

The new EU Novel Foods Directive

and its impact on producer countries: Spotlight Brazil

Dr John Wilkinson visits São Paulo in Brazil to assess the impact of the new novel foods directive from one of the largest markets of exotic fruits in the world.

New research shows that despite the European Union's (EU) simplification of the novel foods directive, Brazil's exotic fruit producers will need strong partnerships with soft drink manufacturers if new, niche fruit juices from Amazonia are to be available in the EU and elsewhere.

When one considers exotic fruits from Brazil, we think of things like mango, papaya, bananas, passion fruit and more recently açai berries. But when you ask Brazilians what the term 'exotic fruits' means to them, their response is somewhat different. Names like umbu, atemoia and caja are bantered around with the main source of these unusual exotic fruits coming from Amazonia. While Brazil is trading these fruits largely internally, changes in legislation in other parts of the world will mean that the increasing consumer global demand for such new niche exotic fruits could be met by countries such as Brazil.

A new generation of juices?

Up until now in the EU, the novel foods directive was holding up the exportation of new fruits to the western world as the expense of getting new novel fruits (and juices) approved was costing millions of dollars and creating a trade barrier between the EU and many other parts of the world.

However, times are changing and a new EU revision of the novel foods directive is due to come into force in 2016/2017. Under the terms 'Traditional foods' as a subsection of the EU novel



foods directive, as long as the organisation/company submitting a new fruit/juice for approval can show 25 years of history of use in the country of origin, the approval process will be significantly shortened and simplified, with approval costs being potentially as low as only ten thousand dollars. Once the first approval of a particular fruit has been granted, a mere notification letter will allow other producers to import the same species 'on the back' of the first approval.

In the case of importing fruits, hundreds of new edible species with unique textures, flavours, smells and colours will likely be newly introduced into the EU. Along with this comes the promise that many fruit juices new to the EU will be available for the first time, creating a whole new generation of modern juices, many of which will have unique functionality. No doubt a whole new group of so called 'superfruits' will emerge, potentially shifting more recent but nevertheless 'established' exotic fruits, such as goji berries and pomegranates, which may consequently be perceived as 'less exotic'.

But what will be the impact of this new EU directive in producer countries, especially in terms of exotic fruits from niche producers? In this article we explore the situation in Brazil and look at the production of exotic fruits and juices which ironically are not only underutilised in Brazil itself but that also are largely unknown in the EU and elsewhere.

At present in the EU, if a fruit has not been sold to a significant degree in a EU member state prior to 1997 it is considered a novel food. For this article, fruits were identified in Brazil that were considered niche exotic fruits by Brazilians, that can be used to make fruit juices and that are new or not sold to a significant degree in the EU (i.e., are considered novel foods).

In search of the exotic

Soft Drinks International commissioned a visit to the biggest fruit distribution centre and food market in Brazil, the Companhia de Entrepósitos e Armazens Gerais de São Paulo – CEAGESP, to research the trading of exotic fruits and their conversion to exotic fruit juices. Based in São Paulo,



Examples of the exotic fruits being sold at CEAGESP. Photo: courtesy of Dr John Wilkinson.

CEAGESP is one of the largest and diverse fruit distribution centres in the world. It is therefore naturally a good starting point to find out what exotic fruits and juices are being traded in and out of Brazil. At the same time CEAGESP and its plethora of traders provides an exciting potential ‘glimpse of the future’ of what we might find on the supermarket shelves in the EU, 10 to 50 years from now, once the new novel foods directive for ‘Traditional Foods’ has been implemented in the EU.

When one thinks about Brazil, it conjures up a country with a consistent tropical climate, wonderful latin music and a country rich in plant biodiversity. With an estimated 250,000 to 750,000 plant species, this vast land could deliver hundreds if not thousands of new species of edible fruits for the rest of the world to enjoy. In that way it was rather disappointing to find that in Brazil’s largest fruit distribution centre, most of the fruits being traded were species well known to global consumers. Strawberries, apples, bananas and the like abounded from virtually every unit in the warehouses.

