

SRI LANKA FOOD PROCESSORS ASSOCIATION (SLFPA)

# FOOD FOR THOUGHT

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**NEWSLETTER** Excellence and World Class Issue - 33  
Christmas Edition - 2024



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## FOOD FOR THOUGHT NEWSLETTER

Issue - 33 Christmas Edition - 2024

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# PRESIDENT'S MESSAGE



It's with pleasure I post this message to the year-end edition of the News Letter of SLFPA. As we are nearing the year end of 2024, I wish to congratulate the Editorial Committee, fellow members of the EXCO and the immediate Past President for another newsletter of higher standard, once again!

I am pleased to report to you of the current progress of our Association despite many challenges faced in the recent past. It would not have been possible, if not for the unstinted support received from the membership.

We will have a busy schedule in the New Year with the imposition of few Regulations under the Food Act scheduled to be implemented in January 2025. Due to the far reaching effects on the Industry, SLFPA together with other Institutions and Chambers campaigned for additional time to comply with these regulations.

The EPR Law to be implemented in the New Year also would present serious challenges to the medium to micro scale Food Processors & stakeholders. We along with Sri Lanka Institute of Packaging conducted a forum to educate the industrialists on this law and how best to manage it within their industry. We hope to continue with such programs in the future too.

Since our association is much committed to uphold general Food Safety, we have planned a program aimed at enhancing the capabilities of food handlers across the island, in collaboration with the Ministry of Industries and the Food Control Administration Unit of the Ministry of Health. The proposal we submitted to MOI has been approved, and we are now waiting to receive the formal letter of confirmation from the Ministry of Health prior to rollout the program Island wide. We have scheduled to launch to the program commencing Galle district.

World Food Day 2024 was commemorated with a forum, organized in association with IFSTSL and Food and Agriculture Organization (FAO) on the theme "Right to Safe Food for a Better Life and Future", to enlighten our members & general public on importance of food safety.

We appreciate our technical-arm, the Institute of Food Science and Technology Sri Lanka (IFSTSL) for organizing relevant technical session for the betterment of Food Industry. Bridging the gap between academia and industry stakeholders seems essential for knowledge sharing and standards enhancement.

The SLFPA has historically facilitated training and knowledge-sharing forums to elevate the standards of Small and Medium-sized Enterprises (SMEs). We are currently seeking partnerships with NGOs and donor agencies to secure funding and sustain these Initiatives Island wide.

I am proud to mention that we were able to conclude the Pro Food / Pro Pack exhibition which is the flagship event in our calendar on a very successful note. This year we added few new concepts such as "The Knowledge Hub" & "Innovative Food Fiesta" to add more vigor to the event. With some suggestions received from our EXCO & members, we are hoping to improve on these concepts at the next show.

Further we held our Annual General Meeting in October at Waters Edge, Battaramulla and it was very well represented by our Members. We managed to get the Economist Mr. Shiran Fernando of Ceylon Chamber of Commerce, to deliver the key note address.

It is really unfortunate that we could not hold the Annual Cricket carnival this year. Reluctantly though we had to postpone it for the next year due to prolonged bad weather conditions prevailed in the country.

I am happy to report that we have finally decided to invest in a property in Colombo to put up a building to house our Secretariat and other facilities with a futuristic view.

To conclude I want to thank the EXCO, the Editorial Committee and the advertisers who contributed to publishing this newsletter.

On behalf SLFPA, I wish each & every one of you a Merry Christmas & a very Prosperous 2025.

**Thusith Wijesinghe**  
**President – Sri Lanka Food Processors Association**



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# Turning Waste into Wealth

## Embracing a Circular Economy for a Healthier Future



In today's world, the impact of waste has gone far beyond environmental degradation, posing significant health risks to communities everywhere. Every day, countless amounts of waste—especially plastic—are discarded without a second thought, accumulating in landfills, streets, and waterways. Beyond being an eyesore, unmanaged waste becomes a breeding ground for diseases like typhoid, hepatitis, and skin infections, affecting millions. But there's a sustainable solution on the horizon: the circular economy. This innovative approach can transform waste into resources, creating a cleaner environment and a healthier community.

### The Growing Crisis of Plastic Waste

Plastics are among the most persistent waste materials, lasting centuries in the environment without decomposing. Across communities, millions of plastic bags, bottles, wrappers, and containers are discarded daily, adding up to staggering quantities each month. For example:

- 2 million LDPE plastic bags are discarded daily, adding up to around 6,000 to 14,000 kg of LDPE waste every day.
- Nearly 1.2 million kg of PET bottles end up in waste streams monthly.
- About 35 to 50 million small yogurt and ice cream cups—equivalent to approximately 175,000 kg of HIPS plastic—are thrown away every month.

Such waste not only clutters our surroundings but also clogs drains, pollutes water bodies, and endangers wildlife. Additionally, it discharges CO<sub>2</sub> and methane gas, which are harmful to breathe and contribute to global warming. Without immediate action, plastic waste will continue to threaten ecosystems and public health.

### The Circular Economy Solution

The circular economy model offers a promising alternative, focusing on reducing waste by keeping materials in continuous use through recycling and re-manufacturing. Instead of dumping plastic waste into landfills or incinerating it, the circular economy emphasizes a process where waste is converted back into usable products, benefiting both the economy and the environment. By turning waste into new products, we reduce the need for raw materials and decrease the strain on natural resources.

### How Plastic Recycling Works

Effective plastic recycling involves several structured steps to ensure that the resulting material is safe, clean, and reusable. Here's an overview of the recycling process:

1. **Sorting:** Plastics need to be sorted by type and density. For example, polyethylene (used in shopping bags) and polypropylene (used in food containers) have similar densities and can be processed together. Meanwhile, denser plastics like high-impact polystyrene (HIPS) and polyethylene terephthalate (PET) must be separated for specific processing. Each



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type of plastic must be washed and pelletized separately so that the final pellets can be used. For example, polythene shopping bags need to be washed and pelletized separately to make new bags.

2. **Cleaning:** Once sorted, plastics are meticulously cleaned to remove dirt and contaminants. Unwashed or poorly cleaned plastics cannot be reused effectively, as contamination affects the quality of recycled products.
3. **Cutting and Flaking:** Plastics are cut into small flakes, typically 10–15 mm long, allowing them to be thoroughly washed in proper long washing plants and then processed into high-quality pellets. The different plastics are pelletized separately in different pelletizers. LDPE and PP can be processed in the same pelletizer, but at different times. Similarly, PET is pelletized separately.
4. **Pelletizing:** These pellets can then be used as raw materials for manufacturing new products.

### **Transforming Waste into Usable Resources**

After cleaning and processing, recycled plastics are ready for new applications. Here's how different types of recycled plastics can be used:

- **PE Shopping Bags:** Recycled bags can be converted into new shopping or garbage bags, reducing the demand for fresh polyethylene.
- **HDPE Chemical Bottles:** These can be transformed into new bottles, helping to preserve resources.
- **HIPS Containers:** Used yogurt cups, for example, can be repurposed into non-food containers like hangers or even exported, generating revenue.
- **PP Biscuit Wrappers and Food Containers:** These can be recycled into items like garbage bins and chairs.
- **PET Bottles:** Recycled PET bottles can be turned back into new bottles, conserving foreign exchange by reducing the need for imports. This will be done in special machinery that is FDA-approved for converting to new bottles (B2B).

By following these steps, we can transform discarded plastic into a valuable resource, lowering production costs and conserving foreign currency by reducing imports of new materials.

### **The Benefits of a Circular Economy**

The circular economy not only addresses environmental and health risks but also offers significant economic benefits:

- **Environmental Benefits:** Recycling reduces the volume of waste in landfills, lowers greenhouse gas emissions, and minimizes the pollution of our oceans and landscapes.
- **Health Benefits:** Reducing waste helps decrease the spread of diseases linked to poor waste management, improving public health.
- **Economic Impact:** Recycling promotes job creation in the waste management sector and lowers costs for industries relying on raw materials, supporting local economies. Proper recycling also results in significant savings in foreign exchange used for importing new raw materials.

### **A Call to Action**

Embracing a circular economy requires collective effort. From policymakers supporting recycling initiatives to individuals sorting their waste at home, every action counts. By promoting waste separation and supporting recycling, we can shift to a model that treats waste as a valuable resource rather than a burden.

The journey to a sustainable future starts with each of us. Let's take action to reduce, reuse, and recycle, turning waste into wealth and paving the way for a healthier, cleaner tomorrow. Although there is a lot of legislation, such as environmental approvals, that must be navigated to set up recycling plants, authorities are aware of the need to recycle waste plastic and are likely to support these ventures.



