







# CH3

## Innovation and R&D

## Target Formulation

	Targets for 2023-2024	Targets for 2025-2026	Targets for 2027 and beyond	Corresponding SDGs
Customer Satisfaction	<ul style="list-style-type: none"> <li>Ensure service quality through customer interviews and satisfaction surveys following phone support, and include these items in evaluation systems to smooth service processes</li> <li>Conduct product refresher training courses led by professional nutritionists to enhance product knowledge</li> <li>Compile frequently asked customer questions and establish a database to ensure consistency and accuracy of service quality</li> <li>Implement a comprehensive customer call management service solution to improve service quality and response efficiency of phone support</li> </ul>	<ul style="list-style-type: none"> <li>Ensure smooth service processes and service quality using satisfaction surveys to regularly assess relevant indicators. Our goal is to increase "complete satisfaction" rates. Our customer service staff participate in training organized by professional institutes each year and obtain related certificates</li> <li>Established a new customer data platform (CDP) database to analyze, track, and manage customer interactions, integrating data from all sources to greatly strengthen marketing efficiency and customer service, achieving personalized communication, facilitating effective understanding of consumer needs, and providing timely marketing solutions which allow us to take advantage of consumer interaction opportunities and manage service quality</li> </ul>	<ul style="list-style-type: none"> <li>Establish a complete customer service and nutritionist team to respond to customer service queries and provide comprehensive health, diet, and lifestyle recommendations</li> </ul>	
Brand Marketing	<ul style="list-style-type: none"> <li>We keep striving to be "A health expert for the entire family." We provide the public with healthy and safe products, and our advertisements and promotions all adhere to food safety laws.</li> <li>We continue to strengthen awareness of health food and energy drinks for younger groups.</li> <li>We strengthen the project of Healthy Dream and Manufacturing Organization (HDMO) and ODM/OEM marketing materials.</li> </ul>	<ul style="list-style-type: none"> <li>Establish mechanisms for an OEM brand and use relevant promotion materials to expand our reach into international markets beginning with ODM/OEM services. We may also expand into other markets using our own private label brands.</li> <li>Establish a consumer data center, make good use of one party's data, and improve advertising efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Form alliances with overseas and local brands, or further strengthen our corporate advantages through acquisitions as we work to become an international brand</li> </ul>	 
Product Liability	<ul style="list-style-type: none"> <li>Grape King Bio's mission is to maintain public health, and we are in the process of developing 2-4 products for prevention and mitigation of various health problems faced by the public</li> <li>To enable the public to enjoy their lives without worry, we plan to develop 2-4 functional snack foods</li> <li>To better integrate sustainability concepts into product development, we plan to develop 1-2 sustainable products that use plastic-free paper, recyclable materials, and raw materials and formulation designs that adhere to the spirit of the SDGs</li> <li>We work to maintain pet health and have developed 1-3 pet food products</li> <li>Recyclable plastic materials will become one of our main packaging products, and we will continue to establish recycling sites</li> <li>Continuously collect data, evaluate or replace current materials or processes with more environmentally friendly materials or processes, such as: flexographic printing replaces gravure printing, uses a process that can reduce plastic by one-third for product development, digital aluminum foil, and replaces feasibility of using plastic straws for PKL products, packaging materials with recyclable single raw materials and other environmentally friendly materials</li> </ul>	<ul style="list-style-type: none"> <li>Sustainability risk assessment: Make the recovery rate of key supplier sustainability self-assessment questionnaires reaches 90%.</li> <li>Strengthen Zero supply shortages of the supply chain: It is expected to complete 150 multi-source solutions of materials(based on the year 109).</li> <li>Implement a comprehensive supplier evaluation system: Maintain 100% of suppliers conduct annual regular evaluation.</li> <li>Establish and promote an intelligent multi-communication platform for suppliers, and make the online rate of suppliers reach 80%.</li> </ul>	<ul style="list-style-type: none"> <li>Plastic packaging does not decompose easily, which can lead to accumulation of plastic waste. We plan to replace current HDPE packaging materials with biodegradable packing materials to reduce usage of plastic containers</li> <li>Continue to develop products aimed at current health needs of local consumers</li> </ul>	  

## 3.1 Innovation Management and Patents

General manager of Biotech Research Institute  
**Jin-Chu Chen**

“ **Material R&D at our Biotech Research Institute incorporates cutting-edge technologies and collaborations with experts. Our products have achieved successes both at home and overseas, and we hope to enhance the health of the public.** ”

Director of Biotech Research Institute  
**Yen-Lien Chen**

“ **Grape King Bio’s fungal fermentation technology serves as an industrial benchmark. We will continue to develop new technologies to meet the future needs of society.** ”

Deputy Director of Innovation R&D Center  
**Ya-Ling Liu**

### Product Innovation and Sustainability

Innovation and R&D Key issues: Innovation and R&D



Management Approach	Key Issue-Innovation and R&D
Policies	Combine core capabilities, external research, and innovation units to develop unique Grape King Bio functional materials or formulations in response to consumer demands and market trends.
Commitments	We strive to ensure product safety and legal compliance while developing products for appropriate target groups.
Targets	<p><b>Short-term</b></p> <ul style="list-style-type: none"> <li>In response to our aging society and the ongoing coronavirus pandemic, we screened and researched functional materials for relevant issues such as sarcopenia, kidney damage, prevention of body fat formulation, preventive mechanisms for neurodegenerative disorders, anti-viral properties, and infertility.</li> <li>We plan to file more than 20 functional material patent applications in 2023 and submit innovation patents in accordance with product development strategies.</li> <li>We continue to develop health foods and cosmetic materials with novel functions, and have built a new fermentation plant to double our production capacity. We have completed long-term safety tests for Antrodia cinnamomea for our newly developed herbal drugs.</li> </ul>
	<p><b>Mid-term</b></p> <ul style="list-style-type: none"> <li>Complete commercial production on 3 novel biotechnology materials for improving depression, PMS, ADHD, hearing impairments, Parkinson's disease, sleep, and kidney health.</li> <li>Establish specifications and commence pre-clinical animal trials for new plant-based medicines, gradually strengthening our ability to become a sophisticated API manufacturer.</li> <li>Analyze current major health trends and form cross-industry alliances where necessary to design products for specific groups and health needs</li> <li>Develop formulations and products that adhere to environmental protection and sustainability concepts.</li> <li>Conduct clinical trials to verify novel efficacies of our health foods and cosmetic materials to ensure the effectiveness of our self-produced raw materials and to enhance consumer trust. We are planning to conduct phase II human clinical trials of our Antrodia cinnamomea herbal drugs on nonalcoholic fatty liver.</li> </ul>
	<p><b>Long-term</b></p> <ul style="list-style-type: none"> <li>Complete commercial production for 6 biotechnology cosmetic ingredients with anti-aging, anti-allergy, skin care, and hair care properties</li> <li>Complete commercial production on 6 novel biotechnology materials for improving depression, PMS, ADHD, hearing impairments, Parkinson's disease, sleep, and kidney health</li> <li>Continue to track food and health industry trends, and form cross-industry alliances with local companies where necessary to develop formulations and products with unique features that comply with the needs of specific groups while adhering to environmental protection and sustainability concepts.</li> <li>Conduct clinical trials to verify novel efficacies of all health foods and cosmetic materials, and publish scientific papers to increase international competitiveness while doubling the production capacity of our probiotics production lines in accordance with market needs. We are planning to conduct phase III human clinical trials of our Antrodia cinnamomea herbal drugs on nonalcoholic fatty liver.</li> </ul>
Responsibilities	External responsible unit: Food and Drug Administration of the Ministry of Health and Welfare, Department of Health of Taoyuan City Government
Resources	In 2022, our Innovation and Research Center newly hired 1 employee with a graduate degree and 1 employee with a Ph.D.
Specific performance	<ul style="list-style-type: none"> <li>✓ Received 29 gold medals, 2 silver medals, 2 bronze medals, and 9 special awards at the International Invention Awards</li> <li>✓ Received Annual Industry Innovation Award at the Taiwan Bio Industry Organization Awards</li> <li>✓ Received Hsinchu Science Park Outstanding Companies Innovative Products Award and a NT\$400,000 prize</li> <li>✓ Received SNQ (Symbol of National Quality) certification for 3 products</li> <li>✓ Our Slim Probiotic King capsules obtained a Distinguished Honor Award for Innovative Products from the Taiwan Association for Lactic Acid Bacteria</li> <li>✓ Our Xin Run Beauty Drink obtained an Outstanding Award for Innovative Products from the Taiwan Association for Lactic Acid Bacteria</li> <li>✓ Continued to extend the efficacy of key materials such as lactobacillus bacteria, Cordyceps cicadae, Hericium erinaceus, and others</li> </ul>

Continued development and innovation is an important component of sustainable management. Grape King Bio is committed to innovation and development of different products and services, and we continue to invest our resources and efforts. Development and applications at our Biotech Research Institute and Innovation and Research Center are conducted in tandem with domestic and foreign institutes. We developed a variety of products and components to attract collaboration with other associations and have submitted applications for multiple patents, showcasing our great achievements. Grape King Bio invested NT\$289,884,000 in innovation and R&D in 2022.

