



The mango (*Mangifera indica*) tree in Benin: main cultivars and socio-economic importance.



Background

Mangos have existed in East Africa since the 14th century, but they were first reported in West Africa in Senegal only at the beginning of the 19th century. Mango trees then started to become widespread in West Africa, with grafting on rootstock first being used for their propagation. The first mono-embryonic cultivars were multiplied using grafting in coastal countries of French-speaking, and then gradually spread to West African countries during the first half of the 20th century. The optimum zone for mango trees in West Africa comprises an area situated in the Sudano-Guinean region, extending from Ziguinchor to Abuja, i.e. from eight to forty degrees north in latitude. This area broadly covers Southern Senegal, the Gambia, Southern Mali, Eastern Guinea, Northern Côte d'Ivoire, Southern Burkina Faso, Northern and Central Ghana-Togo-Benin-Nigeria and also Southern Niger. But mangoes can also be grown around this Central zone (with some constraints). Statistical data on areas of cultivated mangoes need to be improved...



Standards and Trade Development Facility



Photo 1: Cv Amélie (= Gouverneur in Benin)

Early cultivars



Photo 2: Cv Zill



Photo 3: Cv Eldon

In Benin, Amélie (Photo 1) and Zill (Photo 2) are considered to be early cultivars as they mature from the beginning of April to mid-May in Northern and Central Benin. Eldon (Photo 3) and Ifac (Photo 4) cultivars maturing from mid-April to the end of May in this zone are also considered as early cultivars (Vayssières et al., 2008).

Regional Fruit Fly Control Project in West Africa (WAFFI)



Importance of mango as food crop

The mango tree is a bulky rural tree providing both food and protection. In Northern Central Benin, as in other similar agro-ecological zones in neighbouring countries, the mango serves both as a fruit crop and as a subsistence crop for family farms. Since it ripens at the end of the dry season and at the start of the rainy season, the mango is a basic source of nutrition for rural populations living in the Sudano-Sahelian regions of West Africa. Being rich in vitamins, antioxidants and trace elements, it plays an important nutritional role for populations of the rural poor living in relatively deprived zones and compensates, for instance, for the absence of oil palm. Accordingly, it is essential to retain and reinforce the vital nutritional contribution of mango trees throughout West Africa.



Photo 4: Cv Ifac 3

Seasonal cultivars

Photo 5: Cv Springfels



Photo 6: Cv Dabshar



In northern and central Benin, Springfels (Photo 5) and Dabshar (Photo 6) are considered to be seasonal cultivars maturing from the end of April to the beginning of June. Ruby (Photo 7) and Kent (Photo 8), which mature from the beginning of May to mid-June, are considered to be end-of-season cultivars. For a given cultivar, maturing period varies depending on the country and the agro-ecological zone.

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Importance of mango in reducing poverty

More than 90% of African mango production is produced by small family farms with low capacity for financial investment. The importance of fruit flies in small family farming leads to physical losses that drastically reduce marketable production. Due to the status of fruit fly as a quarantine pest, phytosanitary constraints can even lead to bans on exports of this high added-value product. The outcome is a huge loss of economic opportunity in terms of income for the populations involved. Increased production and marketing of undamaged mangoes are important in reducing poverty, particularly in the Sudanian zone (*sensu lato*). Therefore, controlling fruit flies where they constitute the major phytosanitary constraint will help save the mango industry and thus alleviate poverty.



Photo 8: Cv Kent



Photo 9: Cv Palmer



Palmer (Photo 9) and Smith (Photo 10) cultivars are classed as end-of-season cultivars as they mature from mid-May to the end of June. Keitt (Photo 11) and Brooks (Photo 12) cultivars are considered to be late cultivars, with Keitt maturing from the end of May to the beginning of July and Brooks from the beginning of June to mid-July (Vayssières et al., 2008).

Maturing periods vary depending on the country and the agro-ecological zone. For a same cultivar, maturity is first recorded in Côte d'Ivoire and finally in Senegal.

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Large genetic variability of mango

The mango, *Mangifera indica*, belonging to the family Anacardiaceae, is a rustic tree with wide genetic variation. It is possible to differentiate “mangots”, fibrous and poly-embryonic types, from grafted mangoes, mono-embryonic. Mango originates in the Indo-Burma region where it has been cultivated for more than 2000 years. India has the largest collections of varieties, with more than one thousand cultivars recorded. Several West African countries have strong collections containing more than 100 cultivars (Côte d’Ivoire, Guinea, Mali, etc.).

In general, only about 10-12 cultivars are favored for export (Amélie, Palmer, Kent, Keitt) and in national-regional markets (Eldon, Ruby, Springfels, Brooks, etc.).



Photo 10: Cv Smith

Late cultivars

Photo 11: Cv Keitt



Photo 12: Cv Brooks (or late)



BIBLIOGRAPHY

- Rey J.Y., Diallo T.M., Vannière H., Didier, C., Keita S., Morodian M., 2004. La mangue en Afrique de l’Ouest francophone. *Fruits*, 59, 121-129.
- Vayssières J.F., Korie S., Coulibaly T., Temple L., Boueyi S., 2008. The mango tree in northern Benin (1): cultivar inventory, yield assessment, early infested stages of mangos and economic loss due to the fruit fly (Diptera Tephritidae). *Fruits*, 63, 335-348.

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