The fruits of Amazonia: biodiversity to be explored for new uses

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Extraction of açaí pulp.

The Amazon basin is rich in fruit and oil plant genetic resources. Use of these is a major issue for the region. Generally collected using extractivism, numerous fruits have remarkable micronutrient compositions. They possess undeniable assets for use in the present context of healthy, functional and natural foodstuffs.

A few promising fruits

Mainly because of their special composition, we study the following species that are common in the eastern Amazon zone.

- Brazil nut (*Bertholletia excelsa*, Lecythidaceae): a traditional extractivist product in Amazonia.
- The açaí palm (*Euterpe oleracea* and *Euterpe precatoria*, Arecaceae): much appreciated by the inhabitants of Amazonia, it is engaged in an exploitation and consumption process.
- The buriti palm or 'palmier bâche' in Guiana (*Mauritia flexuosa*, Arecaceae): it has a strong orange colour.
- The camu-camu (*Myrciaria dubia* (H.B.K.) and *Myrciaria* sp., Myrtaceae): with small red berries, this grows in flooded areas.

A few lines of research for the use of Amazonian fruits

- Knowledge of biodiversity: botanical differences should be correlated with composition characteristics.
- Post-collection techniques: the setting up at the collection sites of infrastructure and basic techniques such as sorting, storage and drying to build up the quality of the end-product.
- Appropriate processing technology. The processing techniques used for both pulp and oil extraction are ancestral. Technologies tried and tested in other contexts and adapted to the environment should be installed.
- Technico-economic verification of the finished products: it is planned to extract anthocyanins and carotenoids for use as natural colorants. These must have original tones, be stable and be produced using an economically viable extraction method.

The advantages of Amazonian fruits

- Conservation type extractivism: the collection of fruits and oil plants does not endanger the survival of the tree or the species.
- A 'green' image. The fruits and oil plants from the forest have an ecologically correct image and benefit from an entirely organic mode of production.

Açaí and buriti pulp

- Micronutrient compositions are remarkable, with very high antioxidant levels (Table 1).
- New, exotic flavours: the taste of açaí and cupuaçu pulp deserve to be known, for example.

Drying Brazil nuts

Table 1. Antioxidant composition of several fruits.

Fruit	Antioxidant	Antioxidant content	Reference values
Brazil nut	selenium	120 ppm	Half a nut contains the recommended daily intake
Açaí	Anthocyanins	100-200 mg in 100 g juice	Redcurrant: 100-400 mg in 100 ml juice Blackberry 350 mg in 100 g fruit
Buriti	Caroténoïdes	carotenoids 300-400 mg in 100 g pulp	Apricot: 2.5 mg in 100 g Carrot: 10-40 mg in 100 g
Camu-camu	ascorbic acid	1 000-2 000 mg in 100 g	Twenty times as much as in orange

Conclusion

The use of fruits and oil plants from Amazonia is subject to the development constraints in the region, and especially the ecological and logistic aspects. Their biodiversity is little used out of context but new market opportunities are emerging for these products: function foods, organic foods, etc. Know-how and technologies for post-collection, logistics and processing remain to be developed to meet such demand.

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