## Major Milestones for 2022

- Three of our products (Children Lutein Drink, Qing Cai Xian Slimming Capsule, Meal Supplement for the elderly) received SNQ (Symbol of National Quality) certification in the health food group of the health food category
- Received NT\$11.2 million grant from the Ministry of Economic Affairs for “High-Fiber and High Protein Fungal Meat Substitute Research” project
- Received NT\$3 million grant from the Ministry of Economic Affairs Industrial Development Bureau iPAS corporate digital talent cultivation pro



## R&D award highlights for 2022 were as follows:

Invention awards received in 2022			
Item	Event	Patents	Award
1	2022 Russian Archimedes International Invention Exhibition	A composition for modulation of testosterone and its use	Gold medal
2		Use of <i>Lactobacillus reuteri</i> GKR1 for preparing composition of reducing uric acid	Gold medal
3	2022 Malaysia Technology Expo (MTE)	Use of <i>Lignosus rhinocerus mycelia</i> active substance for manufacturing an antiviral composition	Silver medal
4		A <i>Lactobacillus rhamnosus</i> GKLC1, a composition and its use for improving alcoholic injury in liver, stomach and/or intestine	Gold medal
5	2022 International Invention & Innovation Exhibition (ITEX) Malaysia	Use of <i>Cordyceps cicadae</i> mycelium active substance for producing compositions for preventing, delaying, or treating change in anterior/posterior chamber volume, change in vitreous humor, and/or retinal detachment	Bronze medal
6		An active substance of <i>Lactobacillus paracasei</i> GKS6, a composition comprising thereof and its use for promoting longevity	Bronze medal
7	2022 European Exhibition of Creativity and Innovation (EuroInvent) Romania	An active substance of <i>Morchella</i> , its use and a composition thereof for improving the reproductive function	Gold medal/special award
8		<i>Lactobacillus plantarum</i> strain, composition comprising the same, method of producing the same and its use for inhibiting or reducing oral pathogens	Gold medal
9	2022 World Genius Convention Japan	<i>Lactobacillus fermentum</i> GKF3, composition containing the same and its use for improving psychataxia	Gold medal
10		Use of preparing a pharmaceutical composition for improving myelination of central nervous system by <i>Hericium erinaceus mycelia</i> extract	Gold medal
11	2022 America's Science & Invention Expo	Method and composition for preventing, treating or relieving bone diseases	Gold medal/special award
12		An active substance of <i>Morchella</i> , its use and a composition thereof for improving the reproductive function	Gold medal/special award
13	2022 Online Korea World Invention Innovation Contest	Active substances of <i>Cordyceps cicadae</i> and its uses in preventing, delaying or treating cataract	Gold medal
14		<i>Lactobacillus brevis</i> GKJOY, composition containing the same and its use for improving psychataxia and promoting nerve function	Gold medal
15	2022 All American DAVINCI International Innovation and Invention Expo	<i>Lactobacillus fermentum</i> GKF3, composition containing the same and its use for improving psychataxia	Gold medal
16		An active substance for preventing hearing loss, method for preparing thereof and pharmaceutical composition	Gold medal

17	2022 International Invention Innovation Competition in Canada (ICAN)	Use of lactic acid bacteria for manufacturing and antiviral composition	Gold medal/special award
18		Use of <i>Phellinus linteus</i> for preparing composition of improving sarcopenia	Gold medal/special award
19	2022 International Invention and Trade Expo London	A <i>Lactobacillus rhamnosus</i> GKLC1, a composition and its use for improving alcoholic injury in liver, stomach and/or intestine	Gold medal/special award
20		Multilayer antioxidant coating lactic acid bacteria (Maoc-Lab) microencapsule	Gold medal/special award
21	2022 Innovation Week in Africa (IWA)	<i>Lactobacillus brevis</i> GKJOY, composition containing the same and its use for improving psychataxia and promoting nerve function	Gold medal
22		Use of lactic acid bacteria for manufacturing and antiviral composition	Gold medal
23	2022 13th IICC International Invention Exhibition	Use of <i>Phellinus linteus</i> for preparing composition of improving sarcopenia	Silver medal
24		Use of preparing a pharmaceutical composition for improving myelination of central nervous system by <i>Hericium erinaceus mycelia</i> extract	Gold medal
25		Use of lactic acid bacteria in improving resistance to enterovirus type 71	Gold medal
26	2022 Hong Kong International Invention and Design Competition	<i>Lactobacillus fermentum</i> GKF3, composition containing the same and its use for improving psychataxia	Gold medal
27		Active substances for the treatment of dementia, preparation methods, pharmaceutical combination, and the preparation methods of the pharmaceutical combination	Gold medal
28	2022 18th Ukraine Innovation Awards	<i>Lactobacillus fermentum</i> GKF3, composition containing the same and its use for improving psychataxia	Gold medal
29		Active substances of <i>Cordyceps cicadae</i> and its uses in preventing, delaying or treating cataract	Gold medal
30	2022 14th International Warsaw Invention Show (IWIS)	An active substance of <i>Lactobacillus paracasei</i> GKS6, a composition comprising thereof and its use for promoting longevity	Gold medal
31		Method and composition for preventing, treating or relieving bone diseases	Gold medal
32	2022 International Invention Show INOVA Croatia	Use of <i>Cordyceps cicadae</i> mycelium active substance for producing compositions for preventing, delaying, or treating change in anterior/posterior chamber volume, change in vitreous humor, and/or retinal detachment	Gold medal/special award
33		Use of lactic acid bacteria in improving resistance to enterovirus type 71	Gold medal/special award





### 3.1.1 Sustained Growth of Material Development Capabilities

#### 1. Grape King Biotech Research Institute (Longtan Branch)

Our Bioengineering Center was established in 1991 and was upgraded to a “Biotech Research Institute” in 2019. The Biotech Research Institute is responsible for developing materials and product production. In terms of R&D, the Biotech Research Institute is responsible for developing and applying our self-developed materials (key components) and actively collaborates with domestic academic and research institutes to develop products, verify product efficacy, and improve processes so as to establish core technologies for our company.

Our domestic and overseas collaboration projects and patents obtained in 2022 include:

- Around 40 industry-academia collaboration projects with the Ministry of Science and Technology, the Council of Agriculture, the Ministry of Education, and colleges and universities
- We currently hold 158 patents; we applied for 27 patents in 2022 and received approval for 34.

The Grape King Bio Biotech Research Institute, which cost NT\$1.6 billion to build, was completed in 2019. Grape King Bio currently has six 1-ton, one 2-ton, one 3-ton, five 5-ton, one 10-ton, two 15-ton, four 20-ton, four 40-ton, and one 50-ton large-scale fermentation tanks as well as eight 100-liter small-scale fermentation tanks. The fermentation capacity over the whole Group has reached 386 tons, the largest capacity seen in the domestic health food manufacturing industry. We implemented automated freeze-drying processes to reduce pollution rates and maintain stable quality. Our downstream production equipment include membrane coating machines, freeze-drying machines, centrifuge machines, low temperature continuous flow drying machines, and filter press machines, which make raw materials for health foods used by Grape King Bio, Pro-Partner, our Shanghai company, and other OEM manufacturers.

