

Samoa

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Samoa is a country governing the western part of the Samoan Islands in the South Pacific Ocean. It was admitted to the United Nations on 15 December 1976. The entire island group, inclusive of American Samoa, was known as the Navigators Islands before the 20th century because of the Samoans' seafaring skills.

Coconut is the most predominant crop grown in Samoa. Its traditional value and multipurpose uses make it one of the most important crops in the everyday lives of Samoans as an important source of food and cash. In 1996, Samoa exported coconut food products such as coconut cream, copra, copra meal and coconuts, worth SAT 3.598M (US\$ 1.3M). The Agricultural Census (1989) stated that 96% of farmers' holdings grew coconuts, which bring to a total land area of 27,692 ha. In Samoa, one of the most important crop mixtures being identified is coconut intercropped with cocoa, the others being crops like banana and taro (Agricultural Census 1999). However, due to global price fluctuations of coconuts, there is a need to upgrade and improve approaches in coconut farming and encourage adoption of new production and processing technologies to enhance farmers' incomes.

Under a COGENT-supported project, farmers' coconut varieties were characterized, documented and conserved on farm. A farmer participatory survey was conducted in Siufaga Savaii where seven varieties were identified. These varieties include the Samoan Tall (SMOT), Samoan Tall Samatau (SMOT01), Niu Vai Tall (NVIT), Niu Afa Tall Samoa (NAFT), Niu Lea Dwarf Samoa (NLAD02), Samoa Yellow Dwarf (SYD) and Samoan Tall Siufaga Savaii (SMOT03). A 1.22 ha coconut germplasm conservation site containing 11 local coconut varieties has been established at the Olomanu Seed garden (Osborne 2005).

References

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Samoa Tall Spicata (SMOT03)

Bourdeix R, Tuia V, Peters A

Conservation

The Samoa Tall Spicata (SMOT03) could be found at the Olomanu Coconut Seed Garden, Upolu Island in Western Samoa. The number of living palms at Olomanu has not yet been recorded in the Coconut Genetic Resources Database.

History

In 1931, FBH Brown first described the Samoa Tall Spicata as a new species of palm, called *Diplothemium henryanum*. Later, other botanists such as Jacob (1941) and Ninan et al. (1960) reclassified this palm as a variant of the *Cocos nucifera* L species.

Identification

The botanist Parham described in 1972 the Samoa Spicata coconut palm as follows: “*Palm, 10-15 m high; leaves pinnate, glaucous awn pale beneath; spadix simple, spicate, 100 cm long, spathes 2; only female flowers seen*”. In all coconut growing regions, Spicata palms bearing inflorescences with numerous female flowers or fully covered with female flowers are rare. This phenomenon also occurs in Tall and Dwarf palms. Sometimes such inflorescences have one or two spikelets. Nevertheless, male flowers can always be found in Spicata inflorescences although they are less numerous than in a normal inflorescence. There are two hidden adventitious male flowers located at the base of each female flower.

Yield and production

Although gathering of yield data started in 1998, no data is yet recorded in the Coconut Genetic Resources Database.

