

Market development and diversity of varieties in berry fruits in Brazil



Unidades da Embrapa

Brasil

7

UNIDADES CENTRAIS

43

UNIDADES DESCENTRALIZADAS



Passion Fruit



Photo Fernanda Birolo

Brazil has an area of 8.514.876 km² (5th in area, after China, Russia, Canadá and Estados Unidos).

Biodiversity 37 thousand species in Brazil.

Only few native plant species (pineapple, peanuts, cocoa, caju, guava, guarana, cassava and passion fruit) are considered domesticated and have a defined production chain (Dr. Lidio Coradin, in the IX Symposium of small fruits and Native fruits of Mercosul, Pelotas 2021).

It is true that a few others started to have a place in the market, as açaí, for example.

Guava



Photo Paulo Lanzetta

Guaraná



Photo:Lucio Cavalcanti

Pineapple



Photo Ciro Scaranari

Cocoa

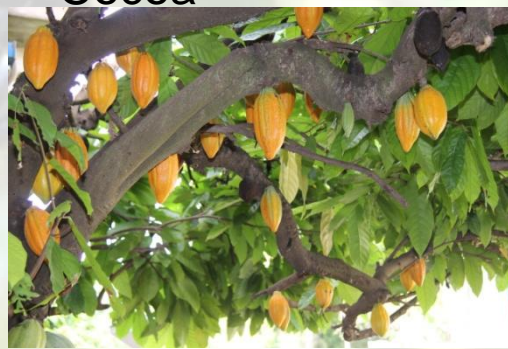
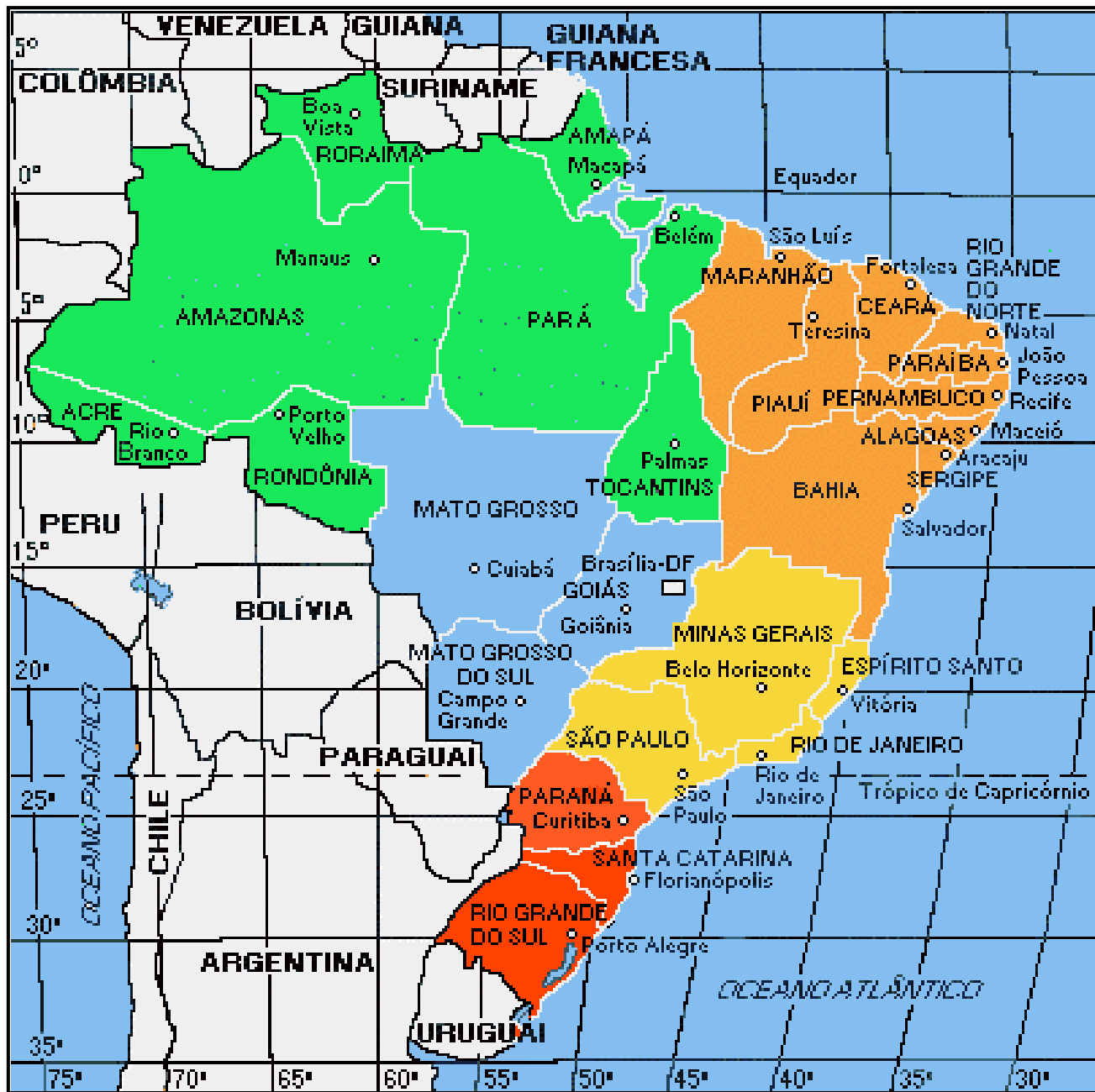