The Biotech Research Institute has two 5-ton, two 15-ton, one 20-ton, and one 40-ton fermentation tanks, making for a total production capacity of 100 tons. These tanks have been used for producing and developing fermented materials from fungi and lactic acid bacteria. Commercial production processes have officially commenced. In 2022, our Longtan Factory produced 49 product items and total production weight reached 94,575 kgs.

Our Biotech Research Institute owns proprietary fungal fermentation technologies and the largest organizational fermentation production capacity (386 tons) in Taiwan, achieving a ten-year head start over our industry peers. We combined several dozen patented production technologies with exclusive materials and procured raw materials to develop unique formulations. Apart from classic products such as Ganoderma King, Antrodia King, and Probiotic King, we also developed new products such as Ginseng-Clam Plus B, Snow Brightening Essential Drink, and Tian Qi Maca King, which are popular with the public.

Additionally, many of our developed products have received acclaim, including the Grape King Bio LGG Probiotics, Ganoderma King, Antrodia King mycelium capsules, Proteck Stomaker, Ling Zhi Anti-Allergy, Gold Combest Energy Drink, Combest Energy Drink (Liver Protection Certification), and Sliim Probiotic King capsules; these eight products received health mark certifications. Our probiotics products were supported by thousands of netizens in the YAHOO! Brand Awards from 2016 to 2022.

#### 2. Development and Patenting of Key Materials

Developing ingredients for health and beauty products is one of the main focuses of the R&D team at Grape King Bio. We have developed the following materials:

- Cordyceps cicadae mycelium > Protect renal functions and prevents dry eye syndrome
- Hericium erinaceus mycelium > Rich in Erinacine A, which can trigger the generation of nerve growth factor (NGF) in glial cells
- Tiger milk mushroom (Lignosus rhinoceros), Malaysia’s national treasure > Prevent asthma
- Lepista nuda mycelium > Produces antioxidant Ergothionione

#### Grape King Bio continues to conduct analyses and tests regarding the efficacy of our developed materials:

- ✓ We screen lactic acid bacteria strains with properties to delay aging, enhance hair growth, improve fertility functions, reduce addictions, and prevent depression
- ✓ We continue to analyze Cordyceps cicadae mechanisms for reducing intraocular pressure, fighting kidney damage, and alleviating allergy effects
- ✓ We continue to analyze and research Hericium erinaceus properties for preventing premenstrual syndrome, neural damage regeneration, anti-inflammation functions, improving depression and sleep, preventing degenerative joint diseases, and protecting against brain ischemia
- ✓ Analyze effects of Phellinus linteus in enhancing sports performance and improving sarcopenia

In 2022, we researched and upgraded four major technologies, applied new technologies to R&D of new formulations, and developed different product formulations to meet various customer demands, including:

- Soft capsules
- Gels
- Super mixer granulation (SMG)
- Fluid bed granulation

Our Biotech Research Institute also accepts OEM and ODM requests, including work on:

- Fungi materials (such as Ganoderma lucidum, Agaricus blazei, Antrodia cinnamomea, Cordyceps sinensis, Coriolus versicolor, and others)
- Probiotics (such as cocci, bacilli, bifidobacterium, saccharomyces, and clostridium)
- Other edible microbes, enzymes, and metabolites



Grape King Bio is committed to material development, efficacy verification, and process improvements that strengthen our core technologies. We currently hold 158 patents; we applied for 34 patents in 2022 and received approval for 27.

Patents obtained by Grape King Bio in 2022			
	Patent Title	Country	Patent Number
1	Use of lignosus rhinocerus mycelia active substance for manufacturing an antiviral composition	Taiwan	I754929
2	Bioactive components of phellinus linteus mycelia, method of producing the same and use in preparation antiviral composition including the same	Taiwan	I755725
3	Lactobacillus fermentum GKF3, composition containing the same and its use for improving psychataxia	USA	US 11,253,556 B2
4	Use of Lactobacillus reuteri GKR1 for preparing composition of reducing uric acid	Japan	7004774
5	Chocolate products containing probiotics	Vietnam	No. 2820
6	Use of lactic acid bacteria for manufacturing and antiviral composition	Taiwan	I757735
7	Method and composition for preventing, treating or relieving bone diseases	Singapore	10201903639T
8	Multilayer antioxidant coating lactic acid bacteria (Maoc-Lab) microencapsule	China	ZL 2020 2 3046313.0
9	Use of cordyceps cicadae mycelium active substances for manufacturing a composition for preventing, postponing or treating changes in the anterior/posterior chamber volume, vitreous humour, and/or retinal detachment	Malaysia	MY-190815-A
10	Lactobacillus fermentum GKF3, composition containing the same and its use for improving psychataxia	China	ZL 2019 1 1059860.1
11	An active substance of Lactobacillus plantarum GKM3, a composition comprising thereof and its use for promoting longevity	Taiwan	I760548
12	Method for manufacturing and the use of Lignosus rhinocerus mycelia active substance for preventing and/or ameliorating lung injury	Singapore	10201912777U
13	Method of manufacturing and the use of Cordyceps cicadae mycelia active substance for preventing and/or improving acute lung injury	China	ZL 2019 1 0211121.3

14	A lactobacillus plantarum, composition, culturing method and use of decrease uric acid, improvement of allergy and/or decrease blood sugar	China	ZL 2017 1 1372565.2
15	Lactobacillus germ and its exclusion body fat reduce hepatomegaly and anti-inflammatory purposes	China	ZL 2017 1 1372954.5
16	Lactobacillus germ and its reducing blood lipid, liver function index, uric acid and anti-inflammatory purposes	China	ZL 2017 1 1372555.9
17	An active substance of Bifidobacterium lactis GKK2, a composition comprising thereof and its use for promoting longevity	Japan	7060555
18	Use of Phellinus linteus for preparing composition of improving sarcopenia	Taiwan	I766394
19	Edible solution delivery device	Taiwan	M625687
20	Use of preparing a pharmaceutical composition for improving myelination of central nervous system by Hericium erinaceus mycelia extract	Taiwan	I771561
21	Use of morchella active substance (sarcopenia)	Taiwan	I722922
22	Method for manufacturing and the use of Lignosus rhinocerus mycelia active substance for preventing and/or ameliorating lung injury	Taiwan	I774903
23	Method of manufacturing and the use of Cordyceps cicadae mycelia active substance for preventing and/or improving acute lung injury	Canada	Pending
24	An active substance of Bifidobacterium lactis GKK2, a composition comprising thereof and its use for promoting longevity	Malaysia	Pending
25	A use of manufacturing a composition of Lactobacillus paracasei GKS6 for preventing and treating the renal function impairment	Taiwan	I780460
26	A Bifidobacterium lactis GKK2, a composition comprising thereof and its use for improving allergic asthma	Malaysia	MY-192498-A
27	An active substance of Lactobacillus paracasei GKS6, a composition comprising thereof and its use for promoting longevity	Singapore	10201907552T
28	Probiotic composition for stabilizing bladder pressure and reducing frequent urination	Taiwan	Pending
29	Use of Pediococcus pentosaceus GKP4 for preparing oral composition of improving sarcopenia	Taiwan	I783780
30	An active substance of Lactobacillus paracasei GKS6, a composition comprising thereof and its use for promoting longevity	Japan	Pending

31	Use of morchella active substance to improve sarcopenia	Japan	Pending
32	A composition for angiogenesis inhibition and its use	Taiwan	I782862
33	Method for manufacturing and the use of Lignosus rhinocerus mycelia active substance for preventing and/or ameliorating lung injury	Malaysia	Pending
34	Use of Cordyceps cicadae mycelia active substance for preventing or curing macular degeneration	Taiwan	Pending

### 3.1.2 Product Development and Customized Services

Along with the rise of civilization diseases, low birth rates, and other social trends, demographic structures are gradually moving to middle-aged and aged societies. Consumers are becoming more health aware, and pay more attention to food characteristics and health impacts. Therefore, nutritional content and functionality have also become relatively more important. Grape King Bio established an Innovation and Research Center (IRC) in 2016, gathering together elites from the product development, product planning, material development, quality control, and quality assurance departments. The IRC uses specialized fermentation technologies developed by the Biotech Research Center and assesses differentiated ingredients and raw materials from external sources to develop unique formulations in hopes of developing delicious and functional health foods so that customers can replenish nutrients and consume ingredients with specific functions by eating health foods.

