

- **Recommended varieties:**  
MPB51 (Brianbeck) for higher yields and MPB39 with very high tolerance to the Alectra parasite (Mhlilwane). MPB 51 (Brianbeck) has given up to 2355kg (47 bags) bambaras in pod per hectare in research managed trials.



- Landelanisa ukutshalwa kwezithombo gendlela efanele.

- Ungatshali indluba kudlula kanye emva kweminyaka emibili endaweni eyodwa. Sebenzisa inhlanyelo ehloliwe, ngokusebenzisa imithi enjenge (fungicide ne Thiram).

- Hlanyela emhlabathini onomswakama ngesikhathi esifanele (November-December)

- Tshala emgojaneni ongamasentimitha amane kuya kwayisishiyagalombili.

- Hlanyela ezikhaleni ezivumelekile:

- \*\*plant to plant 10-20 cm
- \*\*row to row 50-70cm

- usa ukhula esivandeni ngezinkathi zonke.

- Phakamisa inhlabathi eceleni kwezitshalo ngesikhathi zichakaza.

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Agriculture, Rural Development  
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MPUMALANGA PROVINCIAL GOVERNMENT

**Bambara Groundnut**  
*Vigna subternea (L.) Verdc*

January 2012

*Jugo Beans,  
Indluba,  
Jugoboon,  
Inhlowa,  
ditloo-marapo*



Bambaras groundnuts (*Vigna subterranea* L.) are a popular crop throughout sub-Saharan Africa. Bambaras are believed to have originated in the area between Yola in Nigeria to Garoua, in Cameroon.

The estimated production in Africa is about 330,000t. Nigeria leads in production with 100,000t followed by Burkina Faso, Ghana, Mali, Cameroon and Ivory Coast. It is grown at subsistence level in almost all the sub-Saharan countries in Africa.

In South Africa, bambaras are grown mainly in Limpopo, Mpumalanga and KwaZulu Natal provinces. In Mpumalanga, bambaras are grown by the small holder African farmers in the low and middle veld areas, both as food and cash crop. It is the third important crop grown in the Lowveld region after maize and groundnuts. They are rarely grown in crop mixtures and always the dominant component in any intercrop.

As bambaras are considered the most drought tolerant legume after pigeonpea, its importance in the traditional farming systems of the vast, semi-arid and arid regions in South Africa can not be over emphasised.

Bambaras are herbaceous annual plants with creeping stems at ground level. It has well-developed taproot with profuse, geotropic lateral roots. The roots form nodules for nitrogen fixation in association with African wild-type Rhizobia.

The pods usually develop underground after pollination and fertilization. Most varieties have single-seeded pods, but pods with three seeds have been collected in Congo. Mature pods are indehiscent, wrinkled, ranging from yellowish to reddish dark brown in colour. Various testa patterns are also found, including mottled, blotched or striped. The testa colour varies from cream to deep purple.

#### **Soil and climatic requirements:**

Bambaras are grown in hot, dry regions which are marginal for other legumes. Its optimum temperature is 20-28°C. The crop is susceptible to water logging. It cannot withstand heavy rain during fruiting and harvesting. It is best adapted to a well-distributed rainfall of 500-1200mm. It grows satisfactorily up to an altitude of 1500m above sea level. Bambaras do well on poor, sandy, well-drained soil and tolerate a pH range of 4.5 to 6.5.

#### **A-PESTS, DISEASES & PARASITES**

*Cercospora* leaf spot, *Sclerotium rolfsii* (stem rot), *Fusarium* wilt and *Collectotrichum capsici* are the most important fungal diseases in the Lowveld. In addition to fungal diseases, several virus symptoms have been observed. Bambaras are relatively free of major insect pests. However, aphids and termites cause serious damage in some areas. The root nematodes *Meloidogyne* spp. are a real threat to bambaras in light soils. These nematodes cause yield reduction directly and also facilitates infection by *Fusarium*. Massive population build-up may occur under bambaras, which will damage crops planted next in the rotation.

#### **HARVESTING**

Bambaras usually take 100-140 days to mature depending on the cultivar and climatic conditions. The time of harvesting of the crop is not critical compared to groundnuts as bambaras can be harvested at 'green mature' stage or at the 'fully mature' stage. Pods do not shatter if harvested at the green stage and the foliage can be fed to the livestock. The pods do not easily sprout in the soil when they are mature, as in the case with the Spanish groundnuts. However, delay in harvesting is likely to lead to pod rot under humid and moist conditions.

#### **VARIETIES**

Bambara varieties, in general, are location specific in their photoperiod requirements and consequently, high yielding varieties from one locality may fail to do well in another place. Therefore, emphasis has been given in selecting and improving local cultivars than the introduction of exotic varieties.

#### **USES**

Bambara groundnuts are essentially grown for human consumption and make a complete food. On an average, the seeds contain 63% carbohydrate, 19% protein, and 6.5 % oil. The gross energy value of bambaras is higher than that of common pulses like cowpeas, lentil and pigeon pea. The high lysine content in bambara seed makes it a high quality protein source and a good supplement to maize based diets.

Bambara groundnuts are consumed in many ways. They can be eaten fresh or grilled while still immature. Bread is made from the bambara groundnut flour in Zambia and the seeds are canned in Ghana. In Mpumalanga, seeds are pounded into flour and, used to make porridge with maize or groundnuts. Seeds are also nutritious feed for the chickens and the dried leaves can be used for animal grazing after harvest

Since bambaras are not grown commercially in South Africa, they were neglected by National Research Institutes in the past and therefore, little was known about the optimum agronomic practices for this crop.

The following recommendations are made based on the research carried out to date, by the Lowveld Research Unit, Crop Research and Development Directorate, DARDLA.

- A base-line survey carried out on bambara production in Mpumalanga showed that bambaras are generally planted in newly cleared land. The general practice of the small holder farmer is to wait until the planting of the main crops such as maize and groundnuts is finished before planting bambaras. Traditional customs frequently prohibit early planting and, this practice leaves bambaras with shorter growing period which subsequently leads to lower yields.
- Bambaras are best planted in rows at 50-70 cm apart and 10-20cm in the rows, in well prepared seed beds.
- The optimum time of planting is November to December. Later planting leads to poor establishment and significantly lower yields.
- The seeds should be treated with thiram (thiulin) before planting at its optimum depth of 6-8cm.
- Application of nitrogen at planting did not significantly increase yields. Excess nitrogen encourages vegetative growth at the expense of the crop yields.
- Application of phosphate or potassium does not in general, have any beneficial effect on yield.
- Hoeing is done twice to keep the plot free of weeds. Cultivation should be carried out with care to avoid damage to the weak flower stalks. Pre-emergent herbicides such as Sanachlor, Butisan, Lasso MT and Dual SG were found effective in controlling weeds in bambaras.
- Earthing up after the development of flowers is found to have positive effect on the yield. Earthing up also facilitates easy harvesting. Two local selections.
- *Alectra vogelii* (Mhliwane) is a serious root parasite of bambaras and causes yield reduction of up to 49%. Crop rotation and the use of resistant varieties are recommended for the control of these pests.
- Two local selections, MPB51 for higher yields and MPB39 with very high tolerance to the *Alectra* parasite (Mhliwane) have been made by the Lowveld Research Unit. MPB 51 (Brianbeck) has given up to 2355kg (47 bags) bambaras in pod per hectare.