



Field trials in Burkina Faso

Trials were set up in collaboration with the Centre Nationale de Semences Forestieres (CNSF), and outplanted in two contrasting sites, Dori in the Sahelian zone (with mean annual rainfall below 300 mm) and Gonsé, near Ouagadougou (rainfall about 750 mm).

Three multipurpose fruit trees of local ecological and economic value were selected: *Acacia senegal* (the Gum tree, Gommier), *Adansonia digitata* (Baobab) and *Parkia biglobosa* (the African Locust Bean tree, Néré). All these species are known to form, and benefit from, mycorrhizas. *P.biglobosa* was not included at Dori as the climate there is too dry for this species.

Mycorrhizal Inoculum was cultured using the technique developed in Tanzania. Large troughs were dug out, lined and filled with topsoil harvested from under local *Acacia senegal*, *Adansonia digitata* or *Parkia biglobosa*; each tree species was to receive inoculum cultured from starter soil taken from under a mature tree of the same species. The trap troughs were sown between 21 and 26.05.05, maize and beans being used as bait plants in one case, and millet and beans in the other. Bait plants grew well, some almost reaching a height of 2 m; they were cut down after 9 and 11 weeks respectively, and the inoculum was prepared and applied as a layer directly underneath pre-germinated seed 10 days later. 250 g mixed soil and root inoculum was applied in each tree bag. 490 of each species were sown at each centre (245 inoculated and 245 control).

392 seedlings per species, 196 inoculated, 196 control) were outplanted at Gonsé, near Ouagadougou, on 29.08.05 at age 3 months. At Dori, 392 *Acacia senegal* and 126 *Adansonia digitata* were outplanted on 14.08.05 at age 1.5 months. (The low number of *Ad.digitata* available was due to a poor nursery survival rate.) The plan had been to plant four blocks of 25 plants of each species at each site, each block also having 24 edge plants which were not to be included in the measuring. This was done at Gonsé, but at Dori there were insufficient plants of *Ad.digita* at the end of the nursery phase to fit this outplanting design; available plants were distributed over the whole plot, rather than being compacted into a smaller number of blocks, and it appears that some edge plants may have been included in the measuring.

Unfortunately, at both outplanting sites, the seedlings suffered heavy grazing damage; the drought was unusually severe, there was very little vegetation available for domestic or wild animals, and the Gonsé site was unprotected. There was perimeter fencing at Dori, but it would not have been proof against rabbits or rats, the suspected culprits there. In view of this, it is not clear how much weight, if any, can be attached to the results; however, stem collar diameter must bear some relation to the maximum size achieved by the plant before being grazed off, so may carry some weight. This measurement suggests a benefit from mycorrhizal inoculation at Gonsé, but not at Dori. However, there were some anomalies in the records at Dori.