**Michael Perera**

*Past President of Sri Lanka Institute of Packaging*

# Fresh Water FISH

**as a protein source for Sri Lankans**  
*the urgent need for State attention*



## Freshwater fish as a nutritious food

Fish is consumed throughout the world for nutritional benefits such as proteins, essential fatty acids, iodine, vitamin D, zinc and calcium. Fish is an ideal food item which could help reduce the protein energy malnutrition problem in the country. Sri Lanka being an island nation, there is an abundant catch of marine fish available for consumption. Fish and fish products are also imported. However, the consumption of freshwater fish is not happening at a satisfactory level, compared to marine fish, despite the fact that freshwater fish is available at a comparative less cost. The objective of this article is to discuss the challenges faced by freshwater fishing industry, and the need to promote this industry for the greater national interest.

of today, the majority of the catch is Tilapia (60%), followed by carp (20%). Some of the well-known fresh water fish types are Eel (ආඳා), Snake head fish (ලූලා), Magura (මගුරා), Grass carp (තණකොළ කාපයා), Weli gowwa (වැලිගොව්වා), Wew salaya (වැව් සාලයා), Hirikanaya (හිරිකනායා), Binthulla (බින්තුල්ලා), Kokassa (කොකස්සා), Kawayiyya (කාවයිියා), Walaya (වලයා), Thilapiya (තිලාපියා), Mal koralia (මල් කොරලියා), Angutta (ආංගුට්ටා), Pethiya (පෙතියා) and Carp (කාපයා) [see Figure 2 ]. Production quantities of some of the inland fish from 2013 to 2018 are shown in Figure 3.

## Is the freshwater fishing industry successful?

Sri Lanka has approx. 262,000 hectares of freshwater bodies, but only about 7.6% of this is used for freshwater fishing industry. There is much more potential to use inland water bodies for fishing industry, thereby supporting the nutrition of people, generation of income and job opportunities. In 2018, freshwater fishing industry contributed approx 17% to the total fish industry in the country. Ampara, Anuradhapura and Pollonnaruwa districts contribute to the majority of inland fishing industry, along with a few reservoirs in the wet zone and the hill country. Some of the significant freshwater resources in the country are Balalu oya, Kala wewa, Maha wilachchiya, Maduru oya, Hambanthota wewa, Mahakanadara wewa, Hururu wewa, Nuwara wewa, Udawalawa reservoir, Manakkattiya etc (see Figure 1).



Figure 2.  
Thiapiya, Eel, Loola and Carp - Source: Google search



Figure 1. Freshwater fishing in Balalu-Oya  
Source: Sri Lankan Fisherman YouTube

Species	2013	2014	2015	2016	2017	2018
Tilapia	39,070	46,610	40,504	43,836	50,065	51,810
Carp/Mirigal	3,450	3,920	2,847	3,363	4,250	3,630
Catla/Rohu	8,980	11,020	9,117	7,772	8,435	9,115
Hiri Kanaya	590	580	358	230	330	300
Lula	2,040	2,230	1,582	1,849	2,765	1,645
Cultured Shrimps	4,430	5,040	6,836	6,028	4,630	8,180
Freshwater prawns	540	460	374	705	890	1,340
Cultured Milk fish & Sea bass	90	70	78	174	290	515
Other wild fish	7,720	5,820	5,604	9,973	10,215	11,155
<b>Total</b>	<b>66,910</b>	<b>75,750</b>	<b>67,300</b>	<b>73,930</b>	<b>81,870</b>	<b>87,690</b>

Figure 3.  
Inland fish production in MT (major types) from 2013 to 2018  
Source: Fisheries Industry Outlook 2018, NARA

## Common Freshwater Fish Types

While a majority of fish types are indigenous to the country, some exotic types such as Thilapia and Carp have been introduced to local freshwater bodies. As

## Fish consumption in Sri Lanka

Though Sri Lanka has both marine and freshwater fish resources, the average monthly per capita consumption of fish or fish products is low. According to the Household Income and Expenditure Survey 2019 (selected food items), the consumption of dried fish was 309 g per month by a person. In comparison to 2016, there is only about 5% increase of dried fish consumption. Consumption of fish was not indicated in this survey (see Figure 4).



Constraints faced by the freshwater fishing industry A major constraint is the comparatively low attention and support for the industry by the state sector. Marine fishing industry receives fuel concessions, services at Fishery Harbour Corporations, Fish markets, landing sites and cold storages run by the state sector. However, the freshwater fishing industry receives hardly any tangible support other than the release of new fingerlings to some of the water bodies. There are no storage facilities for freshwater fisherman, hence they are compelled to carry their nets, and other utensils back home on a daily basis. In certain cases, nets worth Rs. 80,000 had been stolen when they were left behind in the boats. Secondly, lack of availability and lack of promotion of freshwater fish as a nutritious fish option is a constraint. Due to the small scale the freshwater fishing takes place, the supply does not extend beyond a few km from catching sites. There is hardly any promotional activities sponsored and supported by the state to increase the production. Thirdly, the poor perception of the population about freshwater fish and lack of knowledge on how to prepare it. Many people believe that freshwater bodies are polluted and hence they should not eat freshwater fish. Some people, though they like to consume, do not know how to clean the fish and prepare a meal. Fourthly, the introduction of exotic species such as Tilapia and Carp, which had indirectly resulted in reducing breeding of indigenous freshwater fish. Lastly, the invasion of tanks and other water ways by “tank cleaner fish” (ඔංචි පුඳු) [Figure 5] which destroys the eggs laid by other freshwater fish. There may be other constraints, but due to the concise nature of this article, such constraints are not listed.

Figure 4. Average monthly per capita consumption quantities of selected food items  
Source: Household Income and Expenditure Survey 2019 (Dept. of

Item	Unit	2019 Qty	2016 Qty	2012/13 Qty
Rice	gram	8,449	8,707	8,989
Rice flour	gram	217	208	194
Wheat Flour	gram	497	509	564
Bread (Normal)	gram	951	948	926
Dhal	gram	653	613	586
Big onions	gram	695	682	608
Sugar	gram	1,034	1,058	1,111
Coconut	number	7	7	7
Chicken	gram	454	387	320
Egg	number	4	3	3
Dried fish	gram	309	295	299

(Census & Statistics)

**Proposals for growth and enhancement of freshwater fishing industry**

The most essential intervention required is the constant and focused support of the State. The available resources (both human and non-human)

must be fully utilized to provide infra structure, fingerlings and other technical support for the fisherman. Consumption of freshwater fish as a low cost but excellent protein source needs to be promoted by the government. A similar State attempt successfully taken to promote indigenous food by “Hela Bojun” and “Ammachchi” outlets can be adopted for freshwater fish promotion. Guidance on post - harvest technology is also required because, presently, almost all freshwater fish is sold fresh, while a small quantity is converted into dried fish. If the national production increases, the fishermen would need other ways to preserve and convert the fish into optional products. Regulations on the release of exotic species must be implemented and monitored regularly, in order to preserve indigenous fish. Farmers must be educated on responsible disposal of used pesticide containers, and to keep freshwater bodies as clean as possible. People must be educated not to release tank cleaner fish to national water bodies, and more legislation needs to be introduced and enacted to protect inland water bodies and the freshwater fishing industry.



Figure 5. Tank cleaner fish (tanki sudda)  
Source: Google Search

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# Our past HEROES

Interview with  
**MARIO  
de Alwis**  
3<sup>rd</sup> Past President of SLFPA



**Q1:** It's my privilege to interview such a renowned person and one of the pioneers in the food industry like you. Would be great if you can start the conversation giving a short brief about your own reading about yourself. Who is Mario?

**A:** If I say very briefly how I feel about myself, I feel like a person who sees opportunities at every corner. I always seek opportunities, and I am a person who is basically satisfied with my achievements and who I am and my life, so in short, that's who I am.

**Q2:** Great to hear you are on the verge of self-actualization. Being in the same industry you are well known to us but for the benefit of the wider community can you please brief your journey in very short? I mean how you entered the industry and how you grew?

**A:** I suppose this would have to relate to who I am and my basic love for food. At a very early stage of my life, I realized I liked food, I liked good food, and I was very curious. My earliest reflections would be my grandmother's kitchen in Dalugama. She produced fantastic food, and it was like a

small factory. Not only day to day cooking but also many other things were happening. The aromas coming out of that kitchen and the flavors were unbelievable, almost every thinkable dish was been prepared. This early exposure inspired me to start "Ma's Kitchen," a company rooted in the tradition of passing down family recipes.

**Q3:** So, you started your journey in the kitchen, which might be the reason your company is named "Ma's Kitchen"? And do you have strong roots in culture?

**A:** Yes, that's exactly the reason. Passing down family culinary traditions from mother to daughter is an important part of our culture. My wife and I named our company "Ma's Kitchen" to honor this tradition. We have strong roots in the Asian culture of passing down special family recipes. My family background, with my mother managing a large household and my father working in the tobacco industry while also farming, provided a rich environment for my culinary interests to flourish.

**Q4:** You were in a different field. How did you move to the food industry?



**A:** In 1977, when opened economy introduces, my father decided to leave his job at a multinational company and, along with my uncle, started a trading house in Dambulla. Initially, they enjoyed the break from the structured corporate life, distributing various products in the region, which was booming due to the Mahaweli project. However, they soon longed to return to the city, while I fell in love with the rural lifestyle and decided to stay. My father saw my enthusiasm and handed over the business to me, moving back to Colombo but retaining a non-executive role. I found myself running the business, dealing with agrochemical brands, equipment companies, and Jinasena water pumps. I traveled extensively, interacting with farmers, and witnessing the region's development. Food has been always on my mind.