Additionally, the Grape King online store has established a customer service center which compiles consumer feedback through phone or email, big data analysis, and information from market research companies. We also receive information on market needs through our marketing channels and distributors. For example, for products currently in development, we identify appropriate product types, specifications, and marketing strategies through actual market information provided by distributors, so that our products can better align with market needs.

**IRC internal R&D team and responsibilities**

<ol style="list-style-type: none"> <li>1. Development of brand and OEM products</li> <li>2. Development of analytical methods</li> <li>3. Production trial runs for new products</li> <li>4. Research on dosage forms and new technologies</li> </ol>	<ol style="list-style-type: none"> <li>5. Application for health food certifications and SNQ (Symbol of National Quality) certifications</li> <li>6. Product efficacy trials (animal and human trials are outsourced) and stability trials</li> <li>7. Formulation of specifications for raw materials and finished products</li> <li>8. Product maintenance and raw material inventory management</li> </ol>
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Note: For more information on our patents, please refer to our company website: <https://www.grapeking.com.tw/tw/rd/patent-paper/patent>

## 1. Development of Physical Products

We launched our “new dosage form development” services in 2017. Development of new dosage forms is not limited to the production machines currently in factories, and largely include: the dropping pill category, the jelly (gel) category, the soft capsule category, the tablet (double-layer and chewable) category, and the household goods (shampoo and soap) category. Our R&D team utilizes the fermentation technologies at our Biotech Research Institute to satisfy the demands of different customer groups and nutritional needs as “A health expert for the entire family.” Our products can be divided into 9 main categories. We developed a total of 290 products in 2022.

Product	Chinese Herbal Range	Health Maintenance Range	Female Beauty Range	Children Healthcare Range	Energy Drink Range	Others	Tourist Factory	Pet Foods	External Products
Description	We use Chinese herbal formulations and our professional capabilities in fungal fermentation to develop comprehensive maintenance products for our consumers	These products maintain normal physiological functions and help to satisfy the requirements of different age groups and nutritional needs, such as for gastrointestinal systems, bones and joints, vision, and cardiovascular health, which are all popular needs. Our lactic acid products are also suitable for customers of all ages.	All women naturally strive to be beautiful, and how to simply and quickly obtain necessary nutrients as part of a busy lifestyle is an issue that concerns all female consumers	All parents hope their babies can grow up healthy. These products have been developed to satisfy the nutritional requirements of pre-school aged children.	“Drink up ComeBest!” is a classic advertising slogan at Grape King Bio. This range of energy drinks can help to replenish energy and comes in multiple flavors.	Dietary imbalances are a part of modern lifestyles. Many people consume high-calorie foods but still feel hungry. We therefore provide nutrients that cater to customer needs, such as increasing satiety.	The Grape King Museum Factory was established in 2017 and helps to develop popular Grape King Bio products displayed within the museum, attracting consumers, and providing accessible and convenient foods.	Grape King Bio is adapting to the vast pet market and has developed pet health, beauty, and health food products to take good care of these cuddly pets.	We developed beauty products for high-level customers to expand the depth and breadth of our consumer groups.
Product Product Examples	<ul style="list-style-type: none"> <li>San Zhi Capsules</li> <li>Coriolus versicolor capsules</li> <li>Ginseng King Essential Drink</li> <li>Clam Essence Antrodia capsules</li> <li>Grape King Bio Double Effect Antrodia King</li> <li>Grape King Bio Double Effect Ganoderma King</li> </ul>	<ul style="list-style-type: none"> <li>Grape King Bio krill oil</li> <li>Three Hypers Capsules</li> <li>Grape King Bio Marigold Lutein Extract Jelly</li> <li>Six Probiotic Capsule</li> <li>Nanto Monascus King</li> <li>Key Maintenance Capsules</li> </ul>	<ul style="list-style-type: none"> <li>Collagen Probiotic High-Fiber Drink</li> <li>Q10 Cranberry Capsules</li> <li>Crystal Gel</li> <li>Pomegranate Collagen Drink</li> <li>Whitening &amp; Sleep Drink</li> <li>Collagen Skin Brightening Powder Pack</li> </ul>	<ul style="list-style-type: none"> <li>Probiotic gummy candies for kids</li> <li>Royal jelly gummy candies for kids</li> <li>Mixed fruit gummy candies for kids</li> <li>Bone growth gummy candies</li> </ul>	<ul style="list-style-type: none"> <li>Grape King Bio Kombucha Double Fiber Drink</li> <li>Sparkling Water with Lactic Acid</li> <li>Lutein Eye Protection Drink</li> <li>Collagen Drink</li> <li>Sleep-Inducing Drink</li> <li>Hair Nourishment Drink</li> </ul>	<ul style="list-style-type: none"> <li>Berry Capsules</li> <li>Sleep-Inducing Capsules</li> <li>Feminine Maintenance Powder Pack</li> <li>Phytosterols</li> <li>Weight Loss Packs</li> <li>Lozenges</li> <li>Water and Cellulite Reduction</li> </ul>		<ul style="list-style-type: none"> <li>Pet Digestion Probiotics</li> <li>Fish Oil Powder for Cats</li> <li>Probiotics Granules for Cats</li> <li>Dog (Oral Health Powder)</li> <li>Dog (Bone and Joint Powder)</li> <li>Cat (Mood Health Powder)</li> </ul>	<ul style="list-style-type: none"> <li>Hyaluronic Acid Moisturizing Essence</li> <li>Placenta Revitalizing Essence</li> <li>Ginkgo Gromwell Essential Oil</li> <li>Placenta Revitalizing &amp; Tightening Essence</li> <li>Blue Copper Peptide Eye Cream</li> <li>Moisturizing and Soothing Essence Cream</li> </ul>
New products developed in 2022	13	64	33	9	56	91	0	17	7

In 2022, Grape King Bio not only conducted routine product development processes, but also developed products along two main focuses:

(1) Technical improvements for existing products; (2) Proposals for new products and development of samples for new dosage forms

Due to fluctuating epidemic conditions, we decided not to host an on-site conference for our new products in 2022, instead providing gift bags to all senior executives so they could experience the products and fill out questionnaires. Our product developments are customized for client needs. If clients wish to develop products aligned with market needs, we fully collaborate with them on design and production. We currently do not prohibit use of GMO materials in our products, but select specific materials if requested to do so by our clients. With regard to documentation and certification, we provide raw material supplier inspection documents to prove that we used no GMO raw materials.

## 2. Cross-Industry Collaborations

We formed a strategic partnership with the Uni-President Group and expanded our domestic and overseas channels, officially bringing our healthy snack foods to the mass market. We utilized Uni-President’s expertise in FMCG foods to refine our food safety structures and systems.

## 3. Online Channels

Our direct sales online platform provided contact-free shopping opportunities online during the pandemic. In future, we plan to provide comprehensive and professional health suggestions, gradually strengthen our relationship with our members, and work to become an all-round health care expert.

## 4. Customized Formulation Designs and OEM Services

Apart from developing our own products, our product development team provides comprehensive ODM/OEM services and can customize products and formulations to fit client requirements. We can provide tailored and innovative formulations in a wide range of dosage forms and supply customized and innovative products to our clients. Apart from domestic channels, we have also begun to actively develop overseas markets in recent years. Our ODM/OEM services provide a variety of product formulations and packaging, including glass bottles, PKL combibloc/aluminum drinks packaging, aluminum packaging (flake, powder, and granule), capsules, and pouches (liquid formulations and jelly drinks).and nutritional needs as “A health expert for the entire family.” Our products can be divided into 9 main categories. We developed a total of 290 products in 2022.



## One-Stop Service Platform

Grape King Bio has established a one-stop service OEM platform which provides integrated services from importing of upstream patented raw materials, cross-category production lines, and back-end packaging of finished products. We provide OEM services for many products such as health foods, beauty drinks, functional drinks, and PKL aluminum foil-packaged beverages.



## Grape King Bio One-Stop Service

### Professional Consulting Services

Our R&D team provide professional guidance on raw materials and products based on client market plans and product needs. We also provide our clients with timely after-sales consulting service such as guidance on product health and nutritional information and guidance on relevant documentation for client health food products.