Photo: Claudio Bezerra Melo

Caju



Photo Marcos L. Leal Maia

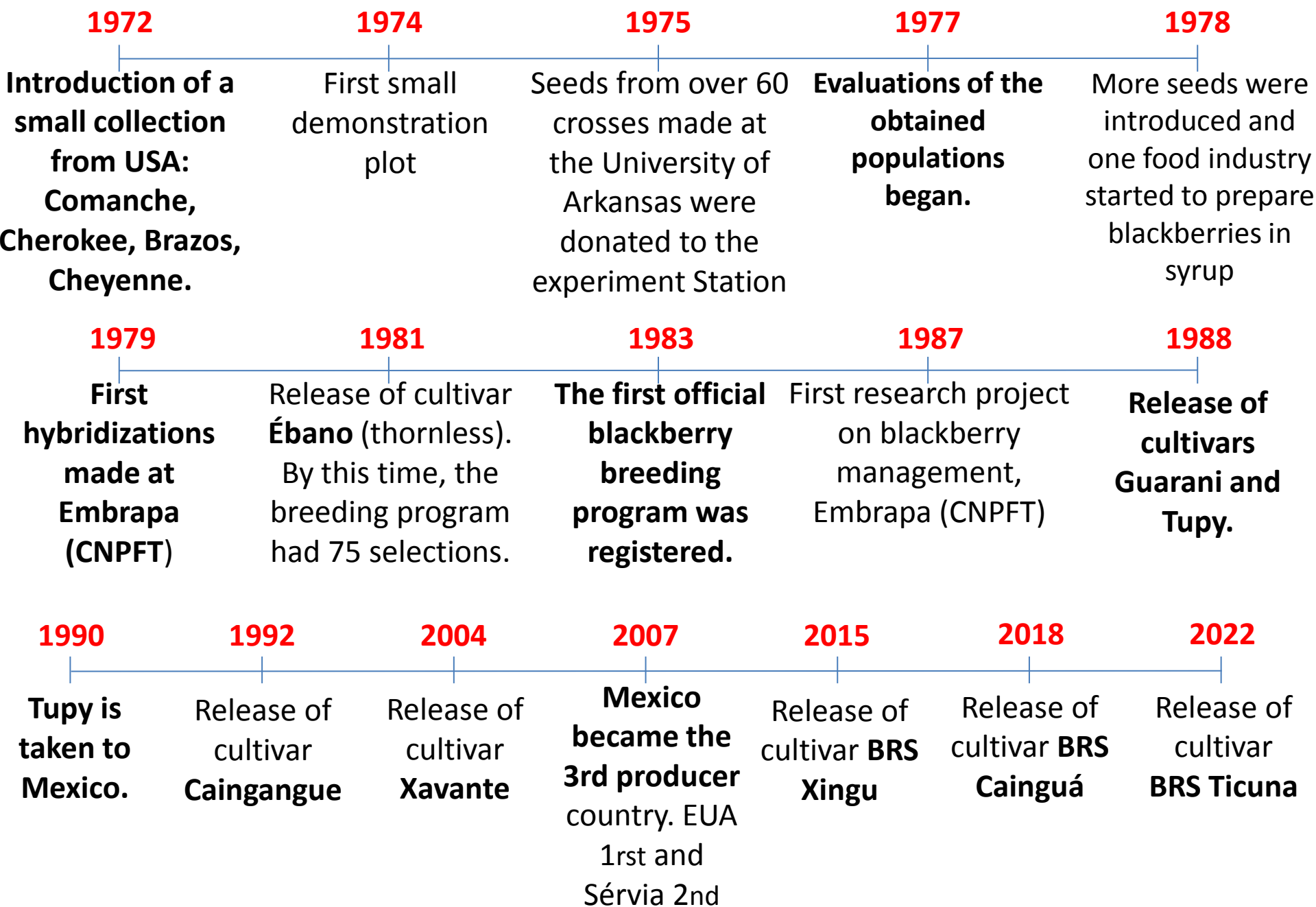


R. urticaelis, *R. erythrocladus*, *R. brasiliensis*, *R. sellowii* and *R. imperialis*



21 11 2

Blackberry – Time line





Cv. Tupy



Released in 1988 is the most planted in Brazil. This cultivar is well adapted to scheduled harvest.





CAINGUANGUE



GUARANI



ÉBANO



XAVANTE

BRS Xingu in Ibiúna, SP and in Pelotas, RS.



BRS Cainguá







BRS Ticuna (for processing).

Below: selection Black 247
(primocane)



Photo by Rodrigo Franzon



Selection Black 312, small thorns of low density. Black 254 very erect thorny canes.



Estimation of planted area, productivity /hectare by State, in 2022.

States	Area (ha)	Total production (t)
Rio Grande do Sul	484.0	5 137.0
São Paulo	128.6	1 221.7
Minas Gerais	109.9	1000.1
Paraná	74.5	551.4
Santa Catarina	23.0	220.0
Other states*	205.0	1 743.0
Brasil	1.025,0	9 873.0

Brazilian regions



*Espírito Santo, Rio de Janeiro, Ceará, Bahia

Source: Emater/RS; LUPA/CATI/SP; SEAB/DERAL/PR





Photo by Lirio Reichert.





Photo by Lirio Reichert





Photo by Lirio Reichert

Scheduled production.





Photo by Lirio Reichert





Photo by Lirio Reichert

- Rio Grande do Sul is the largest producer.
- The plantations are mainly in small areas. Some less than 0.5 ha.
- The largest one has 18 ha but buy fruits from 400 other growers. This company has the capacity for 1500 tons of frozen fruit.
- But there are other companies not as large with capacity for 40 tons, other 200 tons.
- The commerce is primarily with frozen fruits (used for juices, jelly, pulp, alone or in blends)
- Less than 10% fresh





