



# Bilghia Sapida

a Tropical Fruit with Antimicrobial Activity



In 2019, according to the World Health Organization (WHO), 1.27 million people died from antibiotic-resistant infections. In the same year, it was reported that Africa had the highest number of deaths related to antibiotic resistance. And, the incident was estimated to be the highest in sub-Saharan Africa with the death rate at 23.5 deaths per 100,000 people, this is in part due to poverty and less restriction of antibiotic use.

Therefore, scientists have come up with the new ways to treat antimicrobial resistance by using natural compounds that have effective antimicrobial properties such as African tropical fruits.

Bilghia sapida (*B. sapida*) is a tropical fruit that has antibiotic properties. Studies from the American Society for Microbiology found that its ability to fight bacteria was as effectively as streptomycin and other common antibiotics. This tropical fruit can be easily found and grown. And, it has a variety of names depending on the growing areas such as Okpu, Isin, Acki, Ackee or Akee apple.

*B. sapida* has been used in traditional medicine because of its antioxidant properties and other benefits such as relieving diarrhea, edema. It may also help fight cancer and alleviate psychosis, stomach cramps, hernia, rheumatism and gonorrhoea.

*B. sapida* leaf extract has antimicrobial properties against bacteria such as *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli*, *Salmonella Typhi* and *Streptococcus pneumoniae*. Therefore, it can be used as a treatment for infections caused by these germs. Phytochemicals found in *B. sapida* were also reported to have benefits such as saponins can break down bacterial cells, tannins interfere with cell metabolism, flavonoids inhibit nucleic acid synthesis, phenols prevent biofilm formation and alkaloids inhibit bacterial protein synthesis and disrupt the function of cell membranes, resulting in decreased DNA function.

References:

1. <https://www.labroots.com/trending/microbiology/26800/tropical-fruit-antimicrobial-effects>
2. <https://asm.org/Articles/2024/March/Bilghia-sapida-a-Tropical-Fruit-With-Antimicrobial>
3. <https://www.nparks.gov.sg/FloraFaunaWeb/Flora/2/7/2752>
4. [https://en.wikipedia.org/wiki/Bilghia\\_sapida](https://en.wikipedia.org/wiki/Bilghia_sapida)

# Standard for Pathogenic Microorganisms in Foods (Part II)



Food Product	Type of Pathogenic	Requirement
<b>7. Cream</b> (7.1) Dried cream	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i>	not detected in 25 g not more than 100 CFU/g not more than 100 CFU/g
(7.2) Cream which is passed through the heat treatment process by Pasteurization or other equivalent process	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Listeria monocytogenes</i>	not detected in 25 g not more than 100 CFU/g not more than 100 CFU/g not detected in 25 g
(7.3) Cream other than Dried cream and Cream which is passed through the heat treatment process by Pasteurization or other equivalent process	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 25 g not detected in 0.1 g., except food product according to note 4 shall not be more than 100 CFU/g
<b>8. Ice Cream</b> (8.1) Milk ice cream, Modified ice cream, Mixed ice cream	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Listeria monocytogenes</i>	not detected in 25 g not more than 100 CFU/g not more than 500 CFU/g not detected in 25 g
(8.2) Milk ice cream, Modified ice cream, Mixed ice cream (liquid form which passed through pasteurization heat treatment powdered or dried form)	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Listeria monocytogenes</i>	not detected in 25 g not more than 100 CFU/g not more than 100 CFU/g not detected in 25 g
(8.3) Edible ice, Milk ice cream, modified ice cream, mixed ice cream other than liquid form which passed through pasteurization heat treatment powdered or dried form	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 25 g not detected in 0.1 g., except food product according to note 4 shall not be more than 100 CFU/g
<b>9. Beverage products</b> (9.1) Ready-to-drink products which have pH $\geq$ 4.3 and are passed through the heat treatment process by Pasteurization or other equivalent process: 1) Beverages in sealed container 2) Tea 3) Coffee 4) Soybean Milk	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Clostridium perfringens</i> 5. <i>Listeria monocytogenes</i> <sup>(2)</sup>	not detected in 25 mL not more than 100 CFU/g not more than 100 CFU/g not more than 100 CFU/mL., except Bird's Nest Beverage shall not be more than 1,000 CFU/mL not detected in 25 mL
(9.2) Concentrated or dried beverages in sealed container	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Clostridium perfringens</i> <sup>(3)</sup> 5. <i>Listeria monocytogenes</i> <sup>(2)</sup>	not detected in 25 g not more than 100 CFU/g not more than 100 CFU/g not more than 100 CFU/g not detected in 25 g
(9.3) Beverages in sealed container, Tea, Coffee, Soybean Milk in sealed container other than listed in (9.1) and (9.2)	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 25 g or mL not detected in 0.1 mL or g, except food product according to note 4 shall not be more than 100 CFU/mL or CFU/g
<b>10. Electrolyte Drinks</b>	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 25 mL not more than 100 CFU/mL
<b>11. Herbal Tea</b>	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 25 mL not more than 100 CFU/mL
<b>12. Drinking Water in Sealed Containers</b> <b>13. Ice</b> <b>14. Natural Mineral Water</b>	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 100 mL not more than 100 CFU/100 mL