### COLUMN

## Grape King Bio Fungi Technologies Targeting Opportunities in the Plant-Based Meat Market



Vegetarianism has become a global trend, and the current vegetarian population in Taiwan has exceeded 3 million people, accounting for 13% of the total population, the second highest in the world. Emerging dietary patterns have triggered a rise in the plant-based meat/meat substitutes market, not only becoming a trend in vegetarian circles, but also attracting many curious carnivores. Consumption volumes are gradually rising at a rate of 15% per year and have attracted entry by many domestic and foreign companies. Grape King Bio has accumulated 30 years of experience in the production of Ganoderma, Cordyceps sinensis, Antrodia cinnamomea, Hericium erinaceus, and other fungal mycelium. We have the largest cutting-edge fermentation production capacity in Taiwan and are targeting market opportunities in plant-based meats.

Taiwan has the second highest vegetarian population in the world. In the past, many vegetarian meats were made using soybean protein. However, Westerners dislike the taste of soybeans, and therefore made meats using peas and wheat protein. During the production process, plant proteins have to be purified, then crushed to create a fiber-like texture. Large amounts of seasonings are used to cover up plant tastes, violating global clean label trends. In recent years, various nations have replaced animal protein with fungal protein to create more healthy and environmentally friendly foods. Previous studies have shown that fungal protein is more beneficial for muscle growth compared to whey protein, and also does not contain cholesterol or trans fats. Steaks made from fungal protein contain one-tenth the amount of fat in a steak made from ground meat, but twice the protein of raw peas and 50% more protein than tofu.

Currently, development of fungal protein requires aseptic culturing in large-scale (50-ton) fermentation tanks. Fungal protein has simple nutritional requirements and can be generated in two days using only inorganic salt and sucrose. Furthermore, mycelium take on the texture of shredded meat without the need for crushing at high temperatures. This not only aligns better with the original aim of plant-based meats (reduce animal feeding, reduce greenhouse effects, and provide alternative proteins for increased populations), but also prevents losses and crop competitions from planting and purifying plant proteins. The American company Meati Foods will launch new plant-based beef and chicken products made from fungal mycelium this summer. Each helping of these fungal meat products contain 50% protein and 50% dietary fiber, as well as half of the recommended daily zinc content required by humans, aiming to provide consumers with a refreshing meat-eating experience.

Grape King Bio uses advanced fermentation technologies and has mastered the same technologies used in the UK to generate *Fusarium venenatum* mycelium. These technologies adhere to domestic regulations, and we expect to commence commercial production at a scale of 50 tons, using special centrifugal technology to obtain mycelium paste which can be directly used to produce artificial meat, reducing the costs required by drying and water soaking processes, making it more competitive. We look forward to working with domestic plant-based meat companies and directly providing them with mycelium needed to make differentiated products, and also do not rule out the possibility of producing vegetarian steaks and meat cubes for sale under private label brands.



## 3.2 Industry-Academia Collaborations

We work closely with schools. In terms of professional technologies, we have a long development history and advanced technologies, making us a key target for industry-academia collaborations. We continue to build connections and work on projects with schools, participate in various speeches and academic presentations, and also provide product testing services.

We possess a variety of fermentation technologies, and are one of the top industrial biotech sites for academic visits by students from related fields. We build links between theoretical knowledge and practical applications so students can apply what they have learned. Over the past three years, our factories have hosted 67 visits for 2,464 people. We hope our efforts can bridge industrial-academic technological gaps, develop innovative technologies, and cultivate key talents for the future.

### 1. Invested in industry-academia research collaborations, working with colleges and universities

Grape King Bio actively promotes industry-academia collaborations and links new products with professional research of professors from universities and colleges around Taiwan so as to enhance our R&D momentum, verify product efficacy, speed industrial upgrading, and accelerate commercialization and marketization of university research.

Completed safety tests for the following products: Beauty Drink, Bone and Joint King

Completed efficacy tests for the following products: Beauty Drink, Bai Ke Sz capsule, Bone and Joint King (2018)

### 2. Obtained biotech industry projects

Grape King Bio has made great contributions in furthering development of the national biotechnology industry. The Executive Yuan Ministry of Economic Affairs guides the industry by accepting applications for several large-scale projects each year. Over the past ten years, Grape King Bio has applied for and completed a total of nine projects, working with many science and technology colleges to jointly develop many new products and conduct efficacy tests. Total investments amounted to NT\$146 million, and our projects have yielded fruitful results. In addition to supporting the Ministry of Education's talent training programs, we also provide internship opportunities and industry teachers who lecture and serve as visiting directors for various schools. We review various projects for the Ministry of Science and Technology, were invited to present speeches and serve as an evaluation committee member for the Ministry of Economic Affairs, actively supporting these governmental institutes and promoting industry-academia-government exchanges and collaborations.

In 2022, we were invited by the Industrial Technology Research Institute to apply for and execute the Ministry of Economic Affairs Industrial Development Bureau iPAS corporate digital talent cultivation subsidy program, for which we received a subsidy of NT\$3 million to cultivate industrial and corporate transformation food safety personnel, guide students interested in developing careers related to quality assurance in the food industry, enhance our capabilities and pass quality assurance tests for food engineers, and accelerate our progress toward an Industry 4.0 factory. Professional talent from our quality assurance, quality management, R&D, and production units provided one-on-one consultations. We recruited a total of 30 interns from 12 schools, and our student courses all exceeded 380 hours. The average score for student satisfaction surveys exceeded 4.2. Out of these interns, 14 presented their internship achievements as academic posters at the Agricultural Chemical Society of Taiwan and Biotechnology and Biochemical Engineering Society of Taiwan. We awarded 32 Curiosity Awards, 10 interns joined the Taiwan Association for Lactic Acid Bacteria, and 3 interns received letters of recommendation from General Manager Jin-Chu Chen.

### 3. Academic speeches and academic works

The R&D department at Grape King Bio has been invited to speak at industrial, government, and academic institutes. We have provided lectures at more than 100 college departments to share and exchange our more than 20 years of experiences relating to biotechnology and industry development. Over the past three years, we were invited to present 130 lectures at colleges and universities, participated in oral examinations of more than 100 graduate and doctoral dissertations, participated in curriculum planning or departmental development of more than 10 university departments, and evaluated more than 10 university departments. We also publish our research results in journals or at conferences. In 2022, we published 37 journal papers, 6 conference papers, and 28 conference posters. In 2022, we chaired the Taiwan Association for Lactic Acid Bacteria, and promoted research, information exchanges, and industrial applications relating to lactic acid bacteria.



### 4. Provided product testing services

We are renowned for our fermentation technologies, and have 80 fermentation tanks in our factories. Apart from supplying key raw materials, we also provide fermentation testing and commercial production platform services to external academic and industrial institutes, which enable us to study different microorganisms, strengthen our research, and build our expertise while assessing appropriate materials for technological transfers. We work with more than 20 college departments, accelerate industry-academia collaborations, and speed industrialization and mass production of academic achievements to enhance our international competitiveness.



### 3.3 Sustainable Products and Services

Grape King Bio continues contributing to society and the environment through product development. We hope that every one of our products can be provided to the market at affordable prices to bring nutritional value to our consumers. We also continue to improve our product packaging. At present many of our products use lightweight packaging materials to reduce resource consumption. Currently, we have implemented a bottle recycling program for more than 30 products. Recycled bottles are transferred to waste treatment companies for decomposition into pellets for further use. We hope that development of sustainable products can help Grape King Bio shoulder its brand responsibilities and provide better products to our consumers.

Grape King Bio is committed to animal-friendly testing policies and we strive to reduce our number of animal experiments. At present, the majority of our experiments are conducted through cell testing for the purpose of obtaining reliable data, and we work to avoid testing on live animals within the scope of regulatory compliance to reduce the discomfort and pain suffered by animals. We hope that these actions enable us to co-exist with the earth as well as reduce emotional burdens for animal lovers when buying our products.

Additionally, we care about the health of vulnerable groups and have established a Tourist Factory in Taoyuan to give back to the community and the public. We provide affordable products so that those in need can purchase Grape King Bio health products at economical prices.



