



Zambia Agriculture Research Institute

Groundnut Variety Descriptor

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Foreword

The Zambia Agriculture Research Institute (ZARI) has a mandate to develop technologies for the farming community. One of such technologies are crop varieties. The importance of variety identification in the field cannot be over emphasised. Crop varieties have distinct features that breeders, seed inspectors and farmers may use to identify them.

In line with the government's crop diversification policy and income diversification program, ZARI has in recent years developed diverse crop varieties of which groundnuts are a part. These varieties need to be identified in one way or another by those using them. Correct description of a variety is very important in the agricultural sector in general and in the seed production sector in particular. It may be very difficult to do this if there is no descriptor for each variety. This groundnut Variety Descriptor is based on information and data generated by breeders and agronomists alike. It provides producers, extension agents, seed inspectors, seed growers and the general farming community in the groundnut value chain critical information needed to correctly identify a variety.

This groundnut variety descriptor is augmented with an easy to grasp updated groundnut production recommendation to provide the groundnut industry with information and data that envisions strengthening the groundnut value chain and transforming the groundnut industry in Zambia. It is with this background, that the ZARI Groundnut Variety Descriptor was developed and produced and I hope it will significantly benefit the groundnut sector in Zambia.

I therefore, wish to recommend this important booklet to be used as a useful tool by Seed Inspectors, Breeders, Seed growers and the general farming community in their work.



A handwritten signature in white ink, consisting of stylized, overlapping loops and lines, positioned above a horizontal line.

Peter Lungu
DIRECTOR
Zambia Agriculture Research Institute

Message from sponsor

Groundnuts are an important legume crop in Zambia. They are grown as both food and cash crop. Groundnuts are important for household food and nutrition security because of their nutritive value (a kernel contain 23 – 25 % protein and 45 – 52 % edible oil). In recent years, institutions such as Self Help Africa (SHA) have been supporting the production of groundnut seed in order to contribute towards finding a lasting solution to the perennial problem of limited availability of early generation seed.

Self Help Africa in Zambia has been implementing the Community Based Seed Enterprises and Participatory Crop Improvement project under which the production of this groundnuts variety descriptor is supported. The project which is funded by Irish Aid has been promoting the cultivation, commercialisation and consumption of groundnuts amongst smallholder farmers and other stakeholders. The project is leveraging science for sustainable improved groundnuts production through productivity growth, intensification of Conservation Agriculture and use of certified seed varieties.

Self Help Africa has been working in Zambia for the last 35 years implementing projects that support poor smallholder farmers to acquire the knowledge and skills to make immediate and long-term improvements to their food, income and nutrition security and livelihoods through intensified and diversified agricultural production. Self Help Africa closely collaborates with the Government of Zambia through various government ministries and institutions such as the Zambia Agriculture Research Institute and Seed Control and Certification Institute. The organisation also works and implements its activities in partnership with local NGOs and CBOs, the private sector, and with national and international research institutions to promote innovation and research to achieve optimal results in the agriculture sector.

We are delighted to be associated with the production of the first groundnut descriptor in Zambia which we hope will help the relevant stakeholders increase groundnuts productivity and production in the country.



Elia Manda
ZAMBIA COUNTRY DIRECTOR
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Introduction

The Groundnut (*Arachis hypogaea* L.), also known as peanut, is the second most important legume after beans in Zambia and second most grown crop after maize (MAL and CSO, 2020). The traditional groundnut varieties in Zambia are of the tan Virginia type, but of a very mixed nature ranging from large seeded (e.g Chalimbana) to small seeded (e.g Solontoni). The average yields of these traditional varieties are below 700Kg/Ha, which is too low compared to other countries in Asia and America.

Since 1950, the Zambia Agriculture Research Institute has released a number of improved groundnut varieties including; 4 large seeded late maturing, 7 large seeded medium maturing and 8 small seeded early maturing varieties. These varieties were released to address the constraints of low productivity in groundnut production emanating from low yielding varieties and losses due to diseases and pests. These improved varieties have potential yields ranging from 1500Kg/Ha to 1800Kg/Ha for the early maturing varieties (Spanish and Valencia) and between 2000Kg/Ha and 3000Kg/Ha for the medium and late maturing varieties (Virginia).

Variety purity maintenance is key in ensuring a variety remains as productive as when first released. Therefore, it is important that all ZARI released groundnut varieties are described properly for all the stakeholders to be able to distinguish among the varieties. This ensures that the variety purity is maintained during the production cycle.

It is for this reason that this booklet has been published. It contains the most recent and active ZARI groundnut varieties on the market and their characteristics. This information will be helpful to all seed inspectors, breeders, production managers and other stakeholders in the groundnut value chain, as they will be able to distinguish varieties and be able to maintain variety purity.

We would like to acknowledge the Government of the Republic of Zambia (GRZ) and Self Help Africa (SHA) for the technical and financial support towards the production of this booklet. Special acknowledgement also goes to other cooperating partners including; the International Crop Research Institute for Semi-Arid Tropics (ICRISAT), USAID and World Bank who have helped us over the years in terms of funding and capacity building over several groundnut projects which have led to the development of the varieties listed in this booklet.