ASSOCIAÇÃO DOS AGRICULTORES FAMILIARES DE FRUTAS VERMELHAS DE MACHADO

Projeto
**Frutas
Vermelhas
Machado**



TRIU 323110 1

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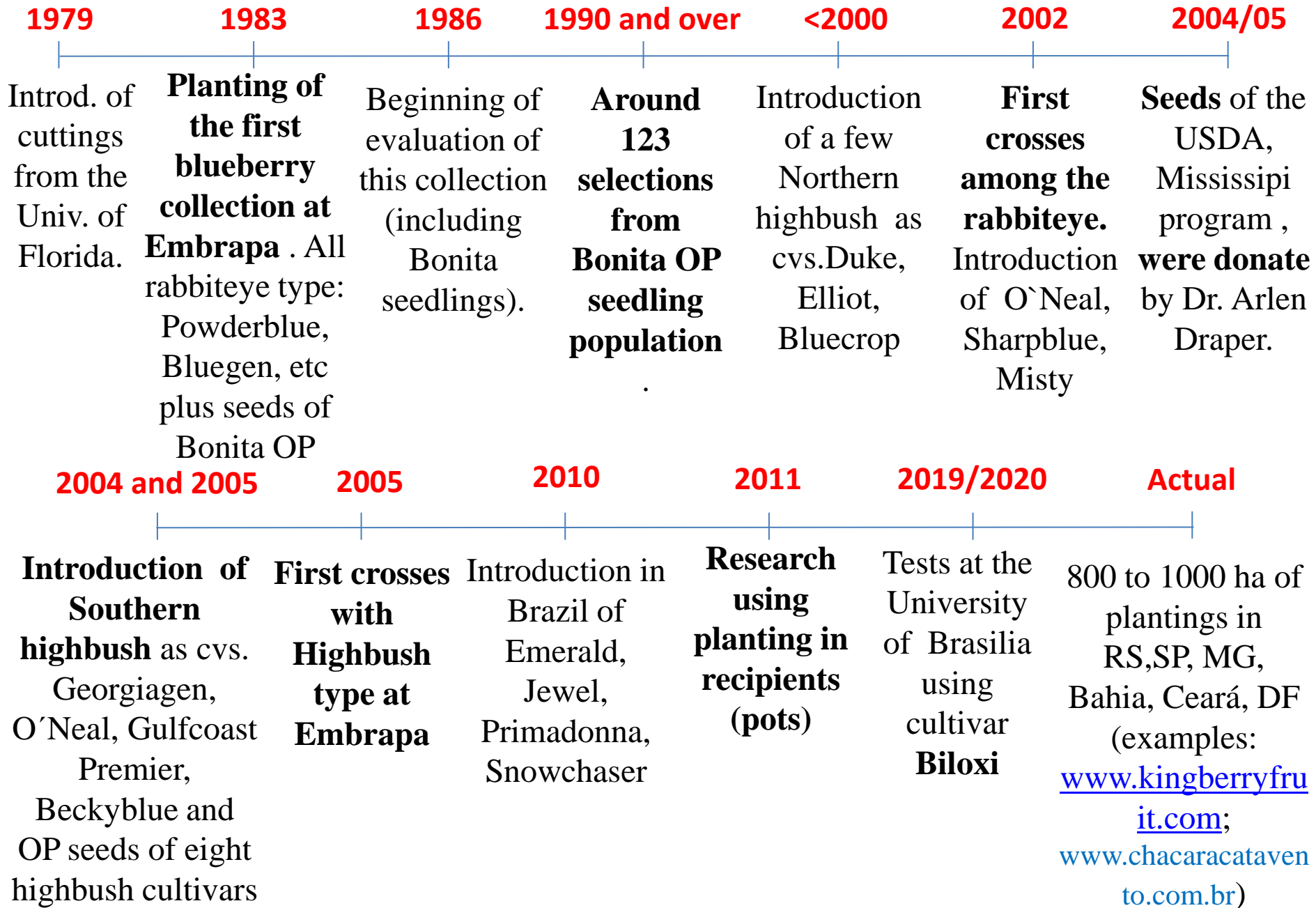


Photo by Lirio Reichert



Photo by Lirio Reichert

Blueberry time line



A limited number of cultivars were tested.
Presently, most planted cultivars are:
Emerald, Biloxi



Petrolina, PE, 2014



Photo: Rodrigo Cezar Franzon



Photos: Luis E. Antunes



Photo: Luis E. Antunes



Photo: Luis Antunes



Photo: Luis Antunes

Blue 81

Selection Blue 81, in a trial in São Paulo.

Blue 81



Powder Blue



Photo: Luis Antunes



C.2014.5-11 (1.7 cm)



Primadonna (1.5 cm)



Emerald
Coin = 1.2 cm



Blue 20



Blue 82 (1.7 cm)



Biloxi

**Raspberry cultivar IPANEMA. First brazilian cultivar .
Nursery FRUTOPIA, Rodrigo Veraldi**



Photo: Rodrigo Veraldi

- **Prices are variable, depending on the destination and if fruits are fresh, frozen, classified or not.**
- **A general idea of prices received by the growers, in 2022, would be:**
 - **Raspberry close U\$ 4 to 5 dollars per kg**
 - **Blackberry U\$ 1,20 dollars for processing and U\$ 2,5 to 3 dollars for fresh market**
 - **Blueberry U\$ 2.5 to U\$ 3 dollars per kg**
- **Comparing to strawberry U\$ 1 to 1.20 per kg**



