Compiled by Regina Cronje
ARC-INSTITUTE FOR TROPICAL AND SUBTROPICAL CROPS

Litchi originated from the warm, subtropical areas of southern China and northern Vietnam. The distribution to other countries only started from the 17th century onwards. World production of litchi is estimated to be around 2.75 million tons. More than 96% or 2.64 million tons of the world cultivation are produced in the Northern Hemisphere with China, Taiwan, Vietnam, Thailand and India as the major producers. Total production in the Southern Hemisphere (mainly Africa, Madagascar and Australia) is about 110 000 tons. The production season in the Northern Hemisphere extends from about April to mid-August, and in the Southern Hemisphere from November to February. Countries with smaller production include the Philippines, Indonesia, Israel, USA, Brazil, Mexico, Canary Islands, Mauritius, Reunion, Zimbabwe and Mozambique. The world litchi industry has expanded rapidly in the past 20 years because of increasing interest in exotic fruit in Europe and increasing wealth in Asia, which in turn have provided lucrative returns to growers. However, productivity is low in many countries. Most industries are based on only one or two major cultivars, which limit their production season.

New promising selection from the ARC breeding program

The ARC-ITSC has more than 25 cultivars and 7 000 seedlings established on various research farms. These cultivars are evaluated annually for fruit quality characteristics and yield potential. During the 2012/13 litchi season, a new promising early seedling selection was identified by the ARC-ITSC. It ripens about one week before Mauritius in the Nelspruit area. It has a shoulder width of about 43 mm and a fruit mass of over 43 g. With 78% fruit flesh and only 3% seed, this selection is definitely something to be excited about. The selection will be evaluated further in the coming seasons and yield potential will be determined. Further propagation of the selection is already underway.

(Sources: I.J. Froneman; personal communication, January 2013)
Longest lychee season

The Australian lychee industry is unique in having the longest lychee production season in the world.

Due to the introduction of earlier and later fruiting varieties, and the extensive production zones from tropical to temperate climates, the industry produces fruit from October in Far North Queensland to early April in Northern NSW.

This gives the Australian industry a significant advantage over other competitors on world markets. No other country can offer such a long line of supply of a quality-controlled fresh lychee product.

The Australian Lychee Growers’ Association (ALGA) represents over 250 lychee growers whose farms extend down the east coast of Australia for over 2,500 kilometres from Cooktown in Far North Queensland to Coffs Harbour in NSW.

New carton keeps fruit fresh for longer

The development of a carton with a remarkable clear window flap that helps keep lychees fresh for longer is set to boost sales in the 2012/13 season. It’s new, exciting and has immediately become the industry’s preferred carton.

(Source: http://www.australianlychee.com.au/)

MADAGASCAR

Litchis were brought to Madagascar in the 19th century by French colonists who planted the trees to demarcate their properties. Over the years, the planting area has expanded and the fruit is now located around Tamatave, Madagascar’s 2nd biggest city and only sea-port, on the east coast of Madagascar. Madagascar is the world’s largest exporter of litchis to Europe. The European countries are the traditional markets and absorb about 20,000 tons of Malagasy litchis during the end-of-year holiday period. It is estimated that litchi production involves about 30,000 producers, spreads over 300 km along the east coast of Madagascar and has more than 9,000 collectors, transporters and packers. The litchi industry indirectly affects 200,000 people locally. The Malagasy litchis are pesticide-free. The trees are grown wild and belong to the villages. Availability of Malagasy litchi is between mid-November and the end of January. Mauritius is the only commercial litchi cultivar that is grown in Madagascar.

(Source: U. Wermund; from oral presentation at 4th International Litchi Symposium 2012)
China

Litchi is the 5th biggest crop in China. China produces about 70% of the world’s litchis. In 2011 China produced 1,91 million tons of litchi on about 590 000 hectares. Production is most likely to increase in the coming years. Most fruit is consumed locally, fresh or processed (juice, dried, canned).

In 2012, litchi exports consisted of more than 10 000 tons fresh-, 35 000 tons canned- and 39 tons dried fruit. Main export markets are Hong Kong, the USA, Malaysia, Canada, Philippines, Indonesia, Japan, the Netherlands, Great Britain, Australia, Singapore and Korea. China also imports about 34 000 tons of litchi.