General Guidelines for Groundnut Production

1.	Groundnuts are best grown on sandy-loamy soils in regions I, II and III
2.	Plant seed of improved varieties suitable to the agro-ecological zone (tolerant to Rosette disease, drought etc)
3.	Apply 100kg/ha of D Compound fertiliser only at planting or plant after a well fertilised maize crop
4.	Plant early with the first effective rains at spacing of 60cm by 10cm with 1 seed per station at depth of 3-5cm
5.	Recommended seed rate of 80kg for large seeded varieties and 60kg per hectare for small seeded varieties
6.	Apply pre-emergence herbicide like Dual or hand weed, with first weeding 21 days after planting
7.	Apply post-emergence herbicide like PANTERA or hand weed at 45 days after planting
8.	Rogue out diseased plants or off-types and earth-up before flowering to avoid disturbing the pegs
9.	Before you harvest, check for: 1) maturity period of variety, 2) dig a few pods and check the inner dark-linings on the inside of shells
10.	Dig out your groundnuts and dry them using "Mandela Cork" or upside down for 5 days before stripping them (add Mandela Cork picture)
11.	Dry your groundnuts to 8% moisture content before storing them (not in the Sun)
12.	Store groundnuts in shells (groundnuts store better in shells); and shell them before planting. Don't add water as it promotes Aflatoxin contamination



VARIETY NAME: MGV 9



Year of Release:	2019
Variety Code (Original):	ICGV-SM 01514
Parentage	ICGV 93437 (Nyanda) X ICGV-SM 93561
Agro-ecology	Region I & II
Reaction to diseases	Resistant to rosette
Seed colour	Tan
Days to maturity	100-110
Seed size	Small
Botanical group	Spanish
Growth habit	Erect
Leaf shape	Oblong elliptic
Dormancy	No fresh seed dormancy
Pod constriction	Slight
Leaf colour	Light green
Yield potential	1500-1800 kg/ha
Other attributes	Drought tolerant
Market Class	Confectionary
Advantage over released varieties	Rosette resistant compared to Luena, Wamusanga and Katete
Seed Rate	60Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)

VARIETY NAME: MGV 8

Year of Release:	2018
Variety Code (Original):	ICGV-SM 01711
Parentage	ICGV-SM 90704 (Chishango) X CG 7
Agro-ecology	Region II & III
Reaction to diseases	Resistant to rosette and ELS tolerant
Seed colour	Tan
Days to maturity	120-130
Seed size	Medium
Botanical group	Virginia
Growth habit	Erect
Leaf shape	Elliptic
Dormancy	Has fresh seed dormancy
Pod constriction	Moderate
Leaf colour	green
Yield potential	2000-2500 kg/ha
Other attributes	Highly stable across different environments
Market Class	Confectionary
Advantage over released varieties	Highly stable across different environments & rosette resistant
Seed Rate	80Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)



VARIETY NAME: Wazitatu



Year of Release:	2015
Variety Code (Original):	ICGV SM 05514
Parentage	VALENCIA R2 X ICGV-SM 93555
Agro-ecology	Region I & II
Reaction to diseases	Resistant to Early leaf spot
Seed colour	Red
Days to maturity	100-110
Seed size	Small (3-4 seeded)
Botanical group	Valencia
Growth habit	Erect
Leaf shape	elliptic
Dormancy	No fresh seed dormancy
Pod constriction	Slight
Leaf colour	dark green
Yield potential	1500-1800 kg/ha
Other attributes	Drought tolerant, soft & Purple stem
Market Class	Oil
Advantage over released Variety	Only improved variety with 3-4 seeds per pod
Seed Rate	60Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)

VARIETY NAME: Wamusanga

Year of Release:	2015
Variety Code:	ICGV SM 03517
Parentage	ICGV 93251 X ICGV 93436
Agro-ecology	Region I & II
Reaction to diseases	Tolerant to rosette
Seed colour	Tan
Days to maturity	85-90
Seed size	small
Botanical group	Spanish
Growth habit	Erect
Leaf shape	Oblong elliptic
Dormancy	No fresh seed dormancy
Pod constriction	Moderate
Leaf colour	Green
Yield potential	1500-1800 kg/ha
Other attributes	Drought tolerant, sweet milky taste
Market Class	Confectionary
Advantage over released Variety	19% yield gain over Luena, higher 100 Seed Mass over Luena
Seed Rate	60Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)