# Standard for Pathogenic Microorganisms in Foods (Part II)



Food Product	Type of Pathogenic	Requirement
<b>15. Semi-processed Foods</b> (15.1) Rice flake, Noodle, Chinese vermicelli, Rice vermicelli, Seasoned Mung bean vermicelli	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i>	not detected in 25 g not more than 100 CFU/g not more than 100 CFU/g
(15.2) Seasonings of noodle in sealed containers, Paste of rice flour, Chinese vermicelli, Rice vermicelli, and Mung bean vermicelli	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Clostridium perfringens</i>	not detected in 25 g not more than 100 CFU/g not more than 1,000 CFU/g not more than 1,000 CFU/g
(15.3) Seasoned rice soup and rice porridge (congee), clear soup and broth (powdered or dried form)	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Clostridium perfringens</i>	not detected in 25 g not more than 100 CFU/g not more than 200 CFU/g not more than 100 CFU/g
(15.4) Concentrated(4) Broth and soup, Broth and soup in cube	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Clostridium perfringens</i>	not be detected in 25 g not more than 100 CFU/g not more than 1,000 CFU/g not more than 100 CFU/g
(15.5) Curries and curry pastes <sup>(4)</sup>	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Bacillus cereus</i> 4. <i>Listeria monocytogenes</i>	not detected in 25 g not more than 100 CFU/g not more than 1,000 CFU/g not more than 1,000 CFU/g
(15.6) Semi-processed Foods other than listed in (15.1)-(15.5)	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i>	not detected in 25 g not detected in 0.1 g, except food product according to note 4 shall not be more than 100 CFU/g
<b>16. Alkaline-preserved Eggs</b>	1. <i>Salmonella</i> spp. 2. <i>Staphylococcus aureus</i> 3. <i>Clostridium perfringens</i>	not detected in 25 g not more than 100 CFU/g not more than 100 CFU/g

Remark:

- (1) Food products under 9 (9.1) 1) as Aloe vera beverages shall determine only *Salmonella* spp., *Staphylococcus aureus*, and *Bacillus cereus*.
- (2) Food products under 9 shall also determine *Listeria monocytogenes* only in Ready-to-drink products which have pH  $\geq 4.3$  and are passed through the heat treatment process by Pasteurization which contained milk and food products under 9 (9.2) particular concentrated beverages which contained milk.
- (3) Food products under 9 (9.2) as Cereal beverages shall also determine *Clostridium perfringens*.
- (4) For food products other than food products which are passed through any process that cannot destroy or inhibit microbial growth by thermal treatment before or after a packing step in sealed containers which are made of metal or other rigid forms materials that can prevent transmission of air into the container and can be kept at room temperature.
- (5) Food products under 17 shall also determine *Clostridium botulinum* as food products which are passed through any process that can destroy or inhibit microbial growth by thermal treatment before or after a packing step in sealed containers which are made of metal or other rigid forms materials that can prevent transmission of air into the container and can be kept at room temperature, Low acidified food (pH higher than 4.6 and water activity higher than 0.85).



# Maximizing the Power of *Vitamin C*

## C-Fence

Vitamin C is an essential nutrient that humans must obtain from their diet since the body cannot synthesize it endogenously. It is a potent antioxidant, scavenging free radicals and protecting cells from oxidative damage. The recommended daily allowance (RDA) varies based on individual factors, typically set at 75 mg per day for women and 90 mg per day for men, with higher requirements for pregnant, lactating women, and smokers due to increased oxidative stress.

Vitamin C has various health benefits, owing to its antioxidant properties. Some of the key health benefits of vitamin C include:

- **Immune Support:** Vitamin C supports immune function by enhancing the production and function of white blood cells, which are essential for fighting infections and illnesses.
- **Collagen Synthesis:** As a cofactor in collagen synthesis, vitamin C plays a crucial role in maintaining skin elasticity, wound healing, and overall skin health.
- **Antioxidant Protection:** Vitamin C acts as a potent antioxidant, neutralizing free radicals and protecting cells from oxidative damage, which may reduce the risk of chronic diseases such as cardiovascular disease and cancer.
- **Iron Absorption:** Vitamin C enhances the absorption of non-heme iron from plant-based foods, which is particularly beneficial for individuals at risk of iron deficiency anemia.
- **Neurological Health:** Some research suggests that vitamin C may have neuroprotective effects and contribute to cognitive function and mental well-being.

