

The Spoilage of

Fruit Juice Beverages

Alicyclobacillus spp.

A serious problem in the juice beverage industry is spoilage caused by *Alicyclobacillus* contamination. It caused complaints from customers and loss in a lot of money. Most spoilage is found in juices produced from oranges, apples, tomatoes, white grapes, pears, mangoes, pineapples, apricots, peaches, coconuts, etc.

Alicyclobacillus spp. also known as Thermo acidophilic bacteria (TAB) which are non-pathogenic gram-positive bacteria producing high heat and low acid resistant spores. It can grow in aerobic or anaerobic conditions, and the optimum temperature and pH for growth are 45-60 °C and 3.5-5.0, respectively. The bacteria can survive pasteurization temperatures. There are 20 species of *Alicyclobacillus* currently discovered. The species most contaminated in the juice beverage industry is *Alicyclobacillus* acidoterrestris.

Spoilage is not usually obvious because no gas is produced. So, it may go undetected until the product reaches the market, and consumer complaints are received. There is only a specific taste and smell like a disinfectant smell which comes from microorganisms producing a compound called “guaiacol”

The European Juice Association (AIJN) has written guidelines for the main critical control points in the production process including fruit harvesting and transportation, fruit receiving and handling, fruit picking, place washing and fruit sorting, juicing and extraction of juice, filtration, removal of color or bitterness, pasteurization, flavoring, packaging, storage and distribution.

The fruit juice beverage industry must check for the contamination of *Alicyclobacillus* in every step of the production process starting from raw materials, water and equipment used in production, production area and finally, fruit juice products. Testing for contamination at each stage of production is recommended by the International Fruit and Vegetable Juice Association (IFU) Method 12:2019. And the Food and Drug Administration has determined that before the sale of fruit juice products, the amount of *A. acidoterrestris* at least 5 log reduction after heat treatment can be stored for at least 1 month at 25 °C and 43 °C.

References:

1. <https://www.rapidmicrobiology.com/test-method/alicyclobacillus>
2. <https://www.pall.com/content/dam/pall/food-beverage/literature-library/non-gated/FBTBTABFJEN.pdf>
3. <https://www.sigmaldrich.com/TH/en/technical-documents/technical-article/microbiological-testing/pathogen-and-spoilage-testing/alicyclobacillus-spoilage-in-juices>

Be Used for Extracting Color from Plant or Animal Parts



(part 1)

Coloring Extracts from Plant Parts

Thai Name	English Name	Scientific Name	Part Used
กะหล่ำปลีสีม่วง	Cabbage, Red	<i>Brassica oleracea</i> subsp. <i>capitata</i> L. var. <i>rubra</i>	Whole plant
กระเจี๊ยบแดง	Roselle	<i>Hibiscus sabdariffa</i> L.	Sepals and epicalyx
กีวีฟรุต	Kiwifruit	<i>Actinidia deliciosa</i> (A. Chev.) C.F. Liang & A.R. Ferguson; <i>Actinidia chinensis</i> Planch. and hybrids	Sepals and epicalyx
เกรปฟรุต	Grapefruit	<i>Citrus paradisi</i> x <i>Citrus sinensis</i>	Pulp without peel and seed
แก้วมังกร	Dragon fruit/ Pitaya	<i>Hylocereus undatus</i> (Haw.) Britton & Rose; <i>Hylocereus megalanthus</i> (K. Schum. Ex Vaupel) Ralf Bauer; <i>Hylocereus polyrhizus</i> (F.A.C. Weber) Britton & Rose; <i>Hylocereus ocamponis</i> (Salm-Dyck) Britton & Rose; <i>Hylocereus triangularis</i> (L.) Britton & Rose; <i>Hylocereus undatus</i> (Haw) Brit. & Rose.	Pulp and seed without peel
ขมิ้น	Tumeric	<i>Curcuma longa</i> L.; <i>Curcuma manga</i> Valetton & van Zijp	Rhizome
เคอแรนต์แบล็ก	Currant, Black	<i>Ribes nigrum</i> L.	Whole fruit
เคอแรนต์เรด	Currant, Red	<i>Ribes nigrum</i> L.	Whole fruit
แครนเบอร์รี่	Cranberry	<i>Vaccinium macrocarpon</i> Aiton	Whole fruit
แครอท แครอทม่วง	Carrot	<i>Daucus carota</i> subsp. <i>sativus</i> ; <i>Daucus carota</i> var. <i>sativus</i> L.; <i>Daucus carota</i> L. ssp. <i>sativus</i> (Hoffm.) Arcang.	Root
คำฝอย	Safflower	<i>Carthamus tinctorius</i> L.	Flower
เชอร์รี่เปรี้ยว/ เชอร์รี่ทาร์ท	Cherry, Sour/ Cherry, Tart	<i>Prunus cerasus</i> L.	Whole fruit without seed
เชอร์รี่หวาน	Cherry, Sweet	<i>Prunus avium</i> (L.) L.	Whole fruit without seed
เชอร์รี่ดำ	Cherry, Black	<i>Prunus serotina</i> Ehrh. Var. <i>serotina</i>	Whole fruit without seed
โช๊คเบอร์รี่สีดำ/ อะโรเนียสีดำ	Chokeberry, Black/ Aronia, Black	<i>Aronia melanocarpa</i> (Michx.) Elliott	Whole fruit without seed
ทับทิม	pomegranate	<i>Punica granatum</i> L.	Pulp and seed without peel
เนกทาริน	Nectarine	<i>Prunus persica</i> var. <i>nectarina</i> (Sol.) Maxim.	Whole fruit without seed
บลูเบอร์รี่	Blueberries	<i>Vaccinium corymbosum</i> L.; <i>Vaccinium angustifolium</i> Aiton; <i>Vaccinium virgatum</i> Aiton;	Whole fruit
บีทรูต	Beetroot	<i>Beta vulgaris</i> L. var. <i>conditiva</i>	Tuber
บิลเบอร์รี่	Bilberry	<i>Vaccinium myrtillus</i> L.	Whole fruit