In 1980, I started a small backpacker-inn for travelers passing through Dambulla. I cooked for my guests, and it was well-received. When the war began, some of these tourists wrote to us who missed the food we served. To thank them, we sent small packets of curry powder, which sparked the idea of exporting Sri Lankan flavors. This led to the creation of "Ma's Kitchen."

The final factor was creating the opportunity for the agriculture coming out of the region with the onset of the Mahaweli project it was a fantastic way to engage with the farmer community and transform the region with my efforts. Since then, I have never looked back with regret on Social impact.

**Q5:** You have come a long way and are now one of the leading exporters of value-added food in the country. Can you tell us about the current situation and strategies?

**A:** We are now 38 years into our journey. The second generation of the family is taking over the operations and managing the day-to-day business. While I think about retiring, it's hard to step away completely from something so close to my heart. This business is like the daughter I never had, so I'll be involved for a while longer.

We consider ourselves food solutions providers. Our mission is to be an irreplaceable part of every kitchen. We aim to offer the most convenience in the market, ensuring our products bring the loving taste of a caring mother. Our slogan, "Crafting Tasteful Moments," reflects this commitment.

Over the years, we have expanded our offerings with a diverse and extensive portfolio. Our high-quality and innovative family meal solutions bring joy to families in over 17 countries. Dambulla remains our flagship processing facility, producing a wide range of products. We also have factories in Matale for meat-based products, Minuwangoda for coconut-based products, and the north of Sri Lanka for dairy products, sesame, and peanuts.

**Q6:** Your business mainly revolves around outstations. Is there a message you are trying to convey?

**A:** when you locate in producer regions you get prime access to the best and freshest of raw materials. You have the rewarding experience of working closely with producer communities and you value add to the region produce keeping earning within the value chain in the pockets of the producers themselves. Business is a powerful tool you can do a lot if you know how to leverage it to benefit the community.

During the conflict era, I witnessed the pain and suffering of young people and their families due to war. The Dalai Lama's words at the Rio Earth Summit, "Turn swords into ploughshares," inspired me. see how beautiful that is, it means taking a weapon of destruction and turning it into a tool of sustenance. In 2010, after the war stopped in north, I felt it was my time to contribute to peace and reconciliation. Investing in the community was the best way to build trust, provide employment, and help to heal the soul of the country. This led to the creation of North Lanka Family Foods and the "New Beginnings" range of food and beverages, produced by ex-combatants. This initiative became the first social impact brand from Northern Sri Lanka and was recognized as one of the best 50 small businesses in the world at the 2021 United Nations Food Systems Summit.

**Q7:** Great. You were the third president of the SLFPA (Sri Lanka Food Processors Association) and a founder member. Can you brief your journey with SLFPA and your role?

**A:** In the nineties, several USAID projects were underway, and our company benefited from them. David Anderson, who was in charge of AGENT, gathered a few of us as the project was winding down and requested us to create an apex chamber for agribusiness with several specialty associations as members. We sat down and worked out the structure and other modalities, leading to the

creation of the National Agribusiness Council as the apex body, with several associations related to agriculture and food, including SLFPA, as founder members.

In 2001, I became the president of SLFPA. The biggest challenge at that time was to ensure the sustainability of the association and financing it. During that year, Sri Lanka chaired the BIMST food processes sector. I invited some of my executive committee members, including the late Ravi Fernandopulle, our treasurer, and Dhammika Gunasekara, the secretary at that time, to join me on foreign visits to invite them for a food exhibition in Colombo. This effort led to the birth of Profood/ Propack.

**Q8:** You were behind the Profood and Propack exhibition. Can you recall those memories too?

**A:** Yes, we urgently needed a project that could provide sustainable income for the association. I proposed that we consider the SAARC region and BIMST as a whole and take the risk of organizing the exhibition. We had very limited resources. We started the project with all the funds we had, an advance from the National Agribusiness Council (NAC), and a commitment from the Ministry of Industries.

**Q9:** What kind of direction can you provide to SLFPA and the food industry?

**A:** When we started the SLFPA, our dream was for it to be recognized as the most important stakeholder in the processed food sector. There was a time when the private sector was promoted as the driver of the economy, and I hope this continues. However, sustainability is crucial. We can't exceed 48% land utilization without harming our biodiversity. We need to specialize and import what we lack to process quality food for regional and global markets.

The SLFPA should lead advocacy for its members while working with the state. For example, the consolidation of retail trade could impact SMEs in food manufacturing. We need a strong lobby to regulate this consolidation to ensure sustainable value chains.

If any increased government intervention, it could lead to restrictions and unhealthy protectionism. Some sectors may need protection, it should be targeted and temporary. Our products have competed well internationally, and our people are

capable enough to compete without excessive protection.

The industry's voice must be heard in policymaking. Subsidizing production is inefficient because it benefits both those who can and cannot afford it. Instead, targeted interventions for those in need would be more effective. The cooperative movement could manage food security by linking producers and consumers cost-effectively.

Currently, food processors receive only 50% of the retail price, with 30% going to retail trade and 18.5% to government taxes. This is not sustainable. High import taxes on food ingredients and packaging also hinder the industry growth. A dialogue between SLFPA and the government could address these issues.

Another intervention would be on addressing malnutrition in certain districts which could be achieved by fortifying popular snacks and packaged foods at no extra cost to the country.

**Q10:** Finally, can you tell us about your family's support in this journey?

**A:** My wife and I had that perfect balance she took care of the finances and I played entrepreneur and production manager. She has been my greatest resource, then comes the two sons who came back after their studies. I feel so proud to see that not only within the company the two of them taking up responsibilities at the sector level. I would fail if I do not mention their wives who have played their roles at home, within and outside the company through their contributions. I think all in all that is the story of the family, and we are proud to be a part of this 38-year-old legacy of crafting tasteful moments.



**Rasika Seneviratne**

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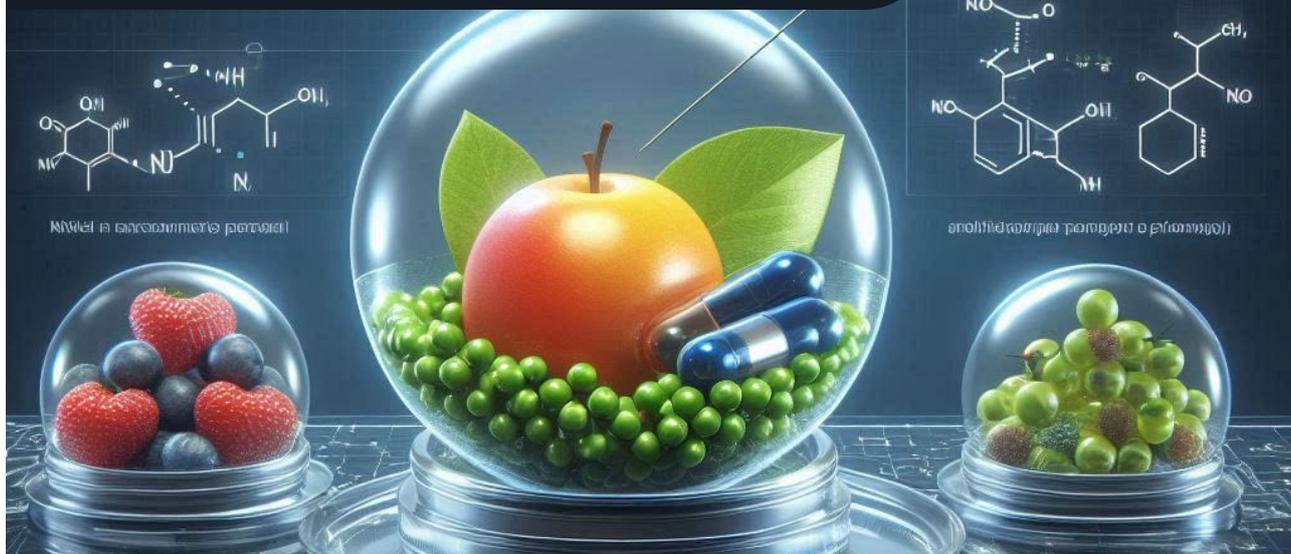
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# NANO ENCAPSULATION

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Vitamins and antioxidants are essential elements for the development, growth of human body and human health. Unfortunately, most of these bioactive compounds are either produced in very small amounts or not made in the body. Bioactive compounds are molecules found in foods, plants, and other natural sources that have a significant impact on biological systems within the body. These compounds can interact with various physiological processes, often influencing human health and well-being therefore those vitamins and other bioactive compounds. Therefore those vitamins and other bioactive compounds need to be supplied from food items and dietary supplements if needed. There are many beneficial functions of vitamins. Some of them are as follows: enhancing the immune system and vision, supporting skin health and cell growth and helping to prevent cancer by vitamin A; empowering the immune system, alleviate anxiety and depression, reduce stroke risk and relieve PMS (premenstrual syndrome) by vitamin B-complex; raising immunity, treating common cold symptoms, maintaining healthy skin, healing wounds, reducing cholesterol levels and regulating the blood sugar level, reducing neurological disorders by vitamin C; preventing cancer and cardiovascular diseases as well as promoting vigorous bones and teeth by vitamin D; restraining brain and nervous system diseases; such as, Alzheimer and other dementias, boosting physical endurance and avoiding skin disorders by vitamin E. Vitamins and other bioactive

compounds are sensitive molecules and they should be preserved from harmful agents like heat and oxidants. Bioactive compounds that are mostly used for making supplements are beta-carotene from carrots, lycopene from tomato, beta-glucan from oats, omega-3 acids from salmon oil, conjugated linoleic acid from cheese, lactobacillus from yoghurt, isoflavones from soybeans.

