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**Betel-quid and Areca-nut Chewing and
Some Areca-nut-derived Nitrosamines**



LYON, FRANCE
2004

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Table 3. Production of areca nut by country since 1961 (in millions of tonnes)

Country	1961	1971	1981	1991	2001
Bangladesh	62 995	23 369	25 051	24 120	47 000
India	120 000	141 000	195 900	238 500	330 000
Indonesia	13 000	15 000	18 000	22 812	36 200
Kenya	NA	NA	NA	100	90
Malaysia	6 500	3 000	2 500	4 000	2 500
Maldives	1	1	5	16	37
Myanmar	8 000	19 203	25 807	32 270	51 463
Taiwan, China ^a	3 718	10 075	24 358	111 090	165 076
Thailand	NA	NA	NA	13 250	20 500
World	428 428	423 296	583 242	892 316	1 305 732

From FAO (2003)

NA, not available

^a From Council of Agriculture, ROC (2003)

graphical cultivation in South and South-East Asia and in the Pacific basin was given by Furatado (1933). Areca nut for chewing is obtained exclusively from *Areca catechu*, which is believed to be native to Sri Lanka, West Malaysia and Melanesia (IARC, 1985a). This tropical palm tree bears fruit all year, which are ovoid or oblong with a pointed apex, measuring 3–5 cm in length and 2–4 cm in diameter. The outer surface is green when unripe and orange-yellow when ripe. The seed (endosperm) is separated from a fibrous pericarp, is rounded with a truncated base and is opaque and buff-coloured with dark wavy lines. It has a characteristic astringent and slightly bitter taste and is consumed at different stages of maturity according to preference. An individual may consume the whole nut or thin slices of the nut, in its natural state or after processing in many forms.

The nut may be used fresh or it may be dried and cured before use, by sun-drying, baking or roasting (Table 2). Areca fruit may also be boiled and fermented (in eastern parts of India, Sri Lanka) by covering it with mud to soften the nut for consumption. These treatments change the flavour of the nut and its astringency. In Taiwan, China, areca nut is most often used in the unripe stage when it is green, like a small olive.

Areca nut is known colloquially in Hindi and other languages in India as *supari*; it is called *puwak* in Sri Lanka, *gua* in Sylheti (Bangladesh), *mak* in Thailand, *pinang* in Malaysia, *daka* in Papua New Guinea, *pugua* in Guam and *Kun-ywet* in Myanmar (IARC, 1985a).

Chemical constituents

Comprehensive analyses of the chemical composition of areca nut have been reported and reviewed (Raghavan & Baruah, 1958; Shivashankar *et al.*, 1969; Arjungi, 1976; Jayalakshmi & Mathew, 1982). The major constituents of the nut are carbohydrates, fats,