#### 3.3.1 Product Nutrition

The nutrients contained in Grape King Bio products have all been designed according to product positioning and customer requirements. The following are some examples of our most popular products:

Product	Comebest Range	PowerBOMB Energy Drink	Ginseng-Clam Plus B	Move Ezii Powder Granules	Imperial Collagen Essence	Tian Qi Maca Essential Drink	Tian Qi Ling Zhi Essential Drink
Product Image							
Target Customers	Blue-collar workers, white-collar workers	Students, white-collar workers	Customers lacking B vitamins and customers wishing to enhance energy metabolism efficiency	Customers lacking calcium	Customers looking to enhance feminine beauty	Customers who wish to enhance physical endurance	Customers who wish to enhance their vitality and physical strength
Nutrients	Inositol, taurine, caffeine, B vitamins, amino acids, minerals	Taurine, caffeine, inositol, Vitamin C, B vitamins	B vitamins, Corbicula fluminea extract, ginseng powder	Undenatured collagen type II, Vitamin D3, calcium, Vitamin K2, soy isoflavones, rooster comb extract (including hyaluronic acid), mogroside extract	Collagen, Vitamin C, pearl powder, yeast extract	Maca extract (6X concentrated), Cnidium monnieri extract, zinc gluconate, L-arginine, guarana extract, tian qi flower and leaf extract, ginseng extract, nicotinamide	Liquid fermented Ganoderma lucidum mycelium, Ganoderma lucidum sporocarp extract
Effects	Boosts energy (only Gold Comebest drinks), nutrient supplementation	Boosts energy, nutrient supplementation	Rapidly boosts physical strength and provides foundational enhancement of vitality	Helps teeth and bone development and maintains agility	Beauty benefits	Boosts physical endurance	Enhance vitality and provides nourishment

Due to customer health considerations, Grape King Bio has reduced sugar usage in some products starting at the product design stages. For example, we use erythritol in Gold Combest Energy Drink to reduce sugar content, and Bone and Joint King uses mogroside extract as a natural sweetener. Additionally, some of our ODM products are made from organic materials with no artificial chemicals, and we are striving to bring more natural and healthy products to our consumers.

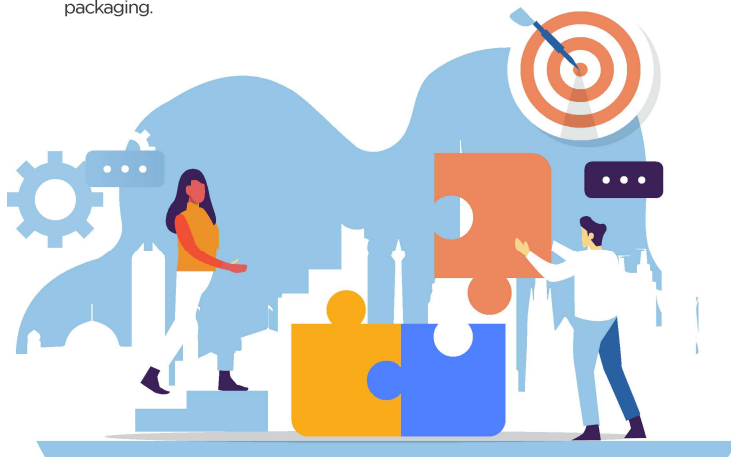
Adding functional ingredients to snack foods is currently a popular trend in foreign markets, so we have designed a variety of snacks, beverages, and instant drinks which include functional ingredients to enhance the health of the public, such as the Super Probiotics Milk Cookie, which provides calcium supplements and helps to maintain digestive function; the Marigold Lutein QQ for Kids helps to maintain visual function through gummy candies.



### 3.3.2 Green Product Packaging and Recycling

Grape King Bio has long been committed to using lightweight packaging made with environmentally friendly materials that help to reduce environmental damage.

1. Lightweight glass bottles: Our Comebest drinks are packaged in beautiful lightweight bottles of uniform thickness. The thickness of our lightweight bottles is only one-half that of traditional glass bottles, and they are also lighter in weight. The material provides better uniformity while maintaining original safety levels. These bottles have significantly reduced not only our glass usage but also the amount of energy needed for transportation. Aluminum cans: Grape King Bio PowerBOMB Energy Drinks are packaged in aluminum cans as aluminum is a 100% recyclable resource that can be recycled and reused multiple times. We will continue to use lightweight materials to make main product containers and reduce the environmental impact of resource mining.
2. Use of environmentally friendly materials: Currently, all of our products with aluminum foil packaging (which account for 30.98% of Pro-Partner revenues) use 100% green paper pulp materials made from FSCTM (Forest Stewardship Council) certified wood materials, ensuring that our paper materials come from legitimate and well-managed forest sources that avoid shifting cultivation and deforestation. Starting in 2019, many Grape King Bio products began using recyclable plastic bottles which could be recovered from consumers and sent to local recycling plants for processing and decomposition into plastic pellets supplied to certified contractors for reuse. We require our contractors to provide tracking information on these plastic pellets to ensure that they can be reused by consumers in other forms. In future, Grape King Bio plans to expand the use of recyclable packaging to other products so as to reduce the environmental impact of product packaging.



### 3.3.3 Innovative Marketing Strategies

In 2022, Taiwan entered the post-pandemic era. Increased public emphasis on immunity, paired with aging societies, lifestyles, and increasing prevalence of chronic diseases, exercise, fitness, self-care, and awareness of other preventive health measures have gained traction, and public lifestyles and consumption habits are gradually changing. Grape King Bio has taken on the role of a health expert. Our professional R&D team developed diverse health products to provide comprehensive care for the public. The current era and growing public awareness of health have resulted in 10% growth for our private label brands.

#### 1. A new take on an enduring classic

Grape King Bio is an industry leader in Taiwan's health food market and has launched many classic bestsellers over the years. In 2022, we enhanced and relaunched our popular classic products. We launched a seasonal and limited edition of our PowerBOMB energy drink in a lychee and sea salt flavor. The trendy packaging featured contrasting pink and blue colors. At the end of the year, we invited SHOU from the popular boyband WOLF(S) to act as our brand ambassador to garner the interest of the younger generation. Our Kombucha Double Fiber Drink received much acclaim in 2021, so we launched a grapefruit and honey flavor this year, which featured a low-sugar, low-calorie formulation

to fulfill consumer health needs. This product was selected as the top functional tea by netizens on the DailyView website, and revenues exceeded NT\$100 million. For those looking to slim down, our Slim Probiotics King capsules were relaunched with better specifications and obtained a health mark; revenues exceeded NT\$1 million shortly after the product was released, a truly impressive achievement.

#### 2. Co-branding to enhance brand value

In recent years, Grape King Bio has actively diversified and created the new HDMO (Healthy Dream and Manufacturing Organization) business model in 2022 so that artists, nutritionists, and fitness trainers looking to work in the health foods industry can work with us to develop products. GKLiFESHINE is a new brand Grape King Bio established for the HDMO business model, which focuses on "participation" and "co-creation" as well as innovative and diverse businesses, demonstrating our commitment to press forward in line with environmental trends. In 2022, we worked with Peien Chien, Angus Hsieh, and Lia Kung to develop several products, bringing health food experts together with leaders from different fields to create synergy, expanding our diversifications through the innovative HDMO business model.

#### 3. Social media work-of-mouth and precision marketing (YouTubers, key opinion leaders, and influencers)

In an era where social and digital media are mainstays, precision marketing and word-of-mouth marketing have become even more important. Grape King Bio targeted this marketing model in 2022, using big data analysis to identify potential audiences for delivering brand information, more effective conversion, and identification of appropriate products. Our advertising efficiency increased by 5 times. Due to the rise of social platforms, our consumers are spending more time on social media. We targeted social media leaders, working on promotions with a large amount of artists and KOLs, and even found popular YouTubers to promote PowerBOMB and Kombucha on videos that garnered millions of views and impressions, as well as created positive reviews for our brand.

COLUMN

## Bottles of Love



We organized the “Bottles of Love” charity event in 2022. The Environmental Protection Administration sent 200 kilograms of recycled bottles for decomposition into reusable plastic pellets in March. This event featured a recycling campaign which utilized and reused empty bottles, helping consumers meet their daily health needs while encouraging them to take environmental actions in their daily lives. The Grape King Bio private label brand “Bottles of Love” event was organized by the “Grape King Bio Health and Vitality Power Center” and the “Virtual Channel Department” as part of our contribution to environmental health.