Nanotechnology has shown greater potential in improving the efficiency of delivery of nutraceuticals and bioactive compounds in functional foods to improve human health. Nanoparticles can play special role in giving solution to increase bioavailability of oral delivery of bioactive compounds and other nutrients. E.g. nanoparticles can improve the bioavailability of micronutrients, for example, vitamin B12, vitamin A, folic acid, and iron. Nanoparticles have significant chemical and physical characteristics such as solubility, color, strength, infusibility and high-surface-to-volume ratio. Both Nanocapsules and Nanoencapsulation methods are used for the delivering process of bioactive compounds and other nutrients. Lipid nanocapsules are the most stable and widely used nanocapsules which has an oily core contained bioactive compounds and an outer polymeric membrane. Adding bioactive ingredients to food like phytochemicals, micronutrients, and dietary fibers has been difficult because of problems like poor food material miscibility, unpleasant flavors,

and physical/chemical instability in food processing conditions like high temperatures, light, oxygen etc.

The nanoencapsulation system offers numerous benefits such as ease of handling, enhanced stability, protection against oxidation, retention of volatile ingredients, moisture-triggered controlled release, pH-triggered controlled release, consecutive delivery of multiple active ingredients, change in flavor character and long lasting organoleptic perception and enhanced bioavailability and efficacy. Specific active nutrient molecules are separated, isolated and then enclosed in a shell material and it can be effectively absorbed in the body. Core that is consisted of drug substances and a polymeric exterior coating layer. At the same time, the entrapment of bioactive compounds in nanoparticles improves their water solubility and stability, as well as can control their bio/pharmacological activity in a sustained release manner to provide protection against such effects in the body. Release is controlled, so that bioavailability is improved and the likelihood of a repeat use can be decreased. Different approaches have been applied for the nanoencapsulation of bioactive compounds in order to enhance their availability at the target site. The most commonly used techniques for compound encapsulation are nanoprecipitation, nanoemulsification, coacervation, spray drying, electrospinning and electrospray, solvent evaporation. Phenolic compounds like Quercetin, tea catechins, folic acid, thymol, resveratrol, anthocyanins usually encapsulated using strategies like freeze-drying, spray-drying, and microwave-drying for purposes such as target delivery, enhancement of their antioxidant and other functional capabilities, inclusion of new beneficial characteristics.

Essential fatty acids like DHA, linolenic acid usually encapsulated using strategies like spray drying for applications such as spray drying for applications such as stabilization, improved solubility, reduced volatility, lower dosages, and a positive effect on the sensory quality of the final product. Vitamins like Vitamin D3, vitamin B9, vitamin B2, riboflavin, thiamine usually encapsulated using strategies like spray drying and solvent evaporation for applications like Defending against oxidation. Carotenoids like tomato lycopene and crocins usually encapsulated using strategies like freeze-drying nanodispersion and nanoemulsion for applications such as Stabilization, effective controlled release, and increased industrial use (as colourants and antioxidants). Probiotics and prebiotics like *Lactobacillus casei*, *L. reuteri*,

*Bifidobacterium bifidum*, *B. breve*, *Streptococcus thermophilus*, fructooligosaccharides, lactulose, and galactooligosaccharides usually encapsulated using strategies like emulsification for applications such as increased viability, gastrointestinal health promotion, and appropriate inclusion in the food product.

The wall materials used as encapsulating systems in the food sector consist of polysaccharides, lipids, waxes and protein molecules, but also safe synthetic substances. Wall materials used as encapsulating systems in the food industry mainly consist of polysaccharides as well as protein molecules. They were used because this type of biopolymeric material is safe for human consumption, nontoxic and its interaction properties permit the entrapment of various types of bioactive materials. The material contained within the nanocapsule is referred to as core, internal phase, or fill; and the wall is called shell, coating or membrane. The nanocapsule wall material is then designed to perform a specific function according to the application. Therefore, in relation to nanocapsules formed for the protection of bioactive compounds/food components from external environment, their wall material is a major consideration.

Encapsulation appears to be a powerful technique for addressing many of the deficiencies outlined above. Using a matrix to shield bioactive agents in liquid, solid or gaseous phase and assist them to preserve their spatiotemporal diversity is called encapsulation. Moreover, encapsulation can enhance stability at high temperature and humid condition so that the continual release of micronutrients can be provided. It also prevents off-flavors from some vitamins and minerals as well as reducing undesired reactions with other components. All things considered, encapsulation appears to be one of the most promising methods for shielding delicate or unstable materials from adverse circumstances or degradation caused by oxidative environments.



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# The EPR Law Workshop

Held on the 23<sup>rd</sup> of October 2024



There have been many discussions, in many a forum on the EPR Law in Sri Lanka. We also know that the law has been gathering much momentum globally and it is a matter of time before it is rolled out in Sri Lanka. There is clear direction with regards to some kinds of plastic, but the question has always been about the way forward. On the 31st of May 2024 News First carried a news article and a press release by the Central Environmental Authority confirming that the “Extended Producer Responsibility Law”, better known as the EPR law would be implemented soon in Sri Lanka. It stated clearly that the law would initially apply to PET and HIPS based plastic packaging and will follow with other variants of plastic. There was widespread speculation by all stake holders in the packaging industry that covers Raw Material Suppliers, Converters, Brand Owners as to how this would pen out and what would be the way forward.

With this in mind the Sri Lanka Institute of Packaging (SLIP) had many discussions and got to work on how best we can link the stakeholders and law makers in dialog to see how best this could be interpreted and finding common ground on the way forward. Thanks to some inputs from UNIDO who has been doing some work with the small and medium sector and the Food Processors Association being the main body for the food industry where packaging forms a vital part and way forward was discussed. The Result was the EPR Law workshop that was organized by both these parties in collaboration with the SLIP.

This effort brought together key speakers who were experts in their own field that presented the details in a systematic manner.

The welcome address of the session was made by Mr. Thusith Wijesinghe President of Sri Lanka Institute of Packaging and Sri Lanka Food Processors Association. He highlighted the fact that we all should look at the positives of the

EPR law which will bring better environmental conditions if properly managed. He also mentioned about a series of awareness programs initiated by SLIP aimed at educating and empowering younger generation on crucial topics such as EPR systems, waste management, sustainable practices and the critical role of packaging specially in reducing food waste & hoping to have more such programs in the future as well.

The session was moderated by Mr. Johann Tranchell – Secretary Industrial Affairs – SLIP.

The event kicked off with Dr. Jairo Villamin Diaz, Senior Specialist at UNIDO kicking off the first session on the topic of UNIDO’s role in sustainable packaging. Then Mr. Kithsiri Wijesundara, Consultant, shared some insights into the waste issue in Sri Lanka. Mr. S.M.Werahera, Director of the Ministry of Environment discussed the current policy that is in place. Thereafter Attorney Ananda Lal Nanayakara briefed everyone on the law and what it entails. Mr. Lakshan Madurasinghe then shared some experience with the examples of Coke and their sustainability drives with PET in order that the audience would know that laws are not always difficult, but for the greater good it has to be followed with a change in mindset. An online presentation was made to conclude the session on, “Sustainability and Save Food” by Ms. Nerida Kelton – Vice President of the World Packaging Organization.

Finally, the vote of Thanks was delivered by Mr. Lahiru Wijerathne – Asst. Secretary SLIP

The event saw approximately 200 plus industry stakeholders, key government officials, NGO reps and other interested parties in attendance. It was sponsored by Supreme Polymers and their Channel Partner SDD Polymer, Sithara Inks and Hayeleys Aventura.

# SHELF LIFE EXTENSION OF APPLE MASAN FRUIT

BY MODIFIED ATMOSPHERE PACKAGING



The apple Masan (*Ziziphus mauritiana*), also called jujube or ber, is a kind of tropical fruit species of the Rhamnaceae family. It is grown in some parts of Sri Lanka too such as Kurunegala. The fruit's meat is juicy, tender, sweet, and crisp. It is nutrient-dense, abundant in ascorbic acid, and includes vitamins A, B and C. Vitamin C is a crucial vitamin with anti-inflammatory and immune-stimulating characteristics and most of the health advantages of apple Masan is attributed to its antioxidant capacity. Further, it contains high fiber and low-calorie count. The green-mature or green-yellowish stage gives the highest quality of Apple Masan. The limited shelf life of apple Masan is a significant barrier to the growth of its industry. However, storage conditions can change the total quality of apple Masan. Apple Masan are relatively perishable and have a short shelf-life at ambient temperatures. Fruit begins to rot quickly, and overripe fruits quickly degrade due to high temperatures and low relative humidity.

