



It is found in the wild in flooded alluvial soils during the rainy season, mainly along the Putumayo, Ucayali and Amazon rivers and their tributaries. In Colombia, it is registered in the department of Amazonas in localities of Amacayacú and Tarapacá; and in the Vaupés in Tabu on the Vaupés River



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## HISTORY OF CAMU-CAMU in Colombia

### ECOLOGY

Camu camu is an Amazonian shrub of the species *Myrciaria dubia* (Kunth) Mc Vaugh, belonging to the Myrtaceae family; species that was described by Kunth in the H.B.K. in 1823. In Mitú- Colombia it is known as Minuake (Guanano).

It can measure up to 8 m. of height [1]. It grows wild and is currently grown as a fruit tree under projects organized in the Tarapacá area of the

C o l o m b i a n

Amazon, due to its high and stable Vitamin C content.

This wild fruit of great importance for the region and for the rural and indigenous community of Tarapacá-Amazons Colombia, based on its sustainable use and its transformation, has become a meeting point in which it is evident that it is possible to articulate the regional policies, the legality in the use of natural resources, scientific research, technology transfer, and community participation, who have benefited in welfare by the active participation, especially of women to integrate camu-camu through a chain of value to national and international markets in the food, cosmetics and pharmaceutical sectors.

Camu camu is strongly favored by the sedimentation of material dissolved in the river, which contributes to the storage of nutrients [2][3].

The tropical moist forest conditions facilitate the development of camu-camu, with an average temperature of 26 ° C and an average rainfall between 2500-4000 mm / year. The altitude where the species is found is almost always around 100-300 meters above sea level.

*Myrciaria dubia* is a shrub species resistant to floods, able to remain for about four to five months in conditions of total waterlogging and its seedlings completely covered during the first two or three years of growth [3]. In these periods of flooding they serve as a strategy for weed control, regulation of insect populations and to maintain a good level of nutrient concentration.

The method to obtain the raw material, fresh fruit is the direct purchase to the indigenous and rural communities, who play the role of collectors, who have been trained with workshops that allow them to make an appropriate handling in the harvest and post harvest, when handling and collecting the product and transporting it.

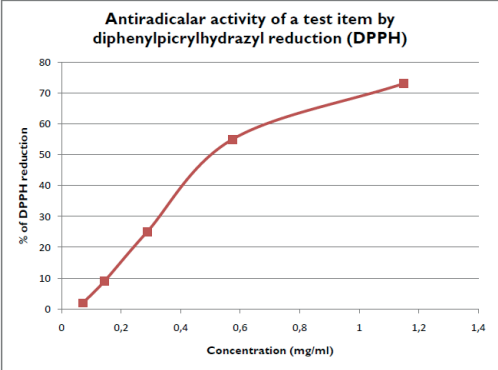
The importance at a cosmetic level lies in the high amounts of ascorbic acid (vitamin C) and anthocyanins that it possesses, natural antioxidants that fulfill the biological function of preventing premature cell damage. The reported concentrations found in the fruits of camu-camu can reach up to 5000 mg [1], and in average value 2585 mg [4] in 100 grams of fresh pulp.



# CAMU-CAMU VITANEY C

Concentration 0,50 % - 1,00 %

**INCI NAME:** Myrciaria dubia fruit extract

| ACTIVES/MARKERS                                    | MAIN CLAIMS              | STUDY                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SAFETY                |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|-----|---|-----|----|-----|----|-----|----|-----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    |                          | EFFICACY                                                                                                                                                                                                                                                                                                                                                                                                                           | RESULTS                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Vitamin C (1,0%): Stable concentration for 3 years | ANTIAGING<br>ANTIOXIDANT | <p><b>Antioxidant</b></p> <p>Study of antiradicalar activity of a test item by diphenylpicrylhydrazyl reduction: DPPH test: The antirradicalar activity of camu-camu Vitaney C was tested in vitro, having Vitamin E as positive control. The calculation of product concentration which gives 50 % reduction, IC50, allows to assess the efficiency of this product at 0,53 mg/mL against the used free radical: the DPPH [5]</p> |  <p>Antiradicalar activity of a test item by diphenylpicrylhydrazyl reduction (DPPH)</p> <table><thead><tr><th>Concentration (mg/ml)</th><th>% of DPPH reduction</th></tr></thead><tbody><tr><td>0.1</td><td>5</td></tr><tr><td>0.2</td><td>10</td></tr><tr><td>0.3</td><td>25</td></tr><tr><td>0.5</td><td>55</td></tr><tr><td>1.2</td><td>75</td></tr></tbody></table> | Concentration (mg/ml) | % of DPPH reduction | 0.1 | 5 | 0.2 | 10 | 0.3 | 25 | 0.5 | 55 | 1.2 | 75 | <p>1. In vitro eye safety HET-CAM TEST: The test evaluated lysis, haemorrhage and coagulation on chorionallantoic membrane on hen eggs to indicate potential damage to mucous membranes in vivo. The joint analysis of quantitative and qualitative evaluations concluded that the product is a substance Non irritant. [6]</p> <p>2. In vivo skin safety test: Patch test<br/>The final result of the test indicates that the product is to be classified as 'harmless' regarding the possibility of skin irritation. [7]</p> |
| Concentration (mg/ml)                              | % of DPPH reduction      |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 0.1                                                | 5                        |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 0.2                                                | 10                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 0.3                                                | 25                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 0.5                                                | 55                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.2                                                | 75                       |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                     |     |   |     |    |     |    |     |    |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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