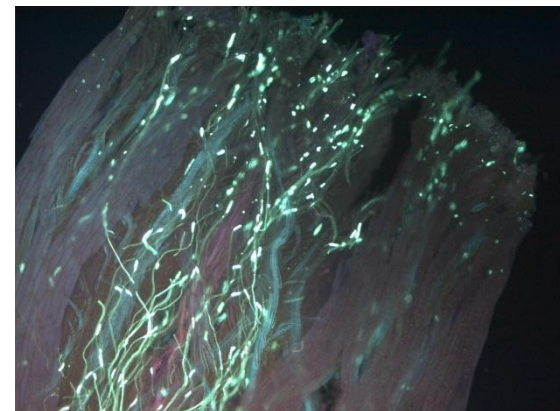
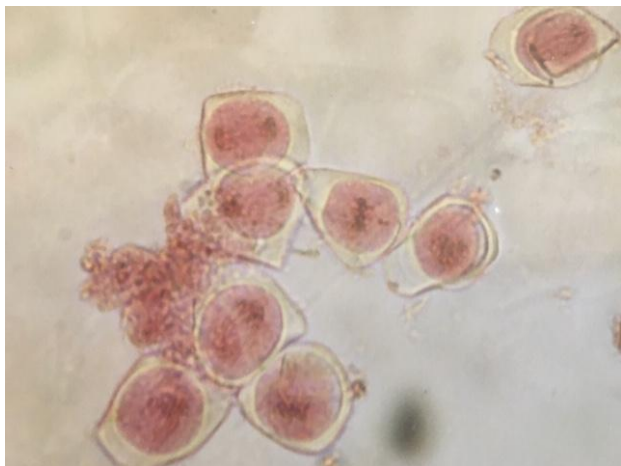
- Predominantly, family farming.
- Some county government are helping small growers to produce berries.
- One example is a small town in Rio Grande do Sul (Monte Alegre dos Campos):
 - 2019 to 2022:
 - **6 families** producing **blackberries** → **97 families**
 - **Raspberries**: from **2 families** → **36 families**
 - **Blueberries**: from **6** → **11 families**
 - For comparison: **Strawberry** had **11 families** → **55 families**.
- Still a relatively small area and market in Brazil, but growing.



Other berries:

Lack of statistics data. Extractivism and some cultivation as well.

Research has been carried out mainly with genotype selection, reproduction and propagation, chemical composition and functional proprieties and uses.



Main uses:

Fesh fruits

Jelly

Candy fillings

Chutneys for meat

Ice cream and popsicles

Frozen pulp

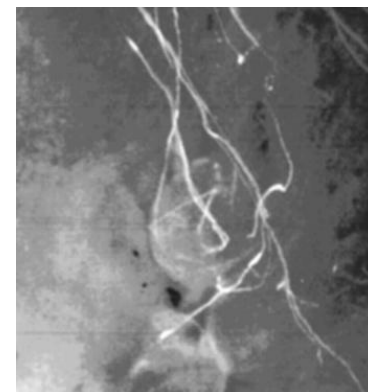
Yogurtes

Pies

Liquors

Pharmaceutical industry (medicines)

Cosmetics





Suriname cherry *Eugenia uniflora*

Variability in colors, shape, size, flavor.

First variety (released by Instituto Agronômico de Pernambuco): **TROPICANA**
Presently dozens of selections are being tested in Embrapa. Two will possibly be registered soon.







Psidium catleyanum var. *lucidum*; strawberry guava



Psidium cattleianum

Embrapa Clima Temperado released two cultivars:

YAC-Y yellow fruits

IRAPUÃ: red fruits

Several selections (both with yellow and red fruits) under evaluations.





Pulp of *Psidium cattleianum*



Photos Paulo Lanzetta

Pulp of *Eugenia uniflora*





Jaboticaba

Plinia cauliflora;
P. jaboticaba, *P. peruviana*
and four other species.

Association with rural tourism.





Foto: J. F. Fortes



Feijoa: *Acca sellowiana*

Breeding effort begun in the 1980s. Also the establishment of a germplasm bank with 300 genotypes.