Apple Masan were treated with four different methods. The treatments included LDPE packed with absorbent ( $T_2$ ), waxed and LDPE (Low density polyethylene) packed ( $T_3$ ), and LDPE packed, waxed and absorbent contained ( $T_4$ ) fruit samples. The apple Masan packed with LDPE used as control ( $T_1$ ). The  $KMnO_4$  sachets were used as an ethylene absorbent in the packages. The wax coating consisted of palm oil (3%), guar gum (2%), polysorbate tween 20 (2%), glycerol (30%), and distilled water (63%) according to volume-to-volume ratio.

Apple Masan treated with LDPE-packed and absorbent showed a minimum titratable acidity drop of 24% on the ninth day of storage. Modified atmosphere package affects postharvest physiology and fruit quality of apple Masan positively by increasing the fruit quality parameters such as color (Plate 01-03) and weight loss. The LDPE-packed absorbent containing non-waxed fruits showed less weight loss (0.4%), low decay index (0.4), less chlorophyll degradation, and firmness and color intensities than that of other treatments.



Plate 01. Flesh appearance of LDPE and MAP *Ziziphus mauritiana* fruit at day 1 (a =  $T_1$ , b =  $T_2$ , c =  $T_3$ , d =  $T_4$ )



Plate 02. Flesh appearance of LDPE and MAP Ziziphus mauritiana fruit at day 9 (a = T<sub>1</sub>, b = T<sub>2</sub>, c = T<sub>3</sub>, d = T<sub>4</sub>)



Plate 03. Appearance of the skin of Ziziphus mauritiana fruit kept under LDPE and MAP at day 9 (a = T<sub>1</sub>, b = T<sub>2</sub>, c = T<sub>3</sub>, d = T<sub>4</sub>)

Apple Masan contained moisture ( $87.13 \pm 0.565\%$ ), ash ( $1.76 \pm 1.200\%$ ), crude protein ( $2.29 \pm 0.246\%$ ), crude fiber ( $0.84 \pm 1.412\%$ ), crude fat ( $0.18 \pm 0.003\%$ ) and carbohydrates ( $7.80 \pm 1.078\%$ ). Further, apple Masan were rich in minerals such as Na ( $1452 \pm 3.535$  ppm), K ( $1200.4 \pm 0.848$  ppm) Magnesium ( $226.75 \pm 1.450$  ppm) and had strong DPPH radical scavenging activity (IC<sub>50</sub> value of 21.33 ppm) and total phenolic content (51.31 mg of GAE/100 g). Phytochemicals such as tannin, flavonoids, steroids, and saponin, were present in the apple Masan. The results confirmed that LDPE packed with absorbent contained non-waxing could be an effective means to contribute to the shelf-life extension and quality parameters of apple Masan fruit stored at room temperature ( $25 \pm 2^\circ\text{C}$ ).



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# A Grand Success!



The Sri Lanka Food Processors' Association (SLFPA), together with Lanka Exhibition and Conference Services Pvt. Ltd., successfully hosted the 21st edition of the Pro-Food Pro-Pack & Ag-Biz 2024 exhibition from August 23<sup>rd</sup> to 25<sup>th</sup> at the Sirimavo Bandaranaike Memorial Exhibition Center in Colombo, Sri Lanka. Supported by the Ministry of Industry and the National Agribusiness Council (NAC), the event was inaugurated on August 23<sup>rd</sup> by Mr. Shantha Weerasinghe, Secretary of the Ministry of Industries, in the presence of key stakeholders from both the public and private sectors.

The exhibition proved to be a tremendous success, featuring 250 local and international organizations across 350 stalls.

It attracted 24,000 visitors, along with over 3,000 trade invitees. Post-event evaluations showed strong interest in future exhibitions, with notable growth in the participation of small and medium-sized enterprises (SMEs), many of which introduced innovative new products. Regional SMEs, supported by the Ministry of Industry, also contributed significantly to the event's success.

Special pavilions played a key role in attracting industry buyers and generating business opportunities, including: Ministry of Industry Pavilion, University of Food Sciences & Technology Department Pavilion, Indian Kerala Bureau of Industrial Promotion Pavilion, Chinese Pavilion.

Additionally, a dedicated pavilion for the Food Science Departments of eleven universities provided a platform for showcasing the latest innovations to both local and international markets.

The exhibition embraced the theme "Farm to Fork," covering the entire spectrum of the industry. It showcased a wide array of products, services, and innovations across agriculture, processed food, beverages, packaging, and knowledge sharing. The event brought together industry leaders, stakeholders, and decision makers from agriculture, food processing, packaging, and academia, offering new insights and fostering collaboration within the food science community. Special actions, including live cooking demonstrations, food tasting and sampling, and the Innovave Food Fiesta, allowed participants to engage directly with a diverse and enthusiastic audience.

This hands-on experience gave exhibitors the chance to present their latest products and flavors while connecting with potential consumers. ProFood Pro-Pack & Ag-Biz 2024 once again played a pivotal role in advancing the food industry and stimulating economic growth in the region. Serving as a dynamic platform for leaders, stakeholders, and decision-makers in agriculture, food processing, and packaging, the event facilitated knowledge exchange, showcased cutting-edge technological advancements, and promoted strategic partnerships within the industry.



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### Is it safe to consume Rankiriya (*Alpinia malaccensis*) as a spice?



Figure 1: Different plant parts of *A. malaccensis* (a) Plant (b) Inflorescence (c) Rhizome

The Zingiberaceae family, commonly known as the ginger family, is renowned worldwide for its medicinal plants. The *Alpinia* genus contains more than 230 species. *Alpinia malaccensis* stands out as a perennial medicinal plant and is native to the tropical regions of Indonesia and Malaysia. This plant is also widely cultivated in subtropical and tropical areas, including Sri Lanka, Australia, and West Africa. *A. malaccensis* is increasingly popular as both a houseplant and a landscaping choice due to its impressive height, reaching over 4 meters, and its fragrant, lush green leaves. The plant produces flowers in November and December and is known for its resilience against pests.

In traditional medicine, the rhizome of *A. malaccensis* is pounded and used to treat nausea,

vomiting, and wounds. It is also chewed with betel nut to strengthen and clarify the voice. Beyond its medicinal uses, the rhizome is employed as a seasoning in meat processing and serves as an active ingredient in cosmetics.

### Chemical composition

The hexane extract of Sri Lankan-grown *A. malaccensis* rhizome contains (1'ACA) 1'acetoxychavicol acetate as the major chemical compound (82.87%). In addition, 1,4 dihydrophenanthrene (6.05%), farnesol, acetate (2.32%), and linoleic (1.72%) were the second, third, and fourth most abundant compounds of hexane extract of rhizome whereas, for ethanol extract contains (1'ACA) 1'acetoxychavicol acetate 65.11%, trans-beta-farnesene (6.05%) and farnesol acetate (4.29%) as second and third most abundant compounds.

Surprisingly, the well-known *Alpinia galanga* (Araththa) rhizome also contains (1'ACA) 1'acetoxychavicol acetate 82.88% as the major chemical compound.

Hydro distilled *A. malaccensis* rhizome extract contained 78.2% of methyl (E)-cinnamate, which contributed to 78% of the total oil as the major chemical compound, and Monoterpenes (18.9%) and sesquiterpenes (2.6%).

Moreover, the leaf extract contains phytochemicals such as 5,6-dehydrokawain, coronarin E, coronarin A, (E)-8(17), 12-labdadiene-15,16-dial, hedyforrestin B, cardamonin, pinocembrin, and alpinetin.

## Biological activities of *Alpinia malaccensis*

### i. Antimicrobial activity

The major chemical component and the bioactive chemical compound of ethanol or hexane extracts of *A. malaccensis* rhizome is 1-acetoxy chavicol acetate. The crude extract showed strong antibacterial activities against *Staphylococcus aureus* with Diameter of Inhibition Zone (DIZ) 40-42 mm as shown in fig.2, including methicillin-resistant *S. aureus* and Gram-positive bacteria. Crude extract causes the bacteria cell envelope to damage and coagulate the cytoplasmic contents leading to cell death.

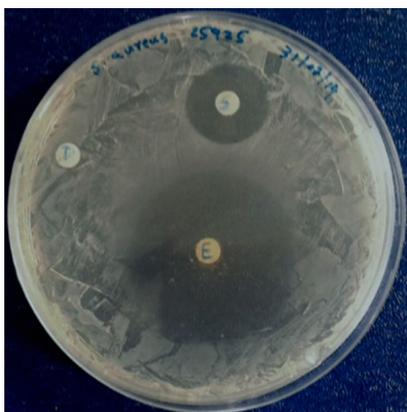


Figure 2 Antimicrobial activity against *S. aureus* represent by Diameter of Inhibition Zone (DIZ)

In addition, 1' ACA has the potential to eliminate antibiotic resistance plasmids of *Salmonella typhi*, *Pseudomonas aeruginosa*, *Escherichia coli*, Vancomycin-resistant *Enterococcus*, at 400-800 µg/ml sub inhibitory concentrations (SIC).

