

Technological Solutions Limited Cops Two Awards at The JMEA 2019 Awards Ceremony

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From a base of approximately 400 manufacturers and exporters of products and services, Technological Solutions Limited (TSL) emerged as the 2019 recipient of the coveted JAMPRO Award for Small Champion Exporter (Services) and also copped the Pauline Gray Award for Best Support Service.

The awards were presented at the Jamaica Manufacturers and Exporters Association's (JMEA) Annual awards ceremony held at the Jamaica Pegasus Hotel on Saturday, October 5.

The awards were determined based on the company's performance in 2018.

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BEST SUPPORT SERVICE AWARD: Kathryn Silvera (left), JMEA Vice President, presents the Pauline Gray Award for Best Support Service to Dr. André Gordon (right), Chief Executive Officer, Technological Solutions Limited and his team members, James Kerr, Chief Executive Officer, Laboratory Services and Marva Williams, Assistant Laboratory Manager, Operations. The occasion was the JMEA Annual awards ceremony held at the Jamaica Pegasus Hotel recently.

Members of the TSL team with the awards.



JAMPRO President Diane Edwards(left) presents the JAMPRO award for the Champion Small Exporter (Services) to TSL Legal Director Ms. Lisa Grant and CEO Dr. André Gordon.

Technological Solutions Limited (TSL) is located at:
Unit #31, The Trade Centre, 30-32 Red Hills Road Kingston 10, Jamaica.

Our Training Center is located at Unit #14, The Trade Centre • We are also based in Trinidad & Tobago.
Opening Hours : 8:00 am - 4:30 pm

Message from the CEO

... TSL to Float Shares on the Junior Stock Market



André Gordon, Ph.D., CFS
Chairman & CEO

As we move into the final quarter of the year, our newsletter TSL Connect, takes pleasure in bringing to you useful information for regulators, the productive sector, support entities and the food service and hospitality sectors.

As we continue on our growth path, expanding and restructuring, we are pleased to announce the company's plans to raise funds for this expansion through an initial public offering of shares on the Junior Market of the Jamaica Stock Exchange.

We are confident that with the continued exceptional execution

of our strengthened and dynamic leadership team and the demand for the unique services that we offer, our business will continue to grow significantly and offer good returns. TSL's turnover in 2018 grew by 21 percent over 2017, which itself was a greater than 25 percent increase over 2016.

Our importance to the manufacturing and exporting sectors in Jamaica was recognized by the Jamaica Manufacturers and Exporters Association (JMEA) at the 2019 JMEA Awards Reception, with TSL receiving the Best Support Service Award. Our extension of these services across the region and beyond also earned us the coveted Champion Services Exporter Award. We intend to continue to build on these accomplishments while expanding our business. We will provide further details on our plans in the near future.

Over 23 years of our existence, TSL has built a strong presence in Jamaica and the wider Caribbean. Our markets also include North and Central America, Western Africa and the EU.

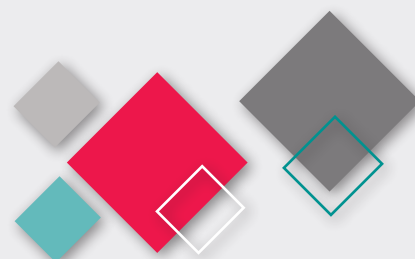
Governments, public sector institutions and regional and international organizations have benefited from having their technology-based programmes developed and implemented by our company. We have an enviable track record of success that augurs well for continued growth.

TSL's Focus is ensuring that companies and organizations in the business of agriculture, agro-processing, food service, hospitality, exporting, manufacturing and distribution can access services that are focused on their specific needs and circumstances.

Please enjoy this issue, in which we present information that encourages best practices and makes you aware of the hazards worldwide which continue to haunt the industries that we serve. Our main aim is to protect you our clients, from the disasters which can befall businesses through errors in processing, manufacturing and environmental management.

