

.14 Trees for shade

Shade trees are important because they reduce on high temperatures experienced during the day. Other benefits of shade trees are beauty, fruits, as a windbreak and in improving the microclimate of the area.

Tree/shrub species for shade include:

Specie	Known as:
<i>Acacia albida</i>	Winter thorn
<i>Cassia siamea</i>	Yellow Cassia
<i>Cassia spectabilis</i>	Golden Cassia
<i>Cordyla africana</i>	Wild mango

Ficus species (Figs):

Specie	Known as:
<i>Mangifera indica</i>	Mango
<i>Manihot glaziovii</i>	Mtambula, N
<i>Melea azedarach</i>	Bead tree
<i>Tamarindus indica</i>	Tamarind
<i>Trichilia emetica</i>	Musikili, N, Cape mahogany

*(Simute, 1992; Mulofwa, 1994)

1.15 Live fences and Windbreaks

1.15.1 Live fences

These are barriers of closely spaced trees or shrubs for protection against livestock and human interference. Fencing of fields, gardens, fodder banks, woodlots and around homesteads makes improved management practices possible. With a fenced field, a farmer can improve his/her management of crop residues, pastures, trees, etc., by keeping out livestock and other people.

Live fencing is an economic way of fencing large areas because once established living fences become permanent. They are cheap to establish and maintain as compared to barbed wire and other dead fences, which need constant maintenance. Living fences may also produce fruits, fodder and medicines (Simute, 1992; Mulofwa, 1994).

Characteristics of tree species for live fencing include:

- _ thorny and or densely branched
- _ Easy to establish and maintain
- _ Able to withstand temporary water logging when planted in gardens
- _ Fire resistant Providing useful by-products

Suitable species for live fencing therefore are:

Specie	Known as:
<i>Acacia albida</i>	Winter thorn

<i>Acacia ataxacantha</i>	
<i>Acacia polyacantha</i>	Hook thorn
<i>Agave sisalana</i>	Sisal
<i>Bougainvillea</i> spp.	
<i>Ceasalpinia decapetala</i>	Mauritius thorn
<i>Balanites aegyptiaca</i>	Desert date
<i>Commiphora africana</i>	
<i>Commiphora mollis</i>	
<i>Dovyalis caffra</i>	Kei apple
<i>Euphorbia tirucalli</i>	Rubber hedge euphorbia
<i>Ricinus communis</i>	Castor oil plant
<i>Ricinodendron rautanenii</i>	Mungongo
<i>Ziziphus abyssinica</i>	Kankande
<i>Ziziphus mauritiana</i>	Indian jujube
<i>Tharacantha</i> spp.	
<i>Thevetia peruviana</i>	Yellow oleander

1.15.2 Windbreaks

Trees and/or shrubs can be planted around fields, homesteads, etc to protect crops and buildings from strong winds. Yields of crops are known to increase when windbreaks are established in areas with strong winds. Windbreaks can also produce fruits, fodder and medicines.

Suitable species that are used as windbreaks in Zambia:

Specie	Known as:
<i>Azadirachta indica</i>	Neem
<i>Cassia siamea</i>	Yellow cassia
<i>Cassia spectabilis</i>	Golden cassia
<i>Casuarina</i> spp.	Whistling pine
<i>Eucalyptus</i> spp.	Gums, especially for commercial farmers
<i>Grevillea robusta</i>	Silky oak
<i>Melea azedarach</i>	Bead tree
<i>Tamarindus indica</i>	Tamarind
<i>Trichilia emetica</i>	Musikili, cape mahogany

*Simute, 1992; Mulofwa, 1994

1.16 Trees for soil conservation and Improvement

Trees and/or shrubs can be left in the field when opening up new land for agriculture because of their ability to fix nitrogen, or to take advantage of leaf fall which will add organic matter to the soil and conserve soil moisture through mulching.

Trees and/or shrubs can be planted on grass strips (buffer strips), soil conservation structures (bunds), storm drains, marker ridges etc. The main benefits are:

- _ stabilisation of soil conservation structures
- _ preservation of conservation structures

- _ marking of contour ridges
- _ in the case of shrubs, acting as barriers to water run-off
- _ provision of ground cover and fertility improvement
- _ Provision of both wood and non-wood forest products.

Some trees and/or shrubs can be planted or sown for improvement of fallows. These perform the function of ground cover and fertility improvement through litter fall and nitrogen through root nodules.

Suitable species include:

Specie	Known as:
<i>Acacia albida</i>	winter thorn
<i>Afzelia quanzensis</i>	Mupapa, pod mahogany
<i>Albizia harveyi</i>	
<i>Cajanus cajan</i>	Pigeon pea
<i>Cassia siamea</i>	Yellow cassia
<i>Cassia spectabilis</i>	golden cassia
<i>Grevillea robusta</i>	Silky Oak
<i>Leucaena leucocephala</i>	lusina, lukina
<i>Pericopsis angolensis</i>	Mubanga
<i>Psidium guajava</i>	Guava
<i>Sesbania sesban</i>	River bean

*(Simute, 1992; Mulofwa, 1994)