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| **Item type** |  |
| **Bibliography** | Thomson, Lex A.J.; Butaud, Jean-François; Geraghty, P.A.; Wilson, W.H.; Mabberley, D.J. (2023) Breadfruit in the Pacific Islands, its domestication and origins of cultivars grown in East Polynesia and Micronesia, In: Journal of South Pacific Agriculture, Vol.26, 1-22, The University of the South Pacific, Suva, Fiji |
| **Abstract / Content summary** | Cultivated breadfruit comprises domesticated cultivars of Artocarpus altilis (breadfruit), a species native to Remote Oceania, with hybrid cultivars with A. mariannensis (dugdug), a species from Palau and Mariannas Islands. Artocarpus altilis is not a domesticated cultivar group of A. camansi (breadnut), as currently understood, but rather a genetically and morphologically distinctive sister taxon, that has been reproductively long isolated from A. camansi. Artocarpus altilis regenerates rapidly from root suckering following canopy and root damage: this is an important trait both for adaptation to the South Pacific Tropical Cyclone zone and for its domestication. This trait is not known in A. camansi which can be propagated only by seeds. The pre-historic domestication of A. altilis and selection of breadfruit cultivars was initiated by Austronesian peoples in Remote Oceania—in its putative natural range in the south-eastern Solomon Islands and/or northern Vanuatu. Major secondary centres of breadfruit selection and cultivar diversity are in the south-west Pacific (Fiji and adjacent central-western Polynesia viz. Sāmoa and Tonga), the eastern Caroline Islands (Pohnpei) and eastern Polynesia (Marquesas and Tahiti). Generic terms for breadfruit in Polynesian languages derive mainly from proto-Oceanic \*kulu (A. camansi and A. altilis), and proto-Micronesian \*mai (A. mariannensis × A. altilis hybrids in Micronesia). Morphological and genetic studies of A. altilis show eastern Polynesian breadfruit cultivars to be closely related to Micronesian cultivars, while central-western Polynesian cultivars are related to those from eastern Melanesia (Solomon Islands, Vanuatu, and Fiji). The most widely grown seedless and few-seeded diploid cultivars in Fiji and adjacent central-western Polynesia (Sāmoa and Tonga) are genetically very different from the seedless triploid cultivars in eastern Polynesia. A striking finding of breadfruit genetic studies is that a single ‘genotype’ (mä'ohi) accounts for half of the prolific assortment of morphologically diverse, triploid breadfruit cultivars in eastern Polynesia and Micronesia. Given that there is no compelling documented historical, archaeological, linguistic, or genetic support for direct human contact and ancient exchanges between Micronesia (Caroline Islands) and eastern Polynesia, it is postulated that selected breadfruit cultivars, including triploid or polyploid cultivars of A. altilis, were introduced into eastern Polynesia (Marquesas) and the Caroline Islands (Pohnpei) from Polynesian Outlier Islands.
Key words: Artocarpus altilis, A. mariannensis, A. camansi, breadfruit, tree domestication, Near Oceania, Remote Oceania, Green’s line, Micronesia, Polynesia, Solomon Islands, Vanuatu |
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