Our services include:

- Comprehensive Laboratory Services
- Systems Auditing and Assessments against multiple regulatory requirements (BRC, GAPEU, FDA, HACCP, GFSI, FSMA others)
- Export Market Access & Development
- Thermal Process Evaluation, Development & Validation
- Traceability and Recall Systems Design
- Plant and Facilities Layout and Design
- Research & Product Development
- Tailored Technical and Specialist Training
- Food Safety and Quality Systems Implementation and Training



TSL Affiliate Formed as SQF & HACCP Certification Body

TSL Certification Services International (TSL CSI), an affiliate of TSL, is the first and only regional entity to be granted a licence to operate as a Certification Body by the Food Marketing Institute (FMI) for Safe Quality Food (SQF) Certification in the Americas. TSL CSI has at its helm Ms. Lisa Grant as Executive Director and Mrs. Jackie Scott-Brown as Certification Manager.

SQF Certification bodies are licensed to conduct SQF audits and issue SQF certificates. TSL CSI now joins the rank of other certification bodies globally which contract auditors that conduct site audits.

Celebrating its 23rd Anniversary on July 1, Chairman and CEO of Technological Solutions Limited, Dr. Andre Gordon notes that this move is in keeping with TSL's five year strategic goal as it seeks to provide a more comprehensive range of services at an economical cost to the region's productive sector, to make our companies globally competitive. "TSL is very elated at being awarded this licence and the prospects of being able to support the region through this vehicle" he said. Our being awarded this licence by the FMI-owned SQF International (SQFI) is an extraordinary achievement and yet again a recognition of the world-class competencies of TSL. It is also a statement of

faith by SQFI in our abilities to grow the certification of firms within the region to the SQF based globally recognized food safety and quality systems".

TSL CSI will employ highly competent local, regional and international assessors, technical resources and systems to provide assurance of high quality, responsive certification services for the agricultural, manufacturing transportation, exporting, food service and hospitality sectors. TSL resources are spread regionally, in the United States and in Canada.



JMEA 2019 Awards Ceremony (Cont'd from page 1)

During the year (2018) Technological Solutions Limited (TSL) provided support to firms across the length and breadth of the Caribbean, parts of North America and Europe. Services and support provided included, but were not limited to the following:

- Training over 40 individuals from 15 companies as Preventive Controls Qualified Individual (PCQI) (a US FDA mandatory requirement for exporters).
- Partnered with the Safe Quality Food Institute (SQFI) and NSF International to present, for the first time, the Food Marketing Institute (FMI) sanctioned SQF training to the region.
- Assisted a number of firms to attain Hazard Analysis Critical Control Points (HACCP) certification for the first time.
- Provided support to Jamaican and regional firms to prepare and successfully undergo FDA inspections.
- Helped companies in Jamaica and the Caribbean to successfully design and build FDA compliant facilities.
- Assisted exporters to successfully navigate challenges at the US and Canadian border when their exports were held by the regulatory authorities.
- Provided laboratory service to over 55 companies (from Jamaica and other parts of the Caribbean).
- Introduction of a new range of rapid Lateral Flow Technology microbiological testing thus being able to provide companies with results in a shorter time;

Through these and other initiatives, Technological Solutions Limited impacted the agricultural, food manufacturing and export sectors in Jamaica and the wider Caribbean region from The Bahamas to Suriname.

East Caribbean Companies Gets High Marks for taking Proactive Approach to Food Safety

The East Caribbean Group of Companies (ECGC) got high marks for raising the bar in food safety and regulatory compliance, from *The Searchlight* newspaper in St. Vincent & the Grenadines recently. This was for their foresight in hosting training in the development and application of risk-based preventive controls.

Dr. Gordon, who delivered the training attended by 16 participants, including key representatives from the Public Health Department, said he was impressed with the knowledge of the participants and the level at which they grasped the concepts.

"It's quite impressive that the company has taken this initiative in training their employees on preventive controls as training of this nature, while essential, is not common in the Eastern Caribbean. It speaks to the quality of the team that you have. ECGC will benefit significantly as well as St. Vincent and the Grenadines," said Dr. Gordon.

Based in St. Vincent and the Grenadines, and with operations in Guyana, the East Caribbean Group of Companies (ECGC) produces and markets bakers' flour, a variety of premium animal feeds, carbonated soft drinks and bottled

water. It also operates a rice mill.

ECGC has positioned itself as one of the leading manufacturers in the Caribbean and currently exports to most of the regions' islands. As the manufacturer of choice in the OECS, East Caribbean has accepted that a robust food safety management system is pivotal for compliance in exports regionally and internationally.