For this event, consumers voluntarily mailed empty plastic bottles for Grape King Bio products to the “Virtual Channel Department at our Pingzhen Factory” or personally delivered the bottles to the “Grape King Health and Vitality Power Center.” For every three bottles they recycled, consumers received a NT\$100 coupon for use on orders of NT\$1000 on the Grape King online store and Grape King Health and Vitality Power Center. The Grape King Health and Vitality Power Center also provided 20% discounts on handmade snacks to encourage consumer participation. As of 2022, we have collected a total of 11,404 bottles, and will continue to support consumers in recycling, properly utilizing, and reusing these bottles as part of a green and environmental lifestyle.

### Bottles of Love





## 3.4 Customer Service

General Manager of Business Division and Shanghai subsidiary  
**Yuan-Tsung Lin**



“  
*Customer service is an important element for building good relationships with customers. We listen to customer feedback and take action to improve our products and services.*  
”

Vice Division Director of Business Division  
**Chia-Lun Lin**



“  
*Grape King Bio emphasizes customer trust and utilizes optimized customer service processes in hopes of bringing the best consumer experience to our customers.*  
”

Management Approach	Key issue-Customer service	
Policies	Use data analytics and data systems to support and complete personnel training so as to fulfill customer expectations, build customer loyalty through professional services, and enhance customer satisfaction as our customer numbers continue to grow.	
Commitments	Use our heartwarming services and clear procedures to offer customer service experiences that fulfill customer needs and solve customer problems.	
Targets	Short-term	<ul style="list-style-type: none"> <li>• Ensure service quality through customer interviews and satisfaction surveys following phone support, and include these items in evaluation system to smooth service processes</li> <li>• Conduct product refresher training courses led by professional nutritionists to enhance product knowledge</li> <li>• Compile frequently asked customer questions and establish a database to ensure consistency and accuracy of service quality</li> <li>• Implement a comprehensive customer call management service solution to improve service quality and response efficiency of phone support</li> </ul>
	Mid-term	<ul style="list-style-type: none"> <li>• Established a new customer data platform (CDP) database to analyze, track, and manage customer interactions, integrating data from all sources to greatly strengthen marketing efficiency and customer service, achieving personalized communication, facilitating effective understanding of consumer needs, and providing timely marketing solutions which allow us to take advantage of consumer interaction opportunities and manage service quality</li> <li>• Ensure smooth service processes and service quality using satisfaction surveys to regularly assess relevant indicators. Our goal is to increase “complete satisfaction” rates. Our customer service staff participate in training organized by professional institutes each year and obtain related certificates.</li> <li>• Establish standard operating procedures and categorization systems for customer complaints to enhance efficiency of crisis management.</li> <li>• Enhance service value and establish connections with consumers through handwritten birthday letters or calls from nutritionists to establish trust and help consumers feel that they are valued.</li> </ul>
	Long-term	<ul style="list-style-type: none"> <li>• Establish a complete customer service and nutritionist team to respond to customer service queries and provide comprehensive health, diet, and lifestyle recommendations</li> </ul>
Responsibilities	Related internal collaboration units: Legal Office, Quality Assurance Department, Marketing Section, and Finished Products Section	
Resources	Invested in personnel training courses (including external customer service training courses and internal product refresher courses) and use our CRM and CTI systems for customer management and management of support quality. Our systems allow us to compile comprehensive records on customer journeys, customer contacts, and product quality, thereby allowing us to improve customer service experiences and satisfaction.	
Specific performance	<ul style="list-style-type: none"> <li>✓ Conducted post-purchase and post-support satisfaction surveys. In 2022, we optimized our system so we could listen to recordings of calls from dissatisfied customers and correct processing methods in future</li> <li>✓ 2 customer service personnel obtained professional customer service certifications in 2022</li> <li>✓ Continued to update our database of frequently asked questions to include professional responses to customer complaints related to quality management</li> <li>✓ Completed product refresher training courses every 2 months to enhance the professionalism of customer service personnel</li> </ul>	

Grape King Bio helps customers build a better future using our core mission of “Technology, Health, Hope” Our customer service management targets for 2022 were divided into two main categories:

**1. Establish a customer-oriented business philosophy:** Move from product management to customer management, and from transaction management to relationship management. Customer needs, purchasing behaviors, and potential consumption preferences are all precious resources. Therefore, we actively collect comprehensive data from our interactions with consumers to build the core functions required for customer management, and continue to review customer satisfaction indicators and optimize our business processes. Our quantitative and qualitative customer interviews help us to collect customer feedback, which we use to make adjustments.

**2. Accelerate customer service innovations:** We adopt a customer-oriented service concept which not only focuses on customer satisfaction and loyalty enhancement, but also responds to changes in customer needs, including through an increasing number of LINE groups, online responses, and communication management. We continue to incorporate new systems and new service functions to facilitate ease of use and convenient communication and interaction with our customers.

**Investment highlights for 2022:**

We now have more than 140,000 members and continue to enhance customer satisfaction over four aspects, including by hiring professional nurses and nutritionists. We hired 1 new nurse and 1 new nutritionist in 2022 and continue to organize monthly product training hosted by nutritionists to enhance our professionalism and quality. We also established standard procedures for responding to customers, which made it possible for us to effectively categorize and manage customer complaints related to color discrepancies and precipitation of black tea powder in our popular Kombucha products. No customer complaints evolved into serious problems. Categorized management made it possible for us to ensure that customer complaints were being simultaneously reported to related units so preparations could be made in advance, preventing customer complaints from becoming more serious. Our satisfaction surveys found that more than 90% of customers were satisfied with our services. The few dissatisfied customers mainly had complaints relating to product quality, such as slippery bottle caps and color discrepancies in products. We provided explanations to our customers, but product optimizations require longer amounts of time, and our customers were disappointed that we were unable to provide fuller explanations on future adjustments. In future, we will continue to establish customer complaint records in accordance with our standard procedures so that our quality management units can understand these issues and ponder improvement methods, as well as provide fuller explanations even for products that cannot be fully adjusted. We have established a comprehensive Q&A database so that full explanations can be provided to similar questions asked in the future.



**Results of Customer Satisfaction Surveys**

Category	2020 <sup>NOTE1</sup>	2021 <sup>NOTE2</sup>	2022
Very Satisfied	15%	41%	60%
Satisfied	75%	51%	34%
Acceptable	5%	7%	5%
Not Satisfied	5%	1%	1%
Very Dissatisfied	0%	0%	0%

Note 1: Satisfaction figures calculated from interviews conducted with 40 customer members on satisfaction items.  
 Note 2: We collected 1,380 post-purchase responses from our online customers.



### 3.4.1 Customer Service Processes and Innovations in Marketing Strategies

Customer service handling processes at Grape King Bio is categorized as either general queries or customer complaints. We have established dedicated units to support the handling of customer service processes, ensuring that customer feedback can be delivered and resolved in a timely and comprehensive manner.

1. General queries: We provide product consultation services to offer immediate response to consumer queries.
2. Customer complaints: Customer complaints tend to be complex and require professional handling expertise as well as communication and verification of information between departments. In 2022, Grape King Bio adopted a policy to provide progress reports within 4 hours and resolve complaint cases within 24 hours. For complaints involving tests or other complex services, responses are provided at an agreed-upon time. This process ensures that customer complaints can be handled in a timely manner.