(Source: H.B. Chen; from keynote presentation at 4th International Litchi Symposium 2012)

Promising late maturing litchi cultivar Miaozhongnuo

‘Miaozhongnuo’ was a new promising cultivar selected from open-pollinated seedlings. Bearing trees usually flush four times a year, and start flowering in late March. The fruits ripen from late June to early July with a bumper yield. The main fruit traits are as follows: short heart-shaped, beautiful appearance, crisp flesh, sweet flavour, average single fruit weight of 20,6 g, TSS of 17,5%, high seed abortion rate (normally 90% to 100%), and flesh recovery of 79%. With aborted seed, high quality as well as high and stable yield, this new cultivar should have great potential for economic benefits and a promising market, especially in late-season regions.

(Source: C.M. Liu; from poster presentation at 4th International Litchi Symposium 2012)

Israel

Litchi was introduced by Professor C. Oppenheimer to Israel in 1934, although commercial production did not start for another 40 to 50 years. The litchi industry in Israel decreased from 300 ha in 2000-2005 to 150 ha today, due to low prices on the European market, because of competition from Thailand, China and India. Litchi orchards are established in most areas of Israel, except in the Negev and Arava regions. The climate in Israel is hot and dry in the summer and cold and rainy in the winter. The main cultivars are Mauritius (90%) and Floridian (Brewster), but new plantings also include Kaimana, Nuomici, Sivan, Tamuze, Wai Chee, Hung Long and Yellow Red. The average yield of Mauritius is 10 tons/ha, but it can crop 15 tons and even 20 tons/ha in an “on-year”.

Orchard management practices

Irrigation and fertilisation (by fertigation) is done during the dry, hot season mainly by drip irrigation. Most of the irrigation systems are controlled by computers. More and more orchards are irrigated using recycled water due to shortage of good irrigation water. Water stress is applied after the post-harvest flush in order to get good flowering. As there is no rain in summer, it is no problem to apply water stress by stopping irrigation. After harvest the orchards are mechanically pruned, to maintain tree height and keep the rows open for sunlight. Some growers put nets on the top of the orchards after flowering until the harvest, in order to prevent fruit damage from bats, birds and insects.

(Source: M. Goren; personal communication, February 2013)
Figure 1: Baitangying, an early season cultivar, 3 weeks earlier than Mauritius.

Figure 2: Xianpoguo, a late season cultivar with large fruit, small seed and good eating quality.

Figure 3: Early season litchi seedling with outstanding fruit qualities.

EXCITING NEW SEEDLING SELECTION FROM THE PAST 2012/13 SEASON

An exciting new litchi seedling selection has borne fruit for the first time during the past harvesting season. The seedling is a product of the litchi breeding programme, where the aim is to obtain new, improved cultivars through cross-breeding. The harvesting season of the seedling is a week earlier than the Mauritius cultivar in Nelspruit, ripening at approximately the same time as Fay Zee Siu. The fruit have a length and shoulder width of more than 43 mm, and the average fruit mass is 43 g. Regarding fruit composition, the fruit has 78% aril, 19% skin and only 3% seed. With a good taste, excellent fruit size and small seed, this selection is certainly one of the most promising from the breeding programme so far. Further evaluation is however necessary to determine yield potential and to confirm the initial findings of the 2012/13 season. Multiplication of the seedling by air-layering and grafting has already commenced.

USA

In the United States, commercial production of lychee takes place in Florida, Hawaii and California. Florida is the largest U.S. producer (485 ha) of lychee, followed by Hawaii (120 ha) and California (24 ha). Total annual production of lychee fruit in the United States is estimated at 433 tons, which is considered minuscule compared to world production.

Demand for lychee

The demand for fresh lychee in the United States has increased considerably within recent years. This has been due in part to increases in Asian ethnic populations in the United States and to health-conscious consumers who purchase fruit in specialty stores. In the past, the demand was mainly for the frozen and canned fruit, but the demand for the fresh fruit has increased substantially. The main lychee suppliers to the United States are Taiwan, Mexico, China, and Israel.

(Source: http://edis.ifas.ufl.edu/fe496)

INTERESTING FACTS

- Seven lychees (one serve) contain as much vitamin C as a small orange and provide 100% of the recommended daily intake of vitamin C.
- Lychees are also ranked second behind strawberries in antioxidant levels.
- They have fewer than 65 calories per 100 g and are fat-free.
- Lychees are also medium GI, with a GI level of 57. Their slow releasing energy makes them a great snack to keep you going.