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THE CAMU-CAMU CULTURE IN BRAZIL

The camu-camuzeiro (*Myrciaria dubia* (H.B.K.) McVaugh) is one of the typical Amazon fruit trees that grow in the margin of rivers and lakes throughout the Amazon basin. Its habitat ranges from the Peru meadow fertile soil, where there is a direct influence of the Andes and very poor soils of the white sand beach of Rio Negro. The plants manage to adapt according to their habitat, in fertile soil the roots are short and near to the main stem, on the other side in poor soil as white sand soil the root system might extend three times or more of its height. This fact may directly influence the fruit production, where the well nourished plant produces each year and the plants in poor soils produce every two or three years, accumulating reserves in order to produce fruit. In upland soils, where nutrients and water may be controlled, the camu-camuzeiro can produce more than two harvests per year, as it happens with other species of Myrtaceae: jaboticaba (*Myrciaria cauliflora*), acerola (*Malpighia glabra*), araçá boi (*Eugenia stipitata*) and others.

It is a woody shrub from 1.5 to 4 m height with a set of stems emerging from the ground nearly the same diameter, and can also present less frequently a short stem before the primary branching. The fruit is a globular berry with fleshy (gelatin) and white mesocarp, citrus-flavored, pale green when immature and vinacea when ripe, from 1.4 to 2.7 cm height and 1.6 to 3.10 cm of diameter. Seed ranges from 1 to 4 per fruit, reniform, with fibrils on the surface.

The camu-camu fruit is known as the richest in vitamin C, ranging from 800 to 6,100 mg/100 g of pulp and its stability is very good. The ripe fruit has more content than the green fruit unlike the acerola fruit. Thus, it has the rich feeding potential in vitamin C (juice, nectar, soda, jelly, ice cream and candy), cosmetics (facial cream, shampoo and conditioner) and drug (tablet, capsule and micro-encapsulated). The camu camu juice made with ripe fruit is pinkish red, very pretty, caused by the anthocyanin. This anthocyanin is also a powerful antioxidant, comparing with other fruits easily surpassed the açai, the blueberry and the orange apple. Analysis from the Laboratory of Brunswick, in Boston, Massachusetts showed 52,969 µmol TE/g composed by five radicals, of antioxidants.

The commercialization is done on a small scale in fairs in the producing region, but the great part is in the form of frozen pulp. The fruit is very little known inside the country, but it is much sought by Japanese, Americans and Europeans, which are exported in refrigerated container, in barrel of 200 l. In Japan, the pulp is transformed into sparkling drinks in aluminum cans and glass, vinegar, bread stuffing, snack, ice cream, candies and tablets. In Brazil, the cosmetics company Semprebella produced the shampoo, the modeler, the grooming, and the conditioner and the Tucuxi Company in Manaus, the syrup.

The natural camu-camu occurs throughout the Amazon basin, in some places can totally dominate the river banks, is one of the few species that it worth the extraction of the fruit, especially for fishermen, because the camu-camu fruit matures in the river flooding period that the fishers are out of work, as they know the rivers well, they also knows where to find the highest concentration of natural camu-camu and can use their boats and canoes to collect and store the fruit in refrigerated chamber and deliver in the pulp factory. The occurrence of camu-camu throughout the Amazon basin means that there are different ecosystems and it will be genetic variation in plants originating from different regions. These facts were confirmed in the germplasm collection of camu-camu installed on land, in the INPA Experimental field, verifying the plant architecture, physical-chemical analysis of the fruit, type of seedling, leaf morphology and others. The seed was distributed in almost all Brazilian states, was also observed that some genotypes (<5%) were able to adapt in the region of Minas Gerais and São Paulo, where the progenies of these plants develop normally, once again showing the plasticity to adapt to new region. Some producers in São Paulo countryside have already started the production of camu-camu; especially in the Vale do Ribeira region, aiming to replace the banana plantations that do not support the flood. As the camu-camu is native from the riverbanks and support four to six months the annual flooding, it does not hurt the crop, so the cultivation in Iguape and Registro is in full expansion.

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In the Amazon region there is already the technology of production, improved materials with high content of ascorbic acid and high productivity, which can reach 10 to 23 kg of fruit / plant / harvest, and through cloning techniques can multiply vegetatively.

There is already the technology for processing fruit, jelly, ice cream, nectar with a high concentration of ascorbic acid. But the most interesting point is the transformation of the pulp in hydro-soluble powder with high concentrations of ascorbic acid (up to 23%) and preservation of anthocyanins to give color to the furrow and retention of the fruit scent.

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