In 2016, the USDA's Food Safety Modernization Act (FSMA) made it law that all exporting countries must have a food safety plan designed and implemented by a Preventive Control Qualified Individual (PCQI). A PCQI is a professional who can oversee or perform the preparation of a Food Safety Plan, validate the preventive controls, review records, re-analyze the Food Safety Plan, and any other activities needed to ensure the safe delivery of the food to the consumer.

The workshop was geared towards meeting the requirements through the delivery of a standardized

curriculum developed by the Food Safety Preventive Controls Alliance (FSPCA) which is recognized by the Food and Drug Administration as suitable for PCQI training. The FSPCA is a broad-based public/private alliance consisting of key industry, academic and government stakeholders whose mission is to support safe food production by developing an internationally recognized core curriculum, training and outreach programmes to assist companies producing human and animal food in complying with the preventive controls regulations that are part of the Food Safety Modernization Act (FSMA).

The training covered topics such as Current Good Manufacturing Practices, Food Safety Hazards, Food Safety Plans, Hazard Analysis and Preventive Controls for: Processes, Food Allergens, Sanitation and Supply Chain. Verification and Validation Procedures and Recall Planning were also part of the syllabus.

Upon completion, ECGC trained over 10 certified PCQI on staff as the company works steadily towards achieving HACCP and GFSI-SQF code certifications for the groups' flour milling and bottling operations.



Food Safety Challenges in the Dairy Industry

By Dr. Wendy Gaye Thomas
Group Technical Manager

Milk has been enjoyed throughout the world for thousands of years. It is a nutrient-rich fluid that female mammals produce to feed their young. The most commonly consumed types come from cows, sheep and goats. Although Western countries drink cow's milk most frequently, milk consumption continues to be a hotly debated topic in the nutrition world, so one might wonder if it's healthy or harmful.

From early childhood, we are told that milk is good for us, so even when children beg for a soda, parents often insist on offering milk instead, and with good reason. The nutritional profile of milk is quite impressive. Look at these facts:

Just one cup (244 grams) of whole cow's milk contains:

- **Calories: 146**
- **Protein: 8 grams**
- **Fat: 8 grams**
- **Calcium: 28% of the RDA**
- **Vitamin D: 24% of the RDA**
- **Riboflavin (B2): 26% of the RDA**
- **Vitamin B12: 18% of the RDA**
- **Potassium: 10% of the RDA**
- **Phosphorus: 22% of the RDA**
- **Selenium: 13% of the RDA**

Milk is an excellent source of vitamins and minerals, (as seen in the listing above) including "nutrients of concern," which are under-consumed by many populations. Worthy of note is potassium, associated with a reduced risk of stroke, heart

disease, high blood pressure, protection against loss of muscle mass, preservation of bone mineral density and reduction in the formation of kidney stones.

The nutritional content of milk varies, depending on factors like its fat content and the diet and treatment of the animal it came from. For example, milk from cows that eat mostly grass contains significantly higher amounts of conjugated linoleic acid and omega-3 fatty acids. Also, organic and grass-fed cow's milk contains higher amounts of beneficial antioxidants, such as vitamin E and beta-carotene, which help reduce inflammation and fight oxidative stress.

Protein is necessary for many vital functions in your body, including growth and development, cellular repair and immune system regulation. Milk is considered a "complete protein," meaning it contains all nine of the essential amino acids necessary for your body to function at an optimal level.

Higher consumption of milk and milk products has been linked to greater whole-body muscle mass and better physical performance in older adults. Milk has also been shown to boost muscle repair in athletes. In fact, several studies have demonstrated that drinking milk after a workout can decrease muscle damage, promote muscle repair, increase strength and even decrease muscle soreness.

Milk Benefits Bone Health

Drinking milk has long been associated with healthy bones. This is due to its powerful combination of nutrients, including calcium, phosphorus, potassium, protein and (in grass-fed, full-fat dairy) vitamin K2. Approximately 99% of your body's calcium is stored in your bones and teeth. Milk is an excellent source of the nutrients your body relies on to properly absorb calcium, including vitamin D, vitamin K, phosphorus and magnesium. Studies have linked milk and dairy to a lower risk of osteoporosis and fractures, especially in older adults.