Out of the several hundred or so companies distributing fruits at CEAGESP, only three seemed to be dealing with so called ‘exotic fruits’ – niche fruits that are not known widely in Brazil. Some of these fruits were from Amazonia, but others were typically from the northeast of Brazil. Supplies are mainly from small scale producers.

Interesting examples

Pitanga (*Eugenia uniflora*) is also known as the Brazilian cherry and for its high vitamin C and calcium content. It is made into a delicious unique tasting juice diluted with water and added sugar. It is not considered a novel food in the EU but has seen limited use in the EU so far.

Capuaçu (*Theobroma grandiflorum*) is a relative of the cacao plant. The seeds contain a group of compounds known as acrines, which have a similar but milder effect compared to caffeine and theobromine. The pulp is used for juicing and the taste ranges from astringent to a mild chocolate/banana flavour. Not a novel food in the EU, it nevertheless has great potential as an alternative for example, to cacao based smoothies.

Atemoya is a uniquely tasty and aromatic hybrid fruit (*Annona cherimoya* and *Annona squamosa*), visually attractive and very popular with consumers in Brazil. Atemoya has high protein, potassium, vitamin C and sugar content. It can be juiced and processed in a variety of other ways (pulp, alcoholic drinks, sweets and preserves). This fruit is not listed as novel food in the EU at present and unless significant history of use can be demonstrated it will require approval before it can be sold in the EU.

Mangaba (*Hancornia speciosa*) is native to South America, with most of its production coming from native vegetation in the northeast of Brazil. The largest producer in Brazil is the northeastern state of Sergipe, where mangaba is the most consumed fruit as a concentrated pulp and ice cream.

Camu-camu (*Myrciaria dubia*) The main producers are in the Amazon although there is one commercial producer in São Paulo. It is mainly exported to Japan. Globally, it has one of the highest vitamin C contents with regard to exotic fruits

Plants and their probable Novel Food status

Common name/Botanical name	Novel food(NF) listed in EU?
Umbu (<i>Spondias tuberosa</i>)	not listed so probably NF
Mangaba, mangabeira (<i>Hancornia speciosa</i>)	not listed so probably NF
Atemoya (<i>Annona cherimola</i> X <i>A. squamosa</i>)	not listed so probably NF
Siriguela (<i>Spondias purpurea</i>)	not listed so probably NF
Camu-camu (<i>Myrciaria dubia</i>)	not listed so probably NF
Bacuri (<i>Platonia insignis</i>)	not listed so probably NF
Pitanga (<i>Eugenia uniflora</i>)	listed so not NF
Capuaçu (<i>Theobroma grandiflorum</i>)	listed so not NF
Graviola (<i>Annona muricata</i>)	listed so not NF
Megafauna (<i>Cassia grandis</i>)	not listed so probably NF
Carambola, starfruit (<i>Averrhoa carambola</i>)	not listed so probably NF
Araza, araçá-boi (<i>Eugenia stipitata</i>)	not listed so probably NF
Cajá, taperebá (<i>Spondias mombin</i>)	listed so probably not NF*
Kiwano (<i>Cucumis metuliferus</i>)	not listed so probably NF
Umbu-caja (<i>Spondia Bahiensis</i>)	not listed so probably NF

with levels at 2000mg/100g of fruit (an orange typically has only 30mg/100g of fruit).

Siriguela (*Spondias purpurea*) is part of the cashew family (*Anacardiaceae*) and widely cultivated across all tropical regions in Brazil, especially in the north and northeast. The red skinned fruits are found in regional markets. The yellow pulp is thin with a big nut but succulent, flavourful and very sweet. It can be eaten and is also used for juicing, ice creams, sweets and in cocktails.

Umbu-caja (*Spondia bahiensis*) has typically thin and smooth skin with a succulent, non-fibrous and sweet-sour pulp which is favoured for juicing, ice cream and a variety of other uses. The tree is native from the dryer regions of northeast Brazil. The fruits are mostly collected in the wild and Bahia state is the main producer.