Despite its importance, it's worth noting that vitamin C has limitations in terms of absorption and utilization within the body. While intestinal absorption rates typically range from 80-90%, excess vitamin C beyond the body's needs is excreted through urine. Therefore, maintaining a balanced intake of vitamin C-rich foods is essential for maximizing its benefits while minimizing waste.

### References

- Bsoul, Samer A, Geza T. Terezhalmly. Vitamin C in health and disease. J Contemp Dent Pract. 2004. 5(2): 1-13.  
Bendich, A; Langseth, L (1995). The health effects of vitamin C supplementation: a review. Journal of the American College of Nutrition, 14(2), 124-136.



# EVENT WEBSITE

# MAY-JUNE 2024

## 8 May

Momentive Seminar (Hair Care), Chemico Vietnam Co., Ltd., Ho Chi Minh City, Vietnam

## 28 May

CAHB and Mini CAHB Seminar (Skin Care Trend), Chemico Asia Pacific (M) Sdn. Bhd., Penang, Malaysia

## 29-31 May

Indonesia Cosmetic Ingredients 2024, Jakarta, Indonesia  
<https://perkosmi.com/ici/>

## 4 Jun

Innospec Seminar, Chemico Vietnam Co., Ltd., Hanoi, Vietnam

## 12 Jun

Cargill Seminar, Chemico Vietnam Co., Ltd., Hanoi, Vietnam

## 18-19 Jun

Lucas Meyer Seminar, Chemico Inter Corporation Co., Ltd., Bangkok, Thailand

## 20 Jun

Mini CAHB Seminar (Food), Chemico Vietnam Co., Ltd., Ho Chi Minh City, Vietnam

## 9 May

Momentive Seminar (Skin Care), Chemico Vietnam Co., Ltd., Ho Chi Minh City, Vietnam

Abyss Seminar, Chemico Myanmar Co., Ltd., Yangon, Myanmar

## 28 May-1 Jun

THAIFEX-Anuga Asia 2024, Bangkok, Thailand  
<https://thaifex-anuga.com/>

## 30 May

CAHB and Mini CAHB Seminar (Skin Care Trend), Chemico Asia Pacific (M) Sdn. Bhd., Kuala Lumpur, Malaysia

## 11 Jun

CAHB and Mini CAHB Seminar (Food), PT. Chemico Surabaya, Surabaya, Indonesia (tentative)

## 12-15 Jun

ProPak Asia 2024, Bangkok, Thailand  
<https://www.propakasia.com/ppka/2024/en/index.asp>

## 19-21 Jun

Hi & Fi Asia-China 2024, Shanghai, China  
<https://www.figlobal.com/china/en/home.html>

## 25-26 Jun

9<sup>th</sup> Anti-Ageing Skin Care Conference, London, United Kingdom  
<https://summit-events.com/anti-ageing>





## TRI-K Industries, Inc. Seminar, Vietnam

TRI-K Industries, Inc. – A member of the Galaxy Group cooperated with Chemico Vietnam Co., Ltd., to organize the seminars in Hanoi on April 09<sup>th</sup>, 2024 and Ho Chi Minh City on April 11<sup>th</sup>, 2024 under the topic “NATURE’S SYMPHONY FOR BEAUTY” that revealed the beauty secrets using natural ingredients. Inspiring by the topic, during the theory part, the seminars introduced the natural ingredients for hair care and professional hair salon as well as the role of natural protein sources in cosmetics in order to improve the product quality based on the Sustainable trends. Then, in the workshop part, all participants had a chance to learn how to make 2 formulations for hair care and eye care.

## Nutriventia Limited India Seminar, Thailand



Nutriventia Limited, India in collaboration with Chemico Inter Corporation Co., Ltd., Thailand organized a seminar entitled “C-Fence: Sustained Release Vitamin C, Once-A-Day for All DAY Coverage” on April 23<sup>rd</sup>, 2024 at Chemico Asia Health and Beauty (CAHB) center, Thailand. The seminar provided vitamin C information (general knowledge, pharmacokinetics and the related research), C-Fence™ information, clinical studies, market trends, regulatory information and tablet manufacturing guidelines. The information is very useful in the development of new products in the field of dietary supplement products (direct compression tablet).



## Corum Seminar, Vietnam

Corum Inc., Taiwan in collaboration with Chemico Vietnam Co., Ltd., held a big Seminar 2024 at Liberty Central Sài Gòn Riverside Hotel, District 1 on April 25<sup>th</sup>, 2024. The topic was “BEAUTY BREAKTHROUGHS”. The seminar was all about the advanced Skincare ingredients for whitening, acne and anti-aging products from Corum Inc. and Skin structure presented by Dr. Romun Leaovitavat – the Medical Consultant. The ingredients, Genowhite, Et-VC, IP-VC, Azeclair, Azeclair P, C-pep series and Epi-On, were introduced during the theory part together with latest beauty trends and prototypes developed by Corum Inc. and Chemico Vietnam Application center.