Milk Is Not for Everyone

Although milk may be a good for some, others can't digest it or choose not to consume it. Many people can't tolerate milk because they're unable to digest lactose, a sugar found in milk and dairy products. Lactose intolerance affects around 65% of the world's population. Others choose not to consume milk or dairy products due to dietary restrictions, health concerns or ethical reasons.

The milk and dairy products we buy in the stores however may give rise to a number of concerns.

These include allergic reactions to its proteins (dairy products are

listed among the “Big Eight” foods that account for 90% of all food-allergy reactions in the US), intolerance to lactose the carbohydrate that can result in stomach cramps, bloating and other gastrointestinal issues, concerns over hormones in the milk, antibiotics in milk, and ethical issues regarding the use of animals. As a result, various types of non-standard dairy milk and non-dairy milk substitutes are now available.

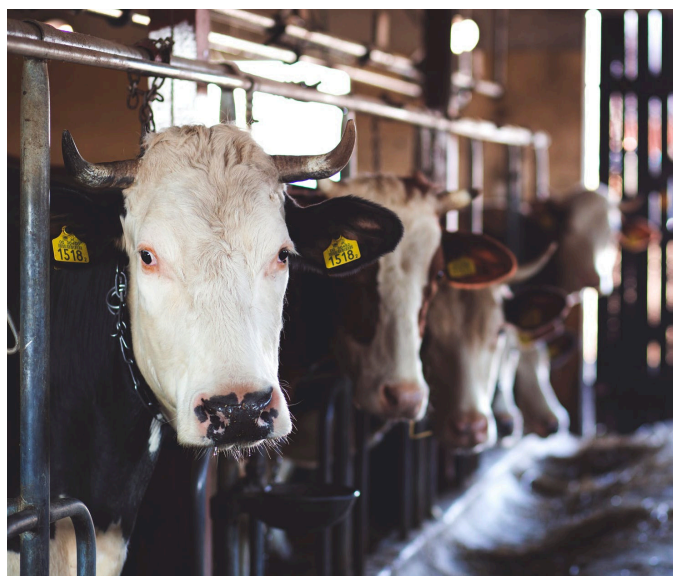
There are, however, persons who get their milk supplies directly from farms. Raw milk can harbour dangerous microorganisms, posing

a specific temperature. Because of the high demand for milk worldwide, a number of countries export the product. In fact, milk exports totaled US\$28.6 billion in 2018. The global sourcing of milk has come under intense scrutiny as a result of recent incidents of illnesses due to consumption of contaminated milk. Studies conducted by the United States Centres for Disease Control indicate that outbreaks from raw milk continue to threaten the public’s health.

To overcome these challenges, strict adherence to prescribed procedures based on comprehensive risk analysis have been instituted worldwide to regulate the processing and marketing of milk.

Despite the fact that many countries restrict or outlaw the sale or distribution of raw milk, numerous advocates are demanding the right to purchase and consume it. As recently as 2002, the U.S. Food and Drug

Administration (FDA) reported that consuming raw or partially heated raw milk and raw milk products caused 200 Americans per year to become ill. Yet proponents insist that, despite the potential for illness, pasteurization destroys or damages many of milk’s valuable nutrients, including the “good” bacteria that are marketed as health supplements known as probiotics.



serious health risks. Pasteurization, coupled with a comprehensive food safety programme, can greatly reduce or eliminate the possibility of foodborne illness resulting from dairy products. Pasteurization kills harmful bacteria by heating milk to

Pathogen Control

While pasteurization eliminates pathogenic organisms that may be present in raw milk, post-pasteurization contamination is an ongoing challenge. Therefore, it is imperative to establish food safety programmes that combine strong controls with vigorous surveillance.

As the debate rages on about the safety of dairy products, local company Technological Solutions Limited (TSL), continues to provide world class technical, environmental and scientific support services in Jamaica and the wider Caribbean that address the challenges of food safety. These include an implementation of food safety systems, provision of laboratory services and training to keep the food producing sector informed of the global trends, and regulations which, if not applied, could cost businesses millions of dollars to correct food safety issues.