Apart from adding a noon segment (12:00-1:00 PM) to our original hotline services so our customers can call in during noon breaks, we have added other customer complaint channels to provide real-time responses in line with the modern era of information technology. Our digital channels include email, Facebook messages, and LINE@ messages. Other responses were provided through general calls



Responsible Unit	Consumer calls	Consumer service center	Sales & Marketing Division	Quality assurance/ R&D	Responsible unit	Sales/finances	Distribution center
Responsible personnel		Customer service hotline personnel Professional nutritionists	Product managers Channel managers Channel personnel	Quality assurance contact Quality assurance inspector Quality assurance section chief	Reviewer Unit manager	Unit personnel	Unit personnel
Handling unit	Product queries Activity queries Product orders	Accept customer calls Record basic consumer information	Product ordering procedures			Invoice creation	Shipping
Items	Complaints and grievances	<ol style="list-style-type: none"> <li>1 Accept preliminary customer calls Record basic consumer information Register complaints Provide immediate resolutions to customer complaints</li> </ol>					
		<ol style="list-style-type: none"> <li>2 Composition problems Appeals are filed when issues cannot be resolved</li> </ol>	<ol style="list-style-type: none"> <li>3 Accept notifications Customer complaint system processes</li> </ol>	<ol style="list-style-type: none"> <li>4 Receipt Quality inspections for customer complaints Confirm inspection details and resolutions</li> </ol>	<ol style="list-style-type: none"> <li>5 Tracking of sample quality Tracking of complaints</li> </ol>	<ol style="list-style-type: none"> <li>6 Returns and refunds Discounts</li> </ol>	<ol style="list-style-type: none"> <li>7 Tallying/receipts and returns</li> </ol>
Conclude cases	<ol style="list-style-type: none"> <li>13 Respond to consumers Close cases</li> </ol>	<ol style="list-style-type: none"> <li>12 Respond to customer service personnel</li> </ol>	<ol style="list-style-type: none"> <li>11 Investigation of administrative documents Verification form for quality abnormalities Investigation reports Respond to manager of business department</li> </ol>	<ol style="list-style-type: none"> <li>10 Review incident context Formulate countermeasures Track improvements Confirm countermeasures Implementation results</li> </ol>	<ol style="list-style-type: none"> <li>9 Notify unit personnel Notify sales units to rescind invoices</li> </ol>	<ol style="list-style-type: none"> <li>8 Notify unit personnel at the first instance after receiving returned products</li> </ol>	



Customer complaints in 2022 mainly included questions on gift usage and product functions, and the remainder of questions were mostly related to privacy issues. We have improved the selection and quality of our gifts in response to customer complaints. This year, we continued to uphold our customer-first principles and maintain smooth communications using a professional and positive attitude to handle customer feedback to ensure that customer complaints can be effectively resolved. We also conduct internal reviews to reduce similar complaints in the future.

Due to increasing awareness of personal information protection measures, we are receiving more and more customer complaints related to personal information usage. Our complex systems made it difficult for us to completely remove personal information immediately after our customers requested cessation of information usage. However, we have added a function to immediately cease usage of personal information on our CTI system so we can instantly stop using customer information after receiving relevant requests. We have also added new settings to our digital newsletters so we can cease using personal information once permissions to use emails have been rejected. We asked our customer service personnel to explain subsequent processes and required times to customers with relevant concerns, so that they would be aware of relevant processes and times, thereby preventing repeated customer complaints.

Additionally, a customer to our physical channel complained about purchasing products with shorter validity periods. The products could not be returned as the customer had already opened and used them. The customer was dissatisfied with our service quality and inconsistencies between rules for physical channels and promotional activities. As physical channels carry many items, it is difficult to change rules for product returns. Therefore, customers seeking assistance from physical channels may believe that we are unwilling to handle their complaints. We have therefore made some adjustments to our handling processes: we continue to adhere to channel rules, but will take over complaints from customers dissatisfied by responses from their original purchase channels.

### 3.4.2 Listening to Customer Opinions

Our short-to-medium term service policies are as follows:

1. Strengthen customer service skills, training, and professional certifications
2. Review all points of contact, including by establishing standard procedures for categorizing customer complaints and a database of common customer complaints. We have implemented comprehensive satisfaction surveys and will continue to improve customer interactions by establishing a professional and sound customer management team over the long term, as well as use data analytics and a professional nutrition team to provide better customer value in our customer management system.

We observed that our customers no longer differentiate between physical and virtual channels as they utilize multiple channels freely. Therefore, understanding customer characteristics and common problems faced by customers of physical channels may help to enhance our customer service quality. Additionally, social media marketing is still one of our main axes in the post-pandemic era. Compared to the saturation of information provided by mainstream media, consumers are more receptive to highly interactive and interesting advertisements on social media. Therefore, we plan to reimagine customer processes to increase flexibility and create new shopping experiences.

To this end, we established a new customer data platform (CDP) database in 2022 to analyze, track, and manage customer interactions, integrating data from all sources to greatly strengthen marketing efficiency and customer service, achieving personalized communication, facilitating effective understanding of consumer needs, and providing timely marketing solutions which allow us to take advantage of consumer interaction opportunities and manage service quality.





### 3.4.3 Protection of Customer Privacy and Rights



Division Director of Management Division  
**Du-Sheng Wang**



*We will incorporate information security management mechanisms into the operating procedures of all departments and appropriately manage intellectual products generated by employees as well as confidential corporate information to establish a solid foundation for growth at Grape King Bio.*



We protect the personal information of our customers and safeguard customer interests using the highest standards. In 2022, our ISO/IEC 27001:2013 certification continued to be valid and we have established an Information Security and Personal Information Management Committee. Our Chairman serves as the highest authority for the Committee, and senior executives from each department serve as committee members.

We have also established the following information security policies:

1	Information security is a key factor for achieving our operational targets. We need to maintain high levels of information security to ensure the confidentiality, integrity, and accessibility.
2	We strive to maintain consistency of information security measures in our operating environments while also balancing account security and information sharing.
3	Our information security management regulations are required to comply with governmental information security laws, regulations, and policy requirements.
4	All information procedures must ensure the security of corporate information to prevent leakage or loss of sensitive and confidential information.
5	We protect our information assets (including software, hardware, network communication facilities, and databases) and adopt appropriate backup and recovery facilities and procedures to prevent damage to information assets that could be caused by unauthorized actions or negligence. We also conduct periodic backup and recovery drills.
6	We have adopted appropriate information security management measures for all of our projects to ensure that related information is well-protected.
7	We conduct regular information security training to strengthen promotion of related policies.

Management Approach	Key issue-Information security management	
<b>Policies</b>	Enhance information security understanding and awareness of all employees	
<b>Commitments</b>	Continue to maintain our ISO27001 Information Security Management System to strengthen corporate information security.	
<b>Targets</b>	Short-term	<ul style="list-style-type: none"> <li>Implement information security inspections as well as technical inspections and repairs</li> <li>Conduct drills of continued corporate operation plans</li> <li>Organize information security training and promotion to strengthen employee awareness</li> </ul>
	Mid-term	<ul style="list-style-type: none"> <li>Integrate information security resources to provide corporate trade secrets and assets</li> <li>Enhance system event log visibility to speed responses</li> </ul>
	Long-term	<ul style="list-style-type: none"> <li>Establish situation room platform</li> <li>Continue to improve and refine sustainable governance in accordance with the three elements of CIA information security processes</li> </ul>
<b>Responsibilities</b>	Total	
<b>Resources</b>	<ul style="list-style-type: none"> <li>Manpower: 3 (Information and Communication Security Department)</li> <li>Remote cloud backups: 156,000</li> <li>Replacement and maintenance of firewalls: 3.2 million</li> <li>Endpoint management system: 750,000</li> <li>Server procurement: 800,000</li> <li>Consultant fees: 166,000</li> </ul>	<ul style="list-style-type: none"> <li>External verification fees: 85,000</li> <li>Backup authorizations: 285,000</li> <li>Virus protection system: 218,000</li> <li>A total of 5.66 million. Systems: Virus protection, endpoint management system</li> <li>Equipment: Servers</li> </ul>
<b>Specific performance</b>	<ul style="list-style-type: none"> <li>✓ Certification, authorization expenses, and equipment investments came to NT\$5.66 million</li> <li>✓ Periodic internal and external information security audits</li> <li>✓ Non-periodic information security disseminations and 3 email social engineering drills to strengthen employee responses and awareness of information security risks</li> <li>✓ One cloud remote backup and recovery test</li> <li>✓ Convened 1 Information and Personal Information Security Committee meeting</li> </ul>	

No complaints concerning breaches of customer privacy and losses of customer data occurred in 2022. Other protection measures include the following:

1. Permission for use of personal information for our Grape King online store was upgraded so that all customers have to agree to relevant permissions before we can use their personal information. We use the most rigorous means to ensure that our customers can agree to and understand the regulations for subsequent use of personal information.
2. We prohibit our internal personnel from attaching files containing personal information to emails and instead apply restrictions on file access so that only authorized personnel can access folders containing personal information so as to strictly control the flow of personal information within our company.
3. We periodically change account information and passwords to improve login and access.

