

Innovation for beauty
revive Thai rubber latex

Hb Extract



TCELS cooperate with

Prof. Dr. Rapepun Wititsuwannakul
from Prince of Songkla University (PSU) and

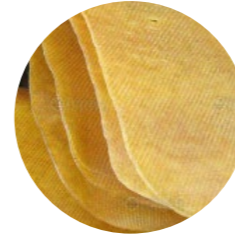
Assoc. Prof. Dr. Neti Waranuch
from Naresuan University (NU)

Researcher has been succeed in development on
Hevea brasiliensis (rubber latex) and cosmeceutical products.



Rubber
latex

Rubber
sheet



Latex
serum



Hb Extract

GMP
(food grade)
ICH-GCP*

*Efficacy and Safety test by
Cosmetics and Natural Products Research Center
Faculty of Pharmaceutical Sciences
Naresuan University

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Cosmeceutical
products

Anti-wrinkle



1st week



12th week



The Hb Extract Specification

Product name: Hb Extract Powder (100% pure)

Botanical name: *Hevea brasiliensis*

Plant part: Fresh latex serum

Physical appearance: Medium brown powder

Product authentication: ¹H-NMR spectrum

Solid content: 80%

Ash content: 18%

pH value (1% solution): 6

Solubility: Soluble in 60°C water > 50 mg/ml

Storage: Refrigerated (5°C) or frozen (-20°C) for longer storage

Microbial load: Acceptable levels

Typical values: Total plate count (< 10³ -10⁴ cfu/g)
Mold and yeast (< 100 cfu/g)

Heavy metal: Acceptable levels

Typical values: Lead (Pb) <1.5 mg/kg
Arsenic (As) <0.2 mg/kg
Cadmium (Cd) <0.1 mg/kg
Mercury (Hg) not detected (ND)

Marker compound:

20 trypsin inhibitor units (TIU)
of *Hevea* protease inhibitor (HPI) per 100 g Hb Extract
(One TIU will decrease the activity of 2 trypsin units by 50%
where one trypsin unit will hydrolyze 1.0 μmole of N-α-benzoyl-
DL-arginine p-nitroanilide (BAPNA)
per min at pH 7.8 at 25 °C)






Recommended use: Overall skin health improvement

Recommended dosage: 4 to 5 % (w/w)

Data by Prof. Dr. Rapepun Wititsuwannakul
Faculty of Science
Prince of Songkla University

Protection of Intellectual Property

Patented countries

-  THAI: 4907
-  SINGAPORE: 144020
-  CHINA: 1264037
-  INDONESIA: IDP000036628
-  MALAYSIA: MV-153171

Patent application number

-  INDIA: 3053/CHE/2007
-  VIETNAM: 2-2007-00175
-  CAMBODIA: KH/P/07/00010



TCELS is positioned as the focal point for all life sciences business, research and investment in Thailand. With its team of experts, TCELS is ready to strategically captivate and streamline each emerging business opportunity in the life sciences industry in Thailand and the entire ASEAN region.

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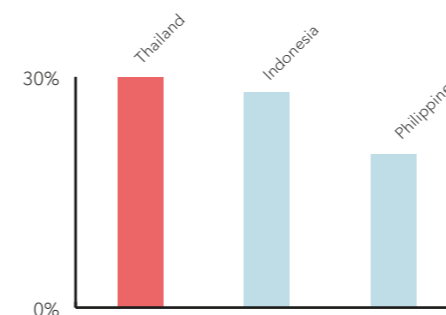
Currently, Thailand's cosmetics is worth about **200 billion baht** from 120 billion baht in local market and 80 billion baht for export.



In Thailand, a total of **762 plants**, mostly SME **520 entrepreneurs**.

Source: Thai cosmetic cluster, 2015

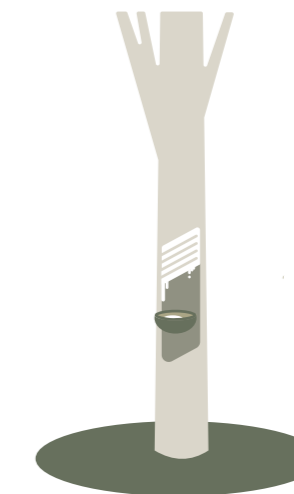
The Asian cosmetics market is growing rapidly. Due to working age population has increased to 300 million. Thailand is the third largest Asian market with over 30% followed by Indonesia (28%) and Philippines (20%) reported by Yano Research Institute, the Institute Survey of Japan.



The export value of Thailand to ASEAN Cosmetics. With an average growth rate up to **9.2% per year** over the last five years by Thailand exporter to Asian markets accounted for **44%** of total exports of cosmetics.

Market capitalization of ASEAN in 2015 was expected to reach **6.1 billion baht**.

Source: TMB Analytics, 2015



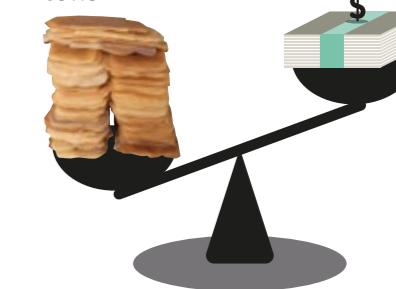
2016, Thailand's rubber area to be approximately **19.6 million acres**.

A total production of **4.46 million tons** of natural rubber.

6 million tons for domestic use



Exported **3.75 million tons**



The output value of **1.79 billion baht**.

The liquid part (non-rubber) more than **5,000 million liters**

Source: Rubber Research Institute Department of Agriculture