Brazilian cultivars (EPAGRI, Santa Catarina):

ALCANTARA, HELENA, MATTOS, NONANTE and SCS447

PIERRI. one rootstock SCS446 JADE (seeds, microcuttings and nodal segments).





Photo: Paulo Lanzetta



Uvaia : *Eugenia pyriformis*

Very delicate fruit, kind of sour taste.
The juice is very appreciated. Good
arome.





Guabiju
Myrcianthes pungens



Butiá - *Butia capitata*

Rio Grande cherry or wild cherry
(*Eugenia involucrata*)



Guabiroba: *Campomanesia xanthocarpa* (the taste has some some pungency).

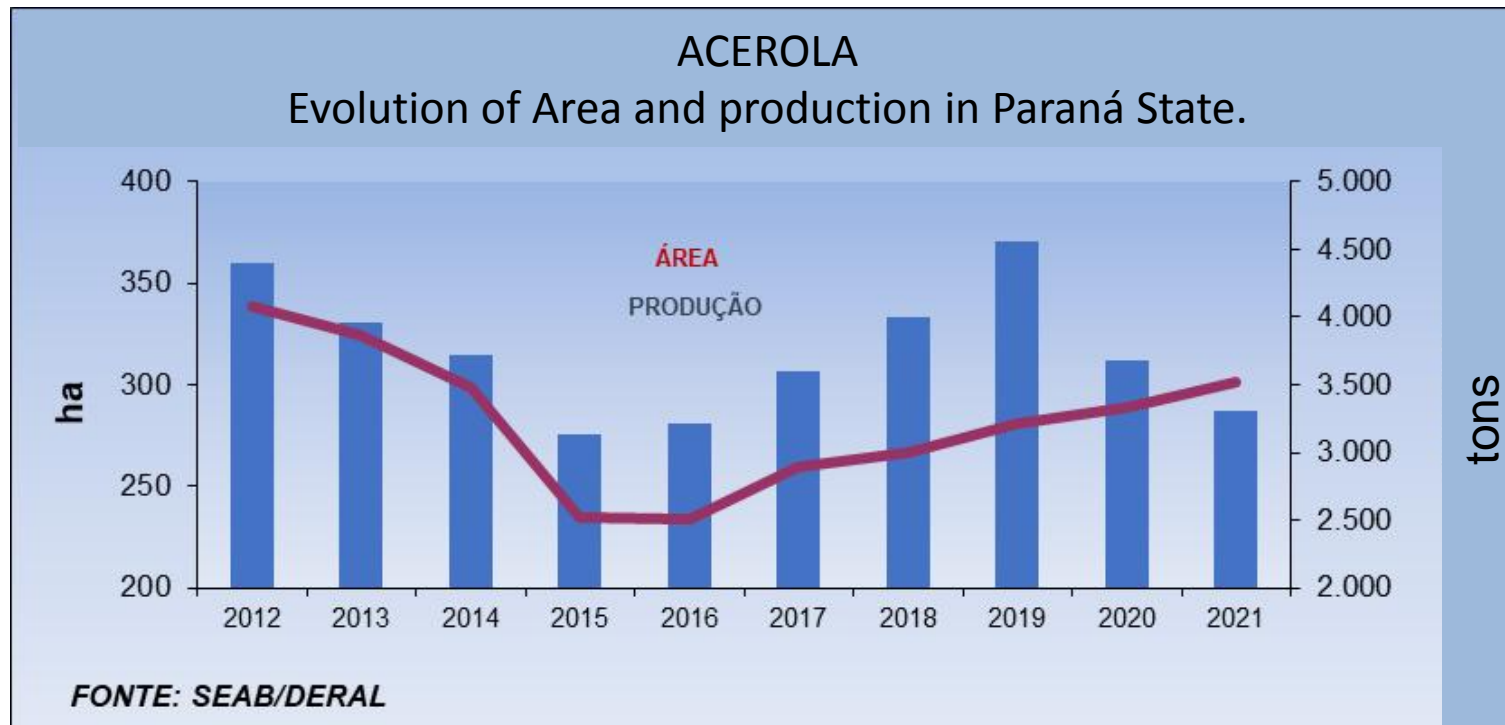
Commercialization in tons, at CEAGESP

	Acerola	Blackberry	Jabuticaba	Blueberry	Physalis	Pitanga	Seriguela
2018	369,6	291,5	2.396,1	78,3	45,5	5,5	184,6
2019	382,7	240,2	2.445,9	109,8	62,8	9,0	127,1
2020	441,6	258,1	2.726,1	120,7	61,7	3,5	133,0
2021	398,3	234,9	2.937,6	200,2	49,6	2,7	115,2
2022	419,7	228,7	2.345,0	278,4	57,0	9,4	259,7

Below: Prices in 2022.