1' ACA convinced plasmid curing and resulted in *Escherichia coli* becoming sensitive to ampicillin, gentamycin, kanamycin, neomycin, ciprofloxacin, cefoperazone, and ceftazidime. Further, vancomycin resistant *Enterococcus* became sensitive to tetracyclin, amp/cloxacillin, and amp/sulbactam and *Salmonella typhi* became sensitive to gentamycin, kanamycin, tetracyclin, amp/cloxacillin, amp/sulbactam, and cefoperazone with the presence of 1' ACA.

*A. malaccensis* extract is a potent antimicrobial agent, and it can be combined with existing antibiotics to enhance their activity for better control.

### ii. Antiviral activity

1' ACA inhibits the Rev protein binding site of the chromosomal region of viral mRNA. Rev protein mediates the transport of the mRNA from nucleus

to cytoplasm for translation into viral proteins. That mechanism proves that 1'ACA is a very effective phytochemical that inhibits the function of HIV-1 virus activity.

### iii. Antioxidant activity

*A. malaccensis* leaf extract mainly contained a high level of phenolic compounds and the leaf extract showed the best antioxidant activity compared to its rhizome extract. The TPC (Total phenolic content) of the methanol leaf extract of *A. malaccensis* was found to be 76.25 mg gallic acid equivalent (GAE)/g of extract. Furthermore, 22.5 µg/ml in DPPH, 72.38 µg/ml in NO, 26.23 µg/ml in ABTS, and 80 µg/ml in H<sub>2</sub>O<sub>2</sub> radical scavenging assay respectively. However, *A. malaccensis* rhizome ethanol extract showed a higher 16.39±1.49 (GAE)/g value of TPC compared to its hexane extract 4.50±0.35 GAE/g. Therefore, antioxidant properties of *A. malaccensis* leaves become a potential source of therapeutic agents for preventing cancer, heart diseases, and aging-related diseases.

### iv. Toxicity evaluation

Many medicinal plants have toxicological effects on both humans and animals. Therefore, establishing toxicity studies using animal models is essential before producing natural products such as preservatives, antiseptics, disinfectants, anticancer and herbal creams. Toxicity assays were carried out according to the Organisation for Economic Co-operation and Development (OECD) test guideline 423.

that a single dose of 2000 mg/kg body weight did not cause any lethality or produce any remarkable changes in general behaviour, body weights, biochemical parameters and histopathological studies on Wistar rats. No deaths were reported at the doses up to 2000 mg/kg showing that the LD<sub>50</sub> of *A. malaccensis* is greater than 2000 mg/kg body weight of Wistar rats.



The in vitro cytotoxicity study was carried out using cell culture techniques. There was no observed

apoptotic/necrotic cell death and DNA damage (as in fig. 3) on the tested non-toxicity concentrations of the extract for 2, 1.4, 30, and 1.4 µg/ml for A549, Hep G2, 3T3, and COS-7 cells respectively.

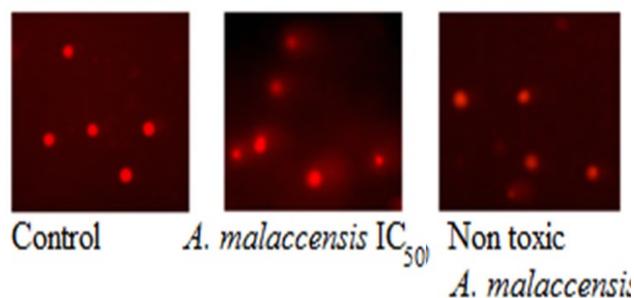


Figure 3: Assessment of DNA damage by comet assay

*A. malaccensis* rhizome did not show toxicity when fed to Wistar rats, so it could be used for human consumption without any adverse health effects.

Applications as a Food preservative, Hand sanitizer  
The marinated vacuum-packed ready-to-cook (RTC) chicken with *A. malaccensis* and kottamba peel extracts showed extending the shelf life 6-9 days by controlling *L.monocytogenes*, *S.aureus* and spoilage bacteria. Therefore, plants extracts combination could use as antimicrobials and antioxidants in extending shelf life of RTC vacuum packed fresh chicken meat products.

The finger imprint method (fig 4) showed that *A. malaccensis* crude extracts 10 mg/ml with 75% Isopropyl alcohol sanitizer and standard WHO-recommended Isopropyl alcohol sanitizer had a stronger similar bacterial inhibition effect than the available commercial sanitizer. Synergistic antimicrobial activity was able to be achieved with a low concentration of IPA with the *A. malaccensis* crude extract to develop an effective hand sanitizer.



Figure 4: finger imprint test at 0 minute , 2 min and 15 min

## Summary

1'-Acetoxychavicol acetate (ACA) is a bioactive compound found in the crude extract of *Alpinia malaccensis*. This extract has been identified as an effective antimicrobial agent against multi-drug resistant bacteria, while also being non-toxic to both humans and the environment. The estimated Average Daily Intake (ADI) for *A. malaccensis* is

approximately 55.41 grams per day, indicating that the therapeutic levels necessary for its antibacterial properties are considered safe for consumption. Additionally, *A. malaccensis* rhizome extract can be incorporated into food products to extend shelf life. When used in alcohol-based hand sanitizers, the *A. malaccensis* extract could potentially enhance the effectiveness of commercial sanitizers.

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Shaping a World of Trust

# Sri Lanka Food Processors Association (SLFPA) Held on 27<sup>th</sup> Annual General Meeting



Sri Lanka Food Processors Association (SLFPA) held its 27<sup>th</sup> Annual General Meeting on 4<sup>th</sup> October 2024 at the Waters' edge Battaramulla Colombo, amidst a gathering of its members.

SLFPA Founded in 1997 as an advocacy group, and currently consists of 140+ member companies. Which include large and multi-national, as well as small and medium enterprises (SME'S) committed to the development of the country's processed food and beverage industry.

The event was delighted by the keynote speaker who is Mr. Sheran Fernando Chief- Economic Policy Advocacy at The Ceylon Chamber of Commerce. In his speech, he focused on "Sri Lanka's Economic Outlook, IMF & Debt Restructuring & Role of Sri Lanka's Food Processors Association".

At the event the SLFPA President, Mr.Thusith Wijesinghe also delivered a speech. In his speech he recalled all the Past Presidents and admired all their contribution to bring the Association to the level where it is today.

The Sri Lanka Food Processors Association comprises of twenty executive committee members. At the event new committee was appointed for the years 2025/2026 which consists of President - Mr. Thusith Wijesinghe attached to Transcontinental Packaging & Commodities (Pvt) Limited, Hon. Secretary - Mr. Hemantha Balasuriya attached to Coca-Cola Beverages Sri Lanka, Treasurer - Mr. Sanjeewa De Silva attached to Unilever Sri Lanka Limited, immediate Past President - Mr. Delano Dias, he was former CEO attached to Cargills Quality Foods, president elect - Mr. Aruna Senanayake attached to C W Mackie PLC, 1<sup>st</sup> Vice President - Mr. Nadishan Guruge



attached to Mead Lee Trading Co. (Pvt) Ltd, 2nd Vice President - Mr. Vasantha Chndrapala attached to Visvaka Marketing (Pvt) Ltd, 3<sup>rd</sup> Vice President - Mr. Rasika Senavirathna attached to Diesel Motor Engineering (Pvt) Limited, Assistant Secretary - Mr. Deepal De Alwis attached to Neochem International (Pvt) Ltd, and Assistant Treasurer - Mr. Dineth Alahakoon attached to Country Style Food (Pvt) Ltd. In addition above office bearers the association comprise with another ten executive members, Mr. Nirosh Lalantha - Ceylon Cold Stores, Mr. Sheran De Alwis - Ma's Tropical Food Processing (Pvt) Ltd, Mr. Damitha Perera - Forbes & Walker Commodity Brokers (Pvt) Ltd, Mr. Sameera Jayathilaka - Westmann Engineering (Pvt) Ltd, Mr. Kolitha Amarasinghe - SGS Lanka (Pvt) Ltd, Mr. Niroshan Dalpethado - CD DE Fonseka & Sons (Pvt) Ltd, Mr. Amila Weerasinghe - Nestle Lanka Limited, Mr. Thusitha Ekanayake - Anods Cocoa (Pvt) Ltd, Ms. Praharshi Wickramasekara - International Commodity Traders (Pvt) Ltd, Mr. Ruwan Kumara - Fonterra Brands Lanka limited, Unilever Sri Lanka Limited and Bureau Veritas were the main sponsors for the event.