VARIETY NAME: Lupande



Year of Release:	2015
Variety Code (Original):	ICGV SM 08513
Parentage	ICGX-SM 98021/1 X ICGV-SM 94584
Agro-ecology	Region I & II
Reaction to diseases	Tolerant to rosette
Seed colour	Tan
Days to maturity	90 -100
Seed size	Small
Botanical group	Spanish
Growth habit	Erect
Leaf shape	Oblong elliptic
Dormancy	No fresh seed dormancy
Pod constriction	Slight
Leaf colour	Light green
Yield potential	1500-1800 kg/ha
Other attributes	High seed weight, sweet taste and duo purpose (Grain and fodder)
Market Class	Confectionary and fodder
Advantage over released Variety	Tolerance to rosette and good for fodder, 25% yield gain when compared to Luena and Katete
Seed Rate	60Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)

VARIETY NAME: MGV 7

Year of Release:	2015
Variety Code (Original):	ICGV SM 08503
Parentage	MGV 4 X ICGV-SM 91706
Agro-ecology	Region II & III
Reaction to diseases	Resistant to rosette
Seed colour	Red
Days to maturity	120-130
Seed size	Medium
Botanical group	Virginia
Growth habit	Erect
Leaf shape	Oblong elliptic
Dormancy	Has fresh Seed dormancy
Pod constriction	Medium
Leaf colour	Light green
Yield potential	2500-3000 kg/ha
Other attributes	High pod count per plant (50-60), Pronounced reticulation on the pods
Market Class	Oil
Advantage over released Variety	It's an improved version of MGV 4 (Rosette resistant)
Seed Rate	80kg/ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)



VARIETY NAME: MGV 6



Year of Release:	2015
Variety Code (Original):	ICGV SM 06729
Parentage	ICGV 90100 X Luena
Agro-ecology	Region II & III
Reaction to diseases	Resistant to rust and tolerant to rosette
Seed colour	Red
Days to maturity	115-125
Seed size	Medium
Botanical group	Virginia
Growth habit	Erect
Leaf shape	elliptic
Dormancy	Has fresh seed dormancy
Pod constriction	Absent
Leaf colour	green
Yield potential	2500-3000 kg/ha
Other attributes	Sweet, less oil (<45%)
Market Class	Oil and confectionary
Advantage over released Variety	Matures earlier than MGV 4 and is short compared to MGV 4 and 7
Seed Rate	80Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)

VARIETY NAME: MGV 5

Year of Release:	2007
Variety Code (Original):	ICGV SM 92741
Parentage	Chalimbana x MGS-2
Agro-ecology	Region II & III
Reaction to diseases	Moderately susceptible to rosette and ELS
Seed colour	Tan
Days to maturity	125-130
Seed size	Big
Botanical group	Virginia
Growth habit	Erect
Leaf shape	Medium Elliptic
Dormancy	Has fresh seed dormancy
Pod constriction	Moderately deeply constricted
Leaf colour	Dark green
Yield potential	2500-3000 kg/ha
Other attributes	Big seeded, High yielding
Market Class	Confectionary
Advantage over released Variety	Big seed size
Seed Rate	80Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)



VARIETY NAME: Chishango (Shield)



Year of Release:	2003
Variety Code (Original):	ICGV SM 90704
Parentage	RG1 X Mani Pinter
Agro-ecology	Region II & III
Reaction to diseases	Resistant to rosette
Seed colour	Tan
Days to maturity	120-130
Seed size	Medium
Botanical group	Virginia
Growth habit	Erect
Leaf shape	elliptic
Dormancy	Has fresh Seed dormancy
Pod constriction	Medium
Leaf colour	Light green
Yield potential	2000-2500 kg/ha
Other attributes	Good peanut making quality
Market Class	Confectionary
Advantage over released Variety	First Rosette resistant variety
Seed Rate	80kg/ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)

VARIETY NAME: Luena

Year of Release:	1998
Variety Code (Original):	JL24
Parentage	Indian Landrace x US 25
Agro-ecology	Region I & II
Reaction to diseases	Susceptible to ELS, LLS, Rosette and Rust
Seed colour	Tan
Days to maturity	95-105
Seed size	Small
Botanical group	Spanish
Growth habit	Erect
Leaf shape	Oblong elliptic
Dormancy	Has no fresh Seed dormancy
Pod constriction	Medium
Leaf colour	Light green
Yield potential	1000-1500 kg/ha
Other attributes	Drought tolerant
Market Class	Confectionary
Seed Rate	60kg/ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)



VARIETY NAME: MGV 4



Year of Release:	1992
Variety Code (Original):	ICGMS 42
Parentage	-
Agro-ecology	Region II & III
Reaction to diseases	Susceptible to Rosette and moderately susceptible to ELS
Seed colour	Red
Days to maturity	130-140
Seed size	Medium
Botanical group	Virginia
Growth habit	Erect
Leaf shape	Medium Elliptic
Dormancy	Has fresh seed dormancy
Pod constriction	Slight constricted
Leaf colour	Dark green
Yield potential	2000-3000 Kg/Ha
Other attributes	Highly stable across environments, high oil content (48-50%)
Market Class	Confectionary and oil
Advantage over released Variety	High oil content, highly stable and high yielding
Seed Rate	80Kg/Ha
Recommended Spacing	10cm x 45cm (Rip Lines) 10cm x 60cm (Ridges)