To provide an even more efficient service to its clients, TSL on July 1 consolidated all its laboratory services under TSL Laboratory Services Limited (TSL Labs). This is a newly formed entity, with the distinction of being the first and only privately-owned laboratory in the Caribbean region to be accredited by the American Association for Laboratory Accreditation (A2LA). This means that TSL has transferred its ISO 17025 accreditation to the United States-based Accreditation body, A2LA, an internationally recognized accreditation body in the US that offers a full range of comprehensive laboratory and laboratory accreditation services.

TSL Labs will also be improving its competencies by the introduction of new rapid technology for greater efficiency, faster turn-around times and cost savings for its clients.

TSL Staff Profile • Jacqueline Scott-Brown

Jacqueline Scott-Brown is one of the newest members of the TSL team, having joined the team as the Certification Manager for the TSL affiliate company TSL Certification Services International (TSL CSI).

Mrs. Scott-Brown is an experienced Quality and Food Safety Management professional with a proven track record in Inspection, Certification, Standards Development and Compliance monitoring. She is an Independent Consultant for ISO 9001, ISO 14001, ISO 22000 and HACCP and FSMA. With over 17 years' experience in the development and management of standards, working at The Bureau of Standards Jamaica (BSJ), she has a wealth of knowledge at various levels of the conformity assessment process, including inspection, auditing, certification, accreditation, standards development and training. This is augmented by strong management skills garnered through her work as the coordinator of the BSJ's Certification Mark Programme, which was in part instrumental in the accreditation of the National Certification Body of Jamaica (NCBJ) which she later joined as a Team Leader before assuming the position of Manager. This experience, knowledge, and expertise gained with the establishment and accreditation of a certification body will bring tremendous benefit in her new role as Certification Manager of the newly formed TSL CSI.

Mrs. Scott-Brown is accomplished in the auditing of food-processing establishments with respect to Good Manufacturing Practices (GMP's) and Hazard Analysis Critical Control Point (HACCP) food safety system and the relevant Acts and Regulations under which processed food is monitored. She holds a Lead Auditor Certificate in ISO 9001, ISO 14001, ISO 22000, SQF



Auditing Food Safety Systems. Additionally, she has in-depth knowledge of ISO standards gained through significant local and international exposure to quality, food safety and environmental management systems and is a country expert for Jamaica, through the Bureau of Standards Jamaica, with the International Organization for Standardization (ISO) and the Committee on Conformity Assessment (CASCO). She was a short term consultant with the United Nations Industrial Development Organization where she collaborated with international conformity assessment experts which developed the UNIDO publication on the Quality Infrastructure of the Americas Strategic Road Map, (published November 2017). The aim of this road map was to stimulate discussions among the three main regional organizations (COPANT, SIM and IAAC) and relevant interested parties to agree on a high-level, systematic, long-term strategy for the further development and improvement of the Quality Infrastructure in the Americas. She is a member of the Jamaica National Agency for Accreditation (JANAAC) ISO/IEC 17020 Accreditation Evaluation Committee (AEC) and Technical Advisory Committee (TAC).

Mrs. Scott-Brown is a graduate of the University of Technology, Jamaica, from which she earned a Bachelor of Science (Hons.) in Hospitality & Tourism Management, Diploma in Dietetics & Nutrition and has certification in Project Management Principles and Practices from the University of New Orleans.

Sanitation in Food Manufacturing Facilities

By Rochelle Williams
Technical & Regulatory Compliance Manager

With the US Food and Drug Administration (FDA) increasing inspections across the Caribbean, Technological Solutions Limited (TSL) has been receiving requests from several clients across the region to provide technical support in a number of ways.

Most recently it was noted that there may have been some issues with the sanitation programmes within firms. The issues ranged from a complete lack of documented system/procedures to where Sanitation Standard Operating Procedures (SSOPs) existed but records were not available to confirm compliance to these SSOPs. We share with you some elements of a sanitation programme and the importance of implementing one.

Cleaning and Sanitation

A sanitation programme should be designed to effectively reduce the likelihood of contamination of food products, in essence, to protect the food from contamination. There are two related terms which generally refer to programmes of this nature: cleaning and sanitation. Cleaning is the removal of contaminants (soil, food debris) while sanitation refers to reducing disease causing microorganisms to safe levels¹.

