

VARIETY CATALOGUE OF GRONDNUTS (*Arachis Hypogaea*) IN TANZANIA



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FOREWORD

Groundnut (*Arachis hypogaea* L.) is a domesticated pulse and leguminous oilseed, nutritious and rich in energy, providing 567 calories per 100g (Akpo et al., 2021). Groundnut contains 40-50% fat, 20-50% protein, and 10-20% carbohydrates and minerals which are very essential to human body development. In addition to nutritional value of the grain, groundnut being a legume crop increases soil fertility by fixing atmospheric nitrogen in the root nodes and thus escalating the production of other crops when used in rotation or in intercropping. Moreover, groundnut plant stalks, shells, haulms, hays and seed cakes are often used as animal feeds and manure to enhance soil fertility. Groundnut is the 6th highest contributor to the Tanzania GDP after Banana, Beans, Maize, Cassava and Paddy contributing about 5% (ICRISAT and TARI, 2016). Groundnut sub-sector has employed 14 million people who depend on its cultivation and income source in the country (Lukurugu et al., 2021; Mwalongo et al., 2020). More, than 1 million hectare is under groundnut production and the country produce 0.69 million metric tons with an average productivity of 0.69t/ha of groundnuts (FAOSTAT, 2022).

Despite its significance in enhancing soil fertility, household income, and human nutrition, majority of smallholder farmers constituting about 75% still use landrace varieties (Bakari et al., 2021). Limited use of improved groundnut varieties and their allied technologies contribute to low productivity ranging from 0.5 t/ha to 1 t/ha, increase of biotic and abiotic stresses which contribute to less market value (Akpo et al., 2020; Daudi et al., 2018). Efforts have been made with researchers in collaboration with other groundnut stakeholders and development partners to enhance variety development, seed production, accessibility, and availability by all actors in the value chain. These efforts facilitated the release of 17 improved groundnut varieties under groundnut research program. These varieties are high-yielding, drought tolerant, rosette-resistance and have market preferred traits. Therefore, this catalogue has been developed to enhance adoption of improved groundnut varieties in Tanzania. The catalogue provides in depth information about variety identification, agro-ecological requirement, agronomic and morphological characteristics, and reaction to biotic and abiotic stresses. Moreover, this information to guide investment and marketing decisions by all groundnut value chain actors. It is anticipated that this document will facilitate higher adoption rates and increase multiple uses of the groundnut crop for improving farmer's income and livelihood.

May I profoundly recognize the efforts of research scientists from TARI Naliendele Centre and all the partners for successfully contributing to research which have resulted into the release of groundnut varieties described in this document.

Dr. Geoffrey S. Mkamilo
DIRECTOR GENERAL, TARI

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INTRODUCTION

Groundnut is one of the most significant annual crop in the world, rich in food nutrients with about 20% protein, 40% oil, various minerals and vitamins (Daudi et al., 2018). In some developing countries, groundnut adds up to around 25% up to 60% of the small-scale farmer's income (Bakari et al., 2021). It is estimated that, at farm level, at least 23% of households in developing countries are employed in groundnut production (FAO, 2018).

Cultivated peanut or groundnut (*Arachis hypogaea* L., AABB, $2n = 4x = 40$) is an allotetraploid and a predominantly self-pollinated legume crop. It has cleistogamous flowers, but cross pollination can occur due to several reasons. It is highly adapted to tropical and subtropical climates of the world, and serves as a key oilseed crop both for small-scale farmers and the oil industry especially in Africa and Asia. The crop is a valuable source of dietary protein and oil as well as a supplement to livestock feed. Groundnut seed is a rich source of oil (48-50%), protein (26-28%), dietary fiber, minerals, and vitamins (Pasupuleti *et al.* 2013). It is the fifth most important oilseed crop in the world in terms of volume of oil production after soybeans, cotton, rapeseed and sunflower. In addition, the crop has the ability to fix atmospheric nitrogen into the soil, which improves soil fertility.

Globally, groundnut is cultivated on about 31.59 million hectares with an annual production of approximately 53.64 million tons and productivity of about 1.699 t ha^{-1} in 2020 (FAOSTAT 2022). It is widely grown in more than 100 countries of tropical, subtropical, and warm temperate regions of the globe (Upadhyaya *et al.* 2012). According to FAOSTAT (2022), Africa produce about 16,860,272 tonnes (31.4%) of groundnut out of which Tanzania produce only 690,000 tonnes (1.4%) as of 2020 statistics.