Sustainable production

Many of the exotic fruits discussed above are only produced in limited quantities as the supply and demand for such products fluctuate. Some producers are consequently finding it hard to continue in the current climate. Marcioni Antonio, from Tropical Frutas, São Paulo, Brazil, an exotic fruit supplier based at CEAGESP stated: "Exotic fruit production has been decreasing or stopping because of the decrease in consumption, so pro-

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Atemoya. Photo: courtesy of Dr John Wilkinson.

NOVEL FOODS
– continued from page 41

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ducers are not motivated to continue to produce. Few niche fruits are lucrative so producers are focusing on fruits which may be more known – for example, avocado and pineapple, that are being consumed in greater quantity. So niche fruits are losing space with small producers."

Makoto Aoki, from Trindade Fruticola (<http://www.fruticolatrindade.com.br/>), another specialist distributor of Brazilian exotic fruits said "The problems with niche exotic fruits are that many producers are collecting fruits from the wild, as they are often not cultivated. This causes problems with inconsistent supply and demand. The quality from small producers can also be very variable. Also they are dependent on intermediaries as the small producers do not transport the fruits to places like CEAGESP. They also do not have the resources to invest in scale up and cultivation experiments. The answer is a need for part-

nerships. At the moment there are no new species of Amazon fruits being distributed even to the south and southeast of Brazil, because there is no demand." It is a chicken and egg situation.

Investment and collaboration

With increasing demand for exotic fruits – especially in the western world – there is huge consumer interest in new flavours and textures of new exotic fruits. Also, the perceived super nutritious, life extension/anti-ageing effects of ingesting biodiverse phytochemicals from such fruits are other qualities fuelling the need for new exotic fruits. To meet this demand, there is a real need for new partnerships to be formed in Brazil to encourage small producers to collaborate for example with soft drink manufacturers to enable larger scale production and consistent quality for these new exotic juiced fruits.

Examples in other continents can offer good role models in regard to the benefits of obtaining novel foods approval in the EU and reaching over 500 million consumers.

For example, baobab fruit from Southern Africa was approved as a novel foods in the EU in 2008 by Phytotrade Africa (together with this author as a consultant) and has resulted in the creation of hundreds of new small entrepreneurial companies collecting baobab sustainably, all across the Southern Africa. Such activity is helping to alleviate poverty and causing the creation of a whole plethora of new baobab drinks such as smoothies and low sugar baobab drinks with legal nutraceutical health claims (such as Chosan Baobab drink in the UK) based around baobab as an ingredient in the EU.

Interesting opportunities?

As the revised novel foods directive will make it much easier for companies to bring new exotic fruits (and juices based on them) into the EU, now is the time for the soft drinks industry to spend more time, money and effort to help these niche producers provide the wonderful biodiversity of Brazil's fruits and fruit juices to the rest of the world. ■



Jaca/jackfruit – originally from Asia but now cultivated in Brazil.
Photo: courtesy of Dr John Wilkinson.

Dr Wilkinson is a Phytochemist and Pharmacognosist and an expert in the regulatory approval of supplements and novel foods.

He has been a consultant on the regulatory approval of natural products in the EU and the USA for over 20 years. He also established the world's first Herbal Medicine BSc degree in Herbal Medicine in the UK in 1994 where he was Senior Lecturer in Pharmacognosy and Phytochemistry.

Prior to this he was awarded the prestigious SERC NATO postdoctoral research fellowship and worked with the Nobel Prize winner George Olah in California, USA, after obtaining his PhD in Organic Chemistry at Imperial College, London.

He provides regulatory advice to companies from targeted one hour teleconferencing problem solving sessions to full dossier submissions for novel foods, supplements, food additives, health claims and labelling. He also undertakes new product development specialising in natural product derived ingredients and is a specialist writer on new ingredients in the natural products industry.

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In his next article, Dr John Wilkinson will look at the possible generic EU approved health claims that can be made for exotic fruits and juices as ingredients in soft drinks.