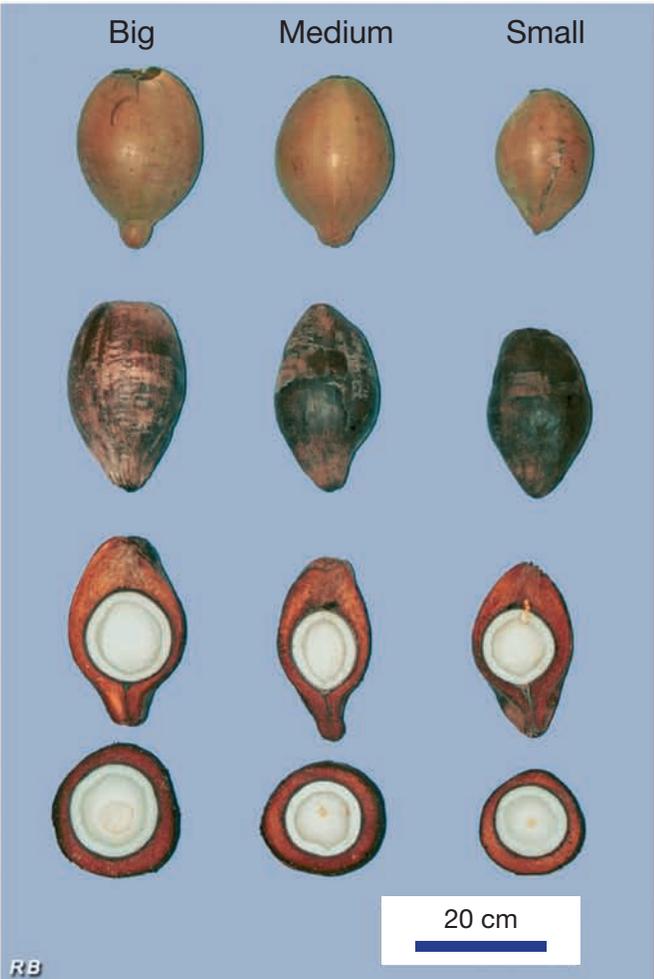
Other information

Farmers appreciate Spicata varieties because if they throw a stone or a piece of wood on the palm crown, the fruits easily separate from the bunch and fall. Spicata palm has enthralled several generations of researchers. Most countries produce Dwarf x Tall hybrids because of the ease of pollinating the mother palm. This is due to its shorter stature and the relative precocity of the resulting hybrid. However, this requires careful emasculation of the parent to prevent self-pollination. The possibility of finding male-sterile lines among the coconut populations remains a challenge. Spicata palms, with only a few male flowers, were initially seen as a possible way to get male-sterile coconut inflorescences. But inside a Spicata inflorescence, there are adventitious male flowers hidden under the female flowers. As these female flowers are numerous and close to each other, the hidden male flowers are very difficult to remove. In fact, to take off all the male flowers, the only way is to cut and remove about a third of all the available female flowers. This task is harder than the emasculation of a normal coconut inflorescence.

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Samoan Tall Spicata (SMOT03)



Samoan Yellow Dwarf (SYD)

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Conservation

According to the 2002 Coconut Genetic Resources Database (CGRD), the Samoan Yellow Dwarf (SYD) is conserved only by 3 accessions totalling 192 palms. Ten of these palms are in India and 182 in Vanuatu. This variety is not conserved in its country of origin.

History

The accession which is conserved in India comes from Vaitogi village in Tutuila Island, American Samoa, and was locally known as 'Niu Oma'. The accession conserved in Vanuatu comes from Apia, the main city of Upolu Island, Western Samoa. A few seednuts with yellow sprout were found within a lot of Red Dwarf seednuts which were supposed to be all red-sprouted. These seednuts with yellow sprout were kept apart. They are the origin of the Samoa Yellow Dwarf variety conserved in Vanuatu. A plot of 100 yellow Dwarfs from Apia was also planted in Tonga in 1992, but this planting is not referenced in the CGRD.

Identification

Compared with the Malayan Yellow Dwarf, the Samoan Yellow Dwarf conserved in Vanuatu produces smaller fruits of a paler yellow colour. Its vertical growth is quite slow. In Vanuatu, at ten years old, the stem measured from the ground to the base of the oldest green frond does not exceed 3.5 m. At the same age and in the same growing conditions, the Malayan Yellow Dwarf is more than one meter taller. The stem is thicker than those of the Malayan Yellow Dwarf. When the growing conditions are excellent, such as in the rich volcanic soil of Vanuatu, the stem starts producing a little bole. The inflorescence stalk is short, like those of the Malayan Dwarf varieties. It should be useful to use molecular techniques to check the relationship between the Samoan Yellow Dwarfs conserved in Vanuatu and India on the one hand and the Malayan Dwarf varieties on the other.

Yield and production

In Vanuatu, the composition of the fruit is as follows: weight of the fruit: 864g, weight of nut: 623g, meat weight: 281g. SYD starts producing 3-4 years after planting and gives 60 to 80 fruits per palm a year on average.

Other information

According to Gangolly et al. (1957), Hamilton and Grange (1937) recorded seven varieties of Dwarf palms in Samoa, which were subsequently planted at Buitenzorg (now Bogor Botanical Garden, in Java, Indonesia). Nowadays, there are less than seven Dwarf varieties recorded in Samoa. SYD is more tolerant to cyclonic winds than the Malayan Yellow Dwarf.

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Samoa Yellow Dwarf (SYD)