EVENT WEBSITE

OCTOBER 2023

04

CAHB & Mini CAHB Seminar
(Hair care and toietry),
Chemico Asia Pacific (M) Sdn. Bhd.,
Malaysia

9-11

Food ingredients Vietnam,
Ho Chi Minh City, Vietnam
<https://www.figlobal.com/vietnam/en/home.html>

16-18

Beautyworld Japan West,
Osaka, Japan
<https://beautyworld-japan-west.jp.messefrankfurt.com/osaka/en.html>

18-19

Cosmetorium, Barcelona, Spain
<https://www.cosmetorium.es/en/>

25-26

California Chapter Suppliers' Day 2023,
California, USA
<https://www.iami411.org/CaliSCC-2023-Expo/index.php?page=Information>

28-29

Beauty Forum, Munich, Germany
<https://www.beauty-fairs.de/en/beauty-forum-munich/home.html>

04-06

Health ingredients Japan, Tokyo, Japan
<https://www.figlobal.com/japan/en/home.html>

12-14

K-Beauty Expo Korea 2022, Gyeonggi,
South Korea
<https://www.k-beautyexpo.co.kr/fairDash.do>

17

Biochempro Seminar, Chemico Asia
Pacific (M) Sdn. Bhd., Malaysia

19

Biochempro Seminar, Chemico Vietnam
Co., Ltd., Vietnam

25-27

SEPAWA 2023, Berlin, Germany
<https://sepawa-congress.de/en/>

31

Daito Seminar, Chemico Asia Pacific (M)
Sdn. Bhd., Malaysia (tentative)

CAHB Lycored

You are invited to join Webinar

Lycomato®
Improved skin health, wellness, and appearance for a glow that starts within

Aug 3rd, 2023
13:30 P.M.

Register Now

Lycored Seminar, Thailand

Lycored Ltd., Israel in collaboration with Chemico Inter Corporation Co., Ltd., Thailand organized a webinar entitled “Lycomato® Improved Skin Health, Wellness, and Appearance for a Glow that Starts Within” on August 3, 2023. The webinar provided Lycored introduction, Lycomato® information, clinical studies for skin health, skin appearance and sun care + environmental stress as well as product properties and applications. The information is very useful in the development of new products in the field of dietary supplements (i.e. soft gel, hard capsule, tablet, gummy jelly, jelly strip, powder drink).

SEMINAR

Intensive Course Of Powder For Make Up

WEDNESDAY 9th AUG. 2023
10:00 A.M. - 03:00 P.M.
LOCATION: BLACK CANYON COFFEE SHOP (SAKAY SAN BRANCO)

Chemico Myanmar Register Please Contact: 0958781005

GET YOUR SEAT SCAN TO REGISTER

DCAC Seminar, Myanmar

Chemico Myanmar Co., Ltd. in collaboration with DCAC Center, a member of Chemico group, Thailand organized the interesting seminars on August 9 and 10, 2023 under the same topic “ Incentive Course of Powder for Make Up .” We presented Global make up trend, Powder formulation - main ingredient, process, instrument and specification as well as Formulation tips & problem solving. We also shared information of make up ingredients that we promoted in Myanmar market.

CAHB NEXUSWISE

Supercharge your health with Nexus Wise's superb products

Tuesday, 22nd August 2023
8:30AM - 4:00PM

Dr. Fahgah Bhatt Bhatt Chuan Ai Shyng

REGISTER NOW

Nexus Wise Seminar, Thailand

Nexus Wise Sdn. Bhd., Malaysia in collaboration with Chemico Inter Corporation Co., Ltd., Thailand organized a seminar entitled “Supercharge Your Health with Nexus Wise’s Superb Products” on August 22, 2023 at Chemico Asia Health and Beauty (CAHB) Center, Thailand. The seminar provided Nexus Wise introduction, product information (CordiPro™, Brossica™, PureBG™, plant-based milk powder and Superseries), clinical studies, global market, market products and formulations as well as tasters. The information is very useful in the development of new products in the field of dietary supplements (hard capsule, tablet, powder shot, jelly strip, jelly drink, gummy jelly), beverages and milk products.

Xin chào Hà Nội CHEMICO VIETNAM IS BACK!

Invitation

SPOTLIGHT ON SKINCARE seminar

15 August, 2023

8:30 am - 12:30 pm Please Come On Time

The Vuon Luxury Garden
Floor 3 - Building A, Giang Vo,
Ba Dinh, Ha Noi

0908 781 005 www.chemicogroup.com

Chemico Vietnam Seminar, Vietnam

Chemico Vietnam Co., Ltd. held a seminar in Hanoi, Vietnam on August 15, 2023 entitled “SPOTLIGHT IN SKINCARE”. It was the first seminar in Hanoi. So, we took this chance to introduce all of our suppliers as well as some of the key innovative ingredients for skincare products. Hopefully, these ingredients could be the efficient way to have a healthy & beautiful skin. Our lab team also demonstrated the workshop part by showing the video clips for the 3 formulations - UV Physical Sunscreen with Harmonie, Advanced Recovery Milky Essence and Mochi Mochi Cushion Cream.