Cleaning can be done in different ways and depends on the type of product and the different zones within a facility. Different levels of risks are associated with each type/zone.

Wet cleaning – This is used by most facilities and involves the use of a liquid solvent (often water) and agitation (such as scrubbing) to remove soil from surfaces. This is usually followed by sanitizing the surfaces.

Dry cleaning – This involves the removal of soils from surfaces without the use of liquids, for example the use of vacuums, compressed air, and product flushes. This method is typically used by facilities that manufacture low-moisture products.

Cleaning and Sanitation programmes depend a great deal on the employees who work within a facility. This is why training is a critical component in the programme. Employees must be aware of their responsibilities - what to clean, how to clean and the frequency with which to clean each tool/area/equipment. If dilutions or make-up of chemicals are required, sanitation staff must be properly trained in this area.

Sanitation staff should also be trained in the proper documentation of the activities completed and what to do if there are issues or non-compliance with the programme as designed. Effectiveness of all training must be confirmed.

As a trainer, I have found that when employees understand the reason why each task must be done or how deviations from the SSOPs may affect the customer, it increases the likelihood of them complying with the requirements.

Establishing a Sanitation Programme

When establishing a sanitation programme, to avoid any critical aspects of the programme being overlooked, TSL recommends that a list of all items (including walls, ceiling, drains, fans, overhead structures) be made, before each room/area is attended to. It is advisable, that items which require similar procedures for cleaning, be grouped together to avoid repeating the SSOP for each. Clearly define the steps to be used for cleaning and sanitizing each item, as well as the PPE and the tools required to complete the tasks. Next, decide on the employee who is to be responsible and the frequency with which this should be done. It is important to document the procedure to be employed when deviations occur. When sanitation staff deviate from the correct procedures, it is critical to re-evaluate the process and re-employ the rules to be followed.

1. [https://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/afs12301/\\$FILE/chapter_08-sanitation.pdf](https://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/afs12301/$FILE/chapter_08-sanitation.pdf)



A sanitation programme usually includes a pre-operation or start up inspection to ensure that the areas and equipment are clean prior to start of production. The findings should be adequately documented and signed off. Any checks done to ensure the effectiveness of the sanitation activities must be recorded and kept on file - this includes the concentration of sanitizers and water temperature (if necessary).

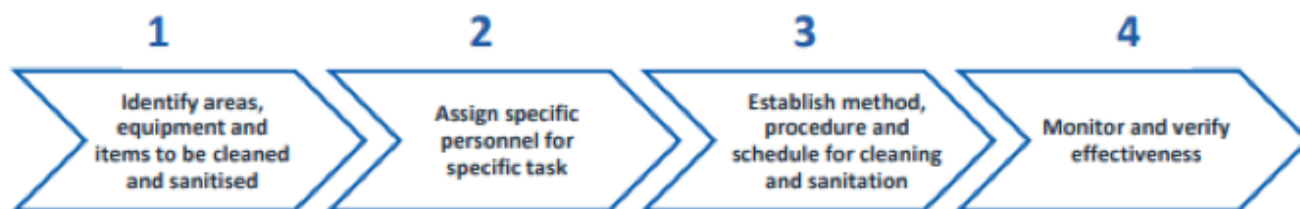
The flowchart below was extracted from GFSI's publication "*Chemicals in Food Hygiene, Volume 1*" and summarizes the steps involved in the development of sanitation programmes. Ideally, this should be a collaborative effort among technical, production, sanitation, QA and other personnel.

TSL has successfully implemented many sanitation programmes and is well positioned to provide support in assisting firms to establish and document programmes such as these. For further details visit our website at www.tsitech.com.

Resources:

Girvin, Colette. (Kellogg's) Cleaning Techniques in Dry Environment

Global Food Safety Initiative (GFSI). 2019. "Chemicals in Food Hygiene, Volume 1." <https://mygfsi.com/wp-content/uploads/2019/09/Chemicals-in-Food-Hygiene-Volume-1.pdf>.



TECHNOLOGICAL SOLUTIONS LIMITED

The premier provider of world class technical, environmental and scientific support services in Jamaica and the Caribbean.

We operate a full service laboratory that is ISO 17025 accredited to offer an extensive range of analyses by the American Association for Laboratory Accreditation (A2LA).

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