	Ave. price R\$/kg	Minimum	Maximum
Acerola	11,96	6,55	22,09
Blackberry	38,76	22,41	80,00
Blueberry	42,17	22,83	63,44
Jabuticaba	14,62	8,25	30,00
Physallis	52,58	34,00	75,00
Seriguela	15,84	11,40	20,86

Source: dr. Gabriel Bittencourt de Almeida, CEAGESP



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Média
Ave. price/ kg	1.89	2.11	1.68	2.62	4.71	5.33	4.32	6.69	4.67	1.82	3.78



Some of the researchers and institutions working with small fruits:

Acerola Breeding (*Malpighia glabra*): Antilhas Cherry, West indian cherry: Researcher Flávio de França Souza – Institution Embrapa Semiárido. Others: Embrapa Agroindústria Tropical released **BRS 366 Jaburu**; Universidade Estadual de Londrina, cultivars released **UEL 3-Dominga** , **UEL 4-Lígia**, **UEL 5-Natália**; Embrapa Semiárido (CEPATSA); Embrapa Mandioca e Fruticultura, UNESP, Jaboticabal.

Araçá (*P.catleyanum*): Researcher Rodrigo Franzon, Embrapa Clima Temperado

Butia (*Butia capitata*): Researcher Rosa Lia Barbieri, Embrapa Clima Temperado

Camú-camú (*Myrciaria dubia*): Researcher Walnice Maria O. do Nascimento, Embrapa Amazônia Oriental. Others: University of Maringá; Instituto Nacional de Pesquisa da Amazonia (INPA).

Feijoa (*Acca sellowiana*): main research EPAGRI and UFSC.

Fisalis (*Physallis spp.*): Profa. Dra. Fabiola Villa (UNIOESTE); Andrea de Rossi, Embrapa Uva e Vinho.

Grumixama (*Eugenia brasiliensis*): (found in the Atlantic Forestry, from Bahia to Santa Catarina). Embrapa Agroindústria de Alimentos; Embrapa Agrobiologia, UNESP, in Jaboticabal; ESALQ, SP.

Jabuticaba (*Plinia cauliflora*): Embrapa Mandioca e fruticultura; Universidade, Tecnológica Federal do Paraná, Universidade Federal do Paraná, Embrapa Clima Temperado, UNESP,

Murici (*Byrsonima crassifolia*): found in Amazonia and Cerrado; Researcher José Edmar Urano de Carvalho has a collection at Embrapa Amazônia Oriental. Others: Embrapa Rondonia, Embrapa Acre, Embrapa Florestas.

Pitanga: (*E. uniflora*): Researcher Rodrigo Franzon, Embrapa Clima Temperado. Others: Instituto Agronomico de Pernambuco, Embrapa Tabuleiros Costeiros, Universidade Federal de Pelotas; Universidade Tecnológica Federal do Paraná, Universidade Federal do RS.

Seriguela (*Spondias purpurea*):(Central America and South) ; in Brazil, mainly in Northeast: Embrapa Mandioca e Fruticultura CNPMF has a Germplasm Bank of *Spondias*. Other institutions: Embrapa Agroindústria de Alimentos, Embrapa Tabuleiros Costeiros, Embrapa Mandioca e Fruticultura.

Umbu (*Spondias tuberosa*): Researcher Viseldo Ribeiro de Oliveira - Embrapa Semiárido. Others: Embrapa Mandioca e Fruticultura, Embrapa Tabuleiros costeiros, Universidade Estadual do Recôncavo Baiano, Universidade Estadual de Campinas, INPA



THANK YOU VERY MUCH.

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