Finally, The Hon. Secretary, Mr. Hemantha Balasuriya, delivered the vote of thanks, then the event extended to cocktails party and fellowship networking event.

# Standardization and the FOOD INDUSTRY



Standardization plays a vital role in our everyday lives, especially in the food industry. Globally, there is a trend for food safety, quality, and consistency in food products, which focuses on consumer health and economic growth in both local and international trade. Standardization facilitates the food industry to achieve these objectives. Further, it is essential for consumer trust and reputation, where quality, safety, and consistency are paramount in this sector.

## What is a Standard?

A standard is a document, containing technical requirements, guidelines, or methods of test to ensure the safety and quality of products and services during production and/or delivery, while achieving the expected objectives.

Standards formulation bodies, industry advisory groups, regulatory bodies or industry experts formulate the standards. These standards support organizations to achieve and demonstrate safety and quality while meeting customer expectations and legal requirements.

## What is Standardization?

Standardization is the process of creating and implementing standards for products, services and processes. The purpose of standardization is to ensure that products and services are safe, high quality and consistent with other products and services in the same industry. It enhances

industry reliability, which is essential in today's complex food market.

## Role of Standardization

In the food industry, a wide range of food ingredients are used. They originated from different sources in different countries or in different geographical areas in the world. This is quite challenging because the food industry has to struggle with those various products when meeting consistent quality expectations.

For example, if a company uses a specific colouring substance in its production, a consistent supply of that substance from the same supplier is required to ensure the consistency of the finished product. If the source is changed in any aspect, it could affect the quality and safety of the final product.

In addition to that, consumers are highly concerned about sustainability, quality, and safety of the purchased products. Therefore, businesses need to have systems to monitor the origins of food and ensure its safety and healthfulness. The food industry is highly complex due to a number of regulations, lengthy supply chains, and consumer expectations.

Serious risks can arise from inconsistent food production and distribution in terms of quality and safety. When food standards are not

uniformly met, there is a high risk of increase of contamination, spoilage, and foodborne illnesses. Foodborne illnesses are also crucial in the food industry, which can be resulted as an output of non-standardize practices in the food industry. Other than that, unstandardized practices lead to damaging consumer trust and reputation to the brand image as consumers expect high-quality and safe food products.

Uniform standards facilitate international trade by enabling products to freely move across the borders. Standardization reduces production errors, improves efficiency and increases safety and quality of the food products. Therefore, we can say that standardization is a way to safe and quality food products, which meets customer expectations and regulatory requirements.

### Benefits of Standardization in the food industry

1. Ensures consistent quality and safety of food products
2. Improves efficiency in food safety management
3. Facilitates export and import, as products meet the same quality and safety requirements
4. Ensures that the food products are stored, and transported in a way that reduces the risk of contamination and foodborne illnesses
5. Promotes the development and sharing of best practices
6. Ensures compliance with Regulatory requirements
7. Builds Consumer Trust and Brand Reputation

### Implementing Standardization in a Food Establishment

Standardization in any industry, including food establishments, involves setting up consistent practices across all the processes in the establishment. These practices start from the process of purchasing raw materials, ingredients, packaging materials etc. to the process of delivering the products or services to the customer.

The steps involved with Standardization

- Identifying relevant standards and regulatory requirements
- Developing documentation including procedures, work instructions, guidelines etc. for the identified processes
- Providing training and awareness to the employees, including the top management
- Reviewing and monitoring the established

practices regularly

- Making necessary adjustments
- Implementing improvements as required

Through these steps, standardization can greatly enhance food safety, quality, and operational efficiency within a food establishment.

### Role of Food Business Operators and consumers

As a food business operator, we can start with adopting standards in our food business establishment, which provide clear guidance on safe food handling and risk management, ensuring safety, quality, and consistency through standardization. Standardized quality control measures, hygiene practices, and traceability systems enhance accountability and transparency throughout the production process. By fostering a safety and quality culture in the food establishment, we can build a resilient establishment that supports efficiency, customer loyalty and sustained success.

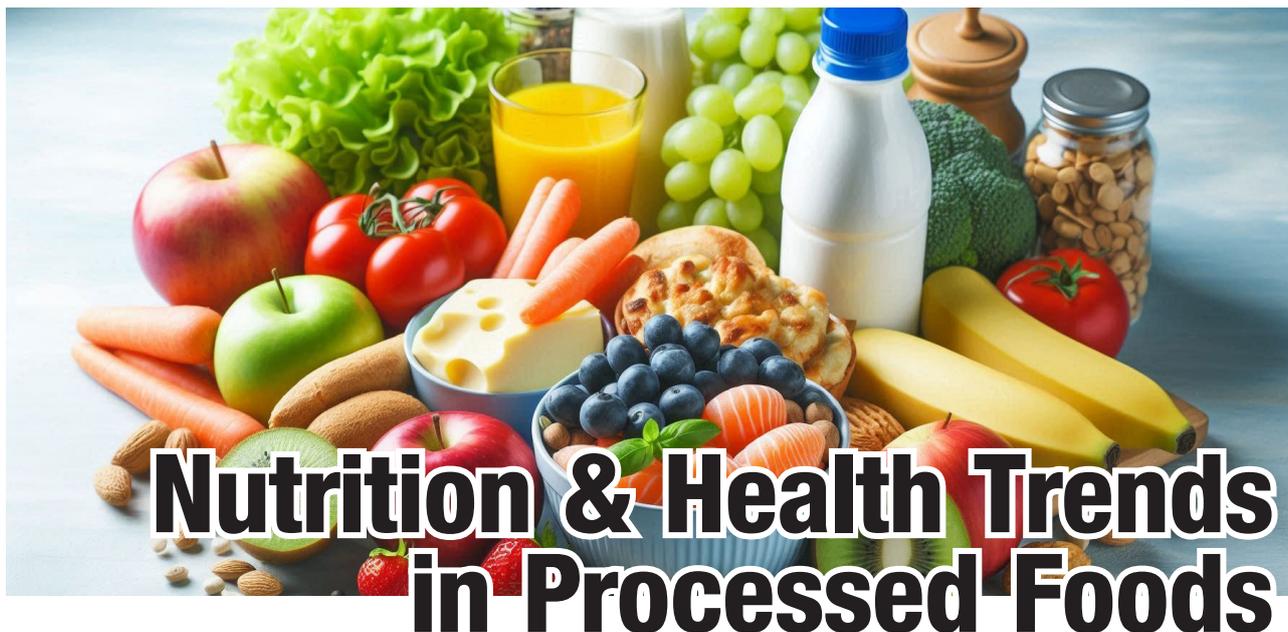
As consumers, we can support standardization within the food industry by choosing certified products. Consumers' feedback encourages companies to uphold their standards. It shows that consumers value consistency and reliability. Additionally, consumers can support environmental and social standards that promote fair practices by selecting sustainably and ethically sourced products.

Standardization is a powerful tool that benefits all stakeholders in the food industry. From food producers to consumers by embracing consistent practices, we can work towards a safer, more sustainable, and trustworthy food supply chain.



**V.A.J. Chandrasekara**

Senior Deputy Director  
Standardization (Scientific) Division  
Sri Lanka Standards Institution



# Nutrition & Health Trends in Processed Foods

The prevalence of overweight, obesity and diet-related non-communicable diseases have been rising alarmingly in the recent past. The existing food environment plays a major role in this situation, with numerous food choices available in the market. Processed foods have long been part of our daily diet, offering convenience, affordability, and accessibility. However, concerns over health and well-being have driven significant shifts in how these foods are formulated, marketed, and consumed. Today's consumers are more informed than ever, demanding healthier, more transparent, and environmentally sustainable products.

**Unprocessed/Natural foods:** Foods that are directly obtained from plants/animal sources. Eg: Fresh vegetables, fruits, egg, meat, fish.

**Minimally processed foods:** Foods that have undergone minimal processing such as cutting, drying, grinding, freezing, and fermenting. Eg: Rice flour, tea leaves, fresh chilled/frozen seafood and meat, nuts and other seeds without salt and sugar.

**Processed foods:** These are made by adding salt, sugar or other substances to natural or minimally processed food. Most are manufactured by industry and have at least two to three ingredients. Sometimes includes preservatives. Use methods like canning, bottling, non-alcoholic fermentation.

Ultra processed foods:

Ultra-processed foods are created by a series of industrial processes. These food are industrial formulations made using 5 or more ingredients which are not usually used at household level. Apart from sugar, salt, oil, and fats, these foods may

contain numerous other ingredients, including food additives.

These foods are energy dense (high in unhealthy fats, carbohydrates / sugar, salt and food additives) but with less micronutrients (vitamins and minerals) and fiber, therefore frequent consumption of these foods may lead to various non communicable diseases such as heart diseases, diabetes mellitus, hypertension, and micronutrient deficiencies.

Also, most commonly used food additives found in ultra-processed foods are chemically synthesized substances that help to keep foods fresh or enhance their organoleptic properties. These chemicals might be harmful and linked to both acute and chronic conditions like allergies, digestive disorders, neurological conditions, asthma, and even malignancies.

