metric tonnes per annum, followed by North America (USA), with Europe (Spain, Poland & Germany) and Latin America (Mexico & Chile) sharing the third spot in 2022 (UN Data).

Equipped with low-calorie and high fiber content, 3 servings of strawberries on a weekly basis meet 4.3% and 6-8.6% of the total dietary fiber intake of an adult and a teenager, respectively, making it a healthy choice for everyone in the family.



Region	Key Preferences	Additional Insights
North America	<ul style="list-style-type: none">Sweetness: High preference for sweet strawberries.Appearance: Bright red, plump, and firm.	<ul style="list-style-type: none">Consumers in the U.S. prefer strawberries with a strong aroma and minimal blemishes.
Europe	<ul style="list-style-type: none">Taste: Sweet with a fruity aroma.Color: Uniform color.Texture: Moderately juicy.	<ul style="list-style-type: none">German consumers prefer strawberries without physical injuries.Demand peaks in summer.
Asia	<ul style="list-style-type: none">Quality: High-quality, premium strawberries.Flavor: Sweet and aromatic.	<ul style="list-style-type: none">Japanese consumers favor premium strawberries, especially during the winter season.
Latin America	<ul style="list-style-type: none">Freshness: Preference for fresh, locally grown strawberries.Taste: Sweet and juicy.	<ul style="list-style-type: none">Mexican consumers value freshness and often purchase strawberries from local markets.

CONSUMER CHOICE

Sweetness and Aroma:

Across all regions, sweetness and a strong fruity aroma are highly valued traits in strawberries.

Appearance:

Consumers generally prefer strawberries that are bright red, plump, and free from blemishes.

Seasonality:

Demand for strawberries tends to peak during specific seasons, such as summer in Europe and winter in Japan.

By marrying consumer insights for Sweetness and Aroma with the principle of plant health in **[ISSUE 1]** @BioStim publication, the need to identify a suitable tool that transcends cultural, geographic and language differences through commercial adaptation and implementation becomes a priority.

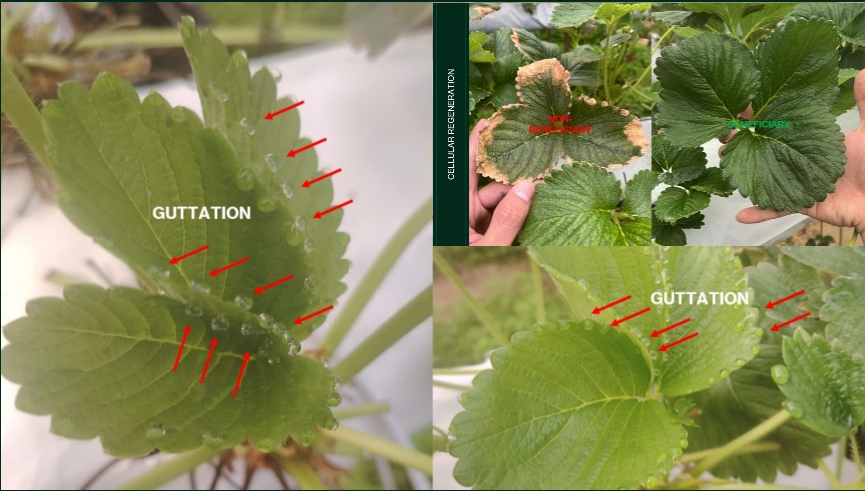
In modern AG, strawberry are produced in enclosed spaces and open fields, on substrates and soil respectively. (Hydroponic excluded). Common to both techniques, the need to supply constant flow of water, nutrients, microbial, sunlight, and CO₂ remains.

THE OPPORTUNITY

Increasing, we are witnessing incidents of strawberry farms experiencing burnt tips arising from over-fertilization on manufacturer's recommendation. This is true of this new commercial strawberry farmer on potassium sulphate foliar spray regime, causing a disruption of the in-plant calcium channel, leading to calcium deficiency. This affects fruit set and fruit quality.

GUTTATION AS INDICATOR FOR PLANT HEALTH

Fieldwork by ChongMing



The trick to solve this challenge involves immediate removal of potassium sulphate and replace with a unique cocktail comprised bio-enzymes, amino acids, micro-nutrients and proprietary biofertilizer comprised ~0.5% NPK (baby) of organic origin. Similar to **[Method 1]** in **[ISSUE 2]** @iBioStim publication, the key is to restore equilibrium through a combination of soil and foliar spray applications. For substrate, only foliar regime is suitable.

RESULTS

Osmotic root pressure (A) within the cells of a plant's roots pushes water up through the plant. This pressure is generated when the soil is very moist, and the roots absorb water actively. The farm is on irrigated substrate with no precedence. The classical suggestion that water moves upward through the xylem vessels due to (A) becomes a fundamental **flaw**. Within 24 hours in a single potent spray, dew drops formed, providing clear evidence for guttation due to **[Method 1]**. The basis for guttation is accurate but lacked the activation energy step to complete the picture due to over-fertilisation. For a plant under stress, with calcium channel out of equilibrium, the thesis behind classical guttation becomes invalidated.

SUMMARY

Pressure on mineral fertilizer (over) is lifted, restoring health to the strawberry farm. Non-GMO, Non-Chemical, Non-Pesticides.