**Phytomonas spp.** Both phloem feeders on coconut palm. What are the similarities between Phytoplasma (prokaryote) and Hartrot, a disease of coconut (called Marchitez when affecting oil palm) has the same syndrome as Lethal Yellowing Disease of coconut in the Caribbean. Besides coconut palm, LY also affects more than 35 other palm species. The disease was first reported in the Cayman Islands in 1834; by 1980 LY had killed over 7 million coconut palms in Jamaica alone. M. crudus is known from northern South America (Brazil), Central America; Mexico, and several islands of the Caribbean as far south as Honduras and Dominican Republic. However the southern limits of LY are the Dominican Republic and Honduras, and experimental demonstration of the LY transmission by Myndus was successful only in Florida.

Another Myndus species—M. taffini—is prohibiting any new introduction of coconut germplasm in the Pacific island of Vanuatu. M. taffini Bonfils is the vector of the Coconut Foliar Decay Virus (CFDV), a disease killing all the introduced coconut varieties in Vanuatu (Julia, 1982; Julia et al. 1985). Only the local variety, the “Vanuatu Tall” is tolerant to the disease, caused by a small DNA virus (Randles et al. 1986, Randles and Hanold, 1989). M. taffini appears to be endemic to Vanuatu. An additional Myndus species, M. adiopodoumeensis Synave, is suspected as the vector for a lethal yellowing disease (LYD) in West Africa (known as Cape Saint Paul Wilt in Ghana and Kaincopé disease in Togo) (Dery et al. 1996.). But its role in the propagation of the LYD has not yet been proven. In East Africa, similar LY (sibling species, subspecies?) of what are now considered "different Myndus crudus"? Is there another vector? Could M. crudus transmit CFDV virus? And can M. taffini transmit LY? What are the similarities between Myndus spp and Lincus spp, both phloem feeders on coconut palm? What are the similarities between LY Phytoplasma (prokaryote), and Hartrot Phytoponas (eukaryote), which both multiply in coconut sap?

**Insect vectors**

The first insect vectors were discovered in West Africa in the years 1979-1982, mainly thanks to the strategy of insect introductions en masse in cages (Dollet, 1992). The discovery of Recilia mica Kramer (Homoptera, Cicadellidae, Deltocephalinae) as the vector for blast disease, which is the main nursery disease of oil palm and coconut and presumed to be caused by a phytoplasma, was the first success opening the doors for several others (Desmier De Chenon 1979). R. mica, vector of blast, also transmits phytoplasma to periwinkle (Dollet 1980). Then two species of Sogatella (Delphacidae)—S. Kolophon Kirkaldy and S. cubana Crawford were shown to be vectors for Dry bud rot, another nursery disease of coconut and oil palm, presumed to be viral (Julia 1979, Julia and Mariana, 1982). During 1980-1983 experiments provided evidence that Myndus crudus Van Duze (Homoptera: Cixiidae) was the vector of the causal agent of Coconut lethal yellowing (LY) in Florida (Howard and Thomas 1980, Howard et al., 1983; 1984). LY is the most devastating disorder of coconut in the Caribbean. Besides coconut palm, LY also affects more than 35 other palm species. The disease was first reported in the Cayman Islands in 1834; by 1980 LY had killed over 7 million coconut palms in Jamaica alone. M. crudus is known from northern South America (Brazil), Central America; Mexico, and several islands of the Caribbean as far south as Honduras and Dominican Republic. However the southern limits of LY are the Dominican Republic and Honduras, and experimental demonstration of the LY transmission by Myndus was successful only in Florida.

Hartrot, a disease of coconut (called Marchitez when affecting oil palm) has the same syndrome as Lethal Yellowing Disease in the region stretching between Peru/Brazil and Honduras through Trinidad. Phloem-restricted Phytomonas spp. (flagellate protozoa, Trypanosomatidae) are responsible for this syndrome (Dollet 1984, 2001). Different species of Lincus Stal (Hemiptera: Pentatomidae, Discocephalinae) are vectors of these trypanosomatids (Desmier De Chenon 1984, Louise et al. 1986, Dollet et al. 1993)

**Discussion.**

Different Myndus species are associated with the propagation of very severe wilt diseases of coconut. But their role was demonstrated so far only in Florida. Why? Is the percentage of infectious insects very low? Are there distinctive taxa (sibling species, subspecies?) of what are now considered “Myndus crudus”? Is there another vector? Could M. crudus transmit CFDV virus? And can M. taffini transmit LY? What are exactly the similarities between Myndus spp and Lincus spp, both phloem feeders on coconut palm? What are the similarities between LY Phytoplasma (prokaryote), and Hartrot Phytoponas (eukaryote), which both multiply in coconut sap?
References


Louise, C., Dollet, M., Mariau, D. 1986. Research into Hartrot of the coconut, a disease caused by Phytomonas(Trypanosomatidae), and into its vector Lincus sp. (pentatomid) in Guiana. Oléagineux. 41, (10) : 437-444.