## Some common ultra-processed foods

- Carbonated soft drinks
- Sweet/savory packaged snacks & Biscuits
- Pastries, cakes and cake mixes
- Chocolates, candies
- Ice-cream, frozen desserts
- Margarine and fat spreads
- Breakfast cereals, energy bars, energy drinks
- Seasoning powder and cubes
- Flavored fruit drinks and nectars
- Instant sauces
- Pre-prepared pies, pizzas, pastas
- Reconstituted meat products like meat balls, nuggets, drum sticks and sausages
- Instant soups, noodles and desserts
- Commercial milk formula including infant formula

**Ingredients characteristic of ultra-processed foods**

- **Derivatives from processing of food constituents:** Hydrogenated oils, Hydrolyzed protein, Malt dextrin, Invert sugar, High fructose corn syrup, Soy protein isolate, Casein
- **Extracts from food:** Lactose, Whey protein, Gluten, Fruit juice concentrates, Dextrose
- **Additives:** Flavors, Flavor enhancers, Colors, Emulsifiers, Emulsifying salts, Sweeteners, Thickeners, Antifoaming agents, Bulking agents, Carbonating agents, Gelling agents, Glazing agents

**Emerging health and nutrition concerns in processed foods****1. Clean labelling**

Consumers are increasingly wary of artificial ingredients and complex additives. The clean-label trend is pushing food companies to simplify ingredients lists and eliminate synthetic ingredients wherever possible. Products with “no artificial preservatives,” “no artificial colors,” and “no artificial flavors” are now the norm, for most of the emerging small scale food manufacturers. Also, some of these products target specific niche markets. Eg: Organic fruit juices, organic dehydrated fruits, young jack fruit based products, canned organic products such as banana blossom.

**2. Updated labelling regulations and compliance**

Regulatory bodies regularly update labelling standards to ensure transparency. Clear labelling allows consumers to assess a product’s nutritional value, ingredient types, and levels of salt, sugar, and fats. Adhering to these regulations encourages manufacturers to reformulate products with healthier ingredients while maintaining flavor.

**Nutrition Panel**

According to the labelling and advertising regulations (2022), the nutrition panel of a label must contain; serving information, calories, total fat, total carbohydrates and sugars. Adhering to this gives the opportunity for the consumers to read nutritional facts and choose the food products wisely.

Nutrition labelling is mandatory in following instances;

- When making nutrition and health claims.
- Food for infants/ young children/pregnant mothers.
- Food for special dietary use.
- Food for special medical use.

**Color coding system for fat, salt and sugar**

Packaged solid and semi-solid foods display indicators of their overall salt, fat, and sugar content

on the front of the package. This system enables consumers to make healthy food choices easily and quickly.

**Color coding for sugar level in beverages**

Beverages should indicate their sugar levels using a colour-coded system on the front of the package letting customers to make an informed choice. Eg: Carbonated soft drinks, ready to serve (RTS) drinks (except milk products), fruit nectar and fruit juice.

**Other**

Use of symbols, bioactive compounds, logos in the product label would require pre-approval which means the manufactures are bound to deliver whatever they claim.

Only the permitted food additives should be available and should be represented by their INS numbers. When sweeteners and flavor enhancers are present the label should contain a separate statement ‘not recommended for children under 3 years of age’. This transparency lets the customer to have informed choices.

Trans fat free claims may not be permitted by the regulations since trans-fat reduction to safer level is a primary responsibility and should not be considered as a marketing advantage.

**3. Fortification**

To address common dietary deficiencies, food companies are fortifying processed foods with essential nutrients like vitamins, minerals, and omega-3 fatty acids. Fortification is usually done targeting the common micronutrients deficiencies Eg: Iron, Zinc, vitamin D and Iodine.

**4. Plant protein based alternatives**

Protein remains a key focus for health-conscious consumers, especially with the rising popularity of plant-based diets. Some brands are shifting to plant-based protein sources such as coconut based alternative products supporting vegetarian and vegan lifestyles. Eg: coconut ice cream, coconut cheese, coconut yoghurt etc.

**5. Gut health focused products**

Recognizing the link between gut health and overall well-being, more products are formulated with ingredients like probiotics and prebiotics to support digestive health. Alternative options for individuals with food sensitivities are also emerging, such as gluten-free and lactose-free dairy products (e.g., almond, soy, or coconut milk).

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# Impact of Climate Change on Food Processing

Climate change is rapidly becoming one of the most pressing issues affecting global food production and processing industries. In Sri Lanka, with its rich agricultural heritage, the food processing sector plays a crucial role in the economy. As climate change continues to reshape weather patterns, temperatures, and ecosystems, food processors face significant challenges in maintaining both quality and sustainability.

## Effects on Raw Material Supply:

Climate change leads to unpredictable weather events, such as droughts, floods, and storms, that severely impact crop yields. The availability of raw materials for food processing becomes inconsistent, leading to supply chain disruptions. For example, higher temperatures and erratic rainfall patterns affect staple crops like rice, fruits, and vegetables, leading to decreased production. The processing sector, dependent on stable supplies of raw ingredients, is thus forced to adapt to scarcity or lower-quality inputs, increasing costs and decreasing output efficiency.

## Impacts on Food Safety and Quality:

Rising temperatures also foster the growth of pathogens and pests, which can affect the quality

of raw food materials. Increased microbial growth in warmer conditions can reduce the shelf life of food products, heighten the risk of contamination, and challenge food safety standards. This places additional pressure on food processing companies to adopt more stringent quality control measures, which can drive up costs and complicate production timelines.

## Increased Energy Demands:

As temperatures rise, the energy required to process and store food also increases. Food processors must spend more on refrigeration, heating, and cooling to maintain product safety and quality. In Sri Lanka, where energy costs are already high, this presents a significant financial burden on companies. As a result, many processors are exploring renewable energy options and energy-efficient technologies to reduce their reliance on traditional energy sources.

## Sustainable Packaging and Waste Management:

Climate change has also accelerated the push for more sustainable food packaging and waste management practices. Consumers are becoming more environmentally conscious, seeking eco-friendly packaging alternatives.

Food processing companies are now tasked with developing biodegradable, recyclable, or reusable packaging solutions, which often come at a higher initial cost. Furthermore, the need for better waste management practices to reduce the environmental impact of food production is a priority. Reducing food waste, minimizing energy consumption, and optimizing water usage are now key strategies in mitigating climate change effects.

### Adaptation Strategies for Sri Lankan Food Processors:

To combat these challenges, food processors in Sri Lanka are adopting various adaptation strategies

**Diversification of Supply Chains:** Processors are seeking alternative sources for raw materials, including importing or developing partnerships with regions less affected by climate change.

### Investment in Technology:

Technological advancements, such as precision agriculture and automation, can help optimize processing efficiency while reducing resource consumption.

### Sustainable Practices:

Implementing water-saving technologies, utilizing renewable energy, and minimizing greenhouse gas emissions are steps that can reduce the

environmental impact of food processing operations.

### Collaboration with Farmers:

Processors can work closely with farmers to implement climate smart agricultural practices, ensuring a more stable supply of high-quality raw materials.

### Conclusion:

The impact of climate change on food processing is undeniable, and as its effects become more pronounced, the challenges for Sri Lanka's food industry will grow. However, with innovation, sustainable practices, and proactive adaptation, the industry can overcome these hurdles. Food processors have the potential not only to navigate these environmental challenges but also to lead the way in creating a resilient, sustainable food system for the future.



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### Nutrition & Health Trends in Processed Foods ▶ from Page 33

#### 6. Sustainability in ingredients

When considering the global market, sustainable sourcing is becoming an important consideration for consumers. Brands are responding by committing to environmentally responsible practices, such as using organic, non-GMO ingredients, ingredients with a lower environmental impact (Eg: regenerative agriculture grains).

The processed food industry seems to be adapting to meet the demands of health-conscious consumers. As we see cleaner labels, nutrient fortification, and innovative formulations for specific dietary needs, processed foods are evolving to fit into a healthier, more balanced lifestyle.

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# Sri Lanka's Halal-Certified Exports estimated at USD 1.7 billion for 2023.

**This represents 61% of total food and beverage exports and 14% of the country's overall exports**

The growth trajectory for Sri Lanka's Halal-certifiable food and beverage exports, excluding tea, is noteworthy, with a compound annual growth rate (CAGR) of 10% between 2012 and 2023. This robust growth underscores the global demand for Sri Lankan Halal products.



Key markets for these exports include both OIC (Organization of Islamic Cooperation) and non-OIC countries. The top five OIC markets—Turkey, Iraq, United Arab Emirates, Saudi Arabia, and Azerbaijan—collectively brought in USD 501 million in 2023.

On the other hand, the top five non-OIC markets—Russia, the United States, Germany, China, and the Netherlands—accounted for USD 382.74 million.

The Halal Assessment Council (HAC) continues to play a pivotal role in this success story. By continually updating its standards and operations, HAC enables Sri Lankan food business operators to tap into the global Halal food and beverage market, valued at USD 2 trillion.

## Enabling Sri Lankan exports through Halal Certification



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