Although groundnut is of economic, social and cultural importance, its productivity is severely constrained by several biotic and abiotic factors. Drought is the major abiotic constraint affecting groundnut productivity and quality worldwide. Two thirds of the global production are under rain-fed systems of the semi-arid tropics where rainfall is generally erratic and insufficient, causing unpredictable drought stress (Reddy et al. 2003).

The most important biotic factors affecting groundnut production and productivity in the country include groundnut rosette disease caused by virus, rust, and early and late leaf spot disease. Groundnut rosette disease is most devastating under rainfall conditions, while rust epidemics is favored under high humid and high temperature conditions. Aflatoxin caused by the fungal pathogen *Aspergillus flavus* affects groundnut quality. Socio-economic constraints such as the high cost of seeds, high labour demand and low

price of groundnut also contribute to the low production and productivity of the crop in the country (Katundu et al. 2014).

Groundnuts (*Arachis Hypogaea*) in Tanzania

In Tanzania, where groundnut is one of the main annual crops, the production cost of groundnut is cheaper than of other annual crops like rice (Akpo, Muricho, et al., 2020; Bakari et al., 2021). The total production cost of groundnut ranges from 500,000 TZS/ha to 1,000,000 TZS/ha compared to rice, which ranges from 2,500,000 TZS/ha to 3,250,000 TZS/ha (Ndabila, 2018). Groundnut can be produced in all areas with an altitude below 1500m and having alluvial soils (Daudi et al., 2012). In Tanzania, groundnut is mainly produced in Dodoma, Tabora, Geita, Shinyanga, Songwe Mbeya, Katavi, Singida, Rukwa and Manyara regions (URT, 2021). Likewise, groundnut is largely produced in Kigoma, Mwanza, Mtwara, Simiyu and Kagera. Most of these regions are either semi-arid or arid and mostly challenged by drought, food insecurity and poverty.

Currently, the country needs to cope with increasing drought due to climate change, market shift, and other biotic and abiotic stresses (Zurich, 2014). In addressing these challenges for improving people's livelihood, Tanzania Agricultural Research Institute (TARI) in collaboration with other development partners released 17 improved groundnut varieties (Mwalongo et al., 2020). Six improved groundnut varieties were release between 1960s and 1990s (Daudi *et al.*, 2012). The outcomes, however, were below expectations attaining maximum average productivity of 444 kg/ha during the period. Thereafter, 11 more improved varieties were released, and productivity increased to an average of 745 kg/ha. This is still less than the average productivity of Africa, which is 800kg/ha (FAO, 2020). Even though the new varieties were available, it was reported that about 81% of the groundnut producers still use old varieties, which are less resistant to drought and diseases, have low productivity between (0.5t/ha to 1t/ha) against the potential yield of between (1-2t/ha) and low market value (Mwakimata, 2017).

Limited use of improved varieties by farmers was reported as one of the major bottlenecks to realize high yield in the country (Daudi et al. 2018; Akpo et al. 2020). Use of improved varieties will make ever lasting effects on peoples' health, financial power and human resource capacity of the country. Studies illustrate that the groundnut market is expanding in Tanzania due to a rapid population growth rate of 3.1 per year, multiple uses of groundnut and exports of about 20,000 tons per year (URT, 2020). All these factors combined raised an alarm of increasing awareness and use of improved groundnut varieties.

This variety catalogue underscores the important characteristics of all the released groundnut varieties since 1960s to date, an effort to enhance stakeholders' awareness and groundnut utilization along the value chain in Tanzania.

Groundnuts (*Arachis Hypogaea*) Varieties Released in Tanzania

Tanzania Agricultural Research Institute (TARI) in collaboration with Development Partners released 17 improved groundnut varieties (Mwalongo et al., 2020). Six improved groundnut varieties were released between 1960s and 1990s (Daudi et al., 2012). The description of the varieties have been provided in the document.


Nyota 1983

| Variety Name | Nyota 1983 |
|---------------------------------------|---|
| Variety Identifications | |
| Original Code | Span cross |
| Kiswahili name | Nyota |
| Local Name | Serena, mwezi mmoja |
| Year of Release | 1983 |
| Responsible Research Institute | TARI Naliendele |
| Growing Area of Recommendation | |
| Regions/Areas | Areas with rainfall range of 750 – 1200mm and light |
| Altitude | 0 – 1500 metres above sea level (m.a.s.l) |
| Morphological characteristics | |
| Leaf colour | Light green |
| Growth habit | erect |
| Plant height (cm): | 23-25 |
| Flower colour | Orange Yellow |
| Pod colour at maturity | Khaki |
| Seed shape | Oval |
| Testa texture | Smooth |
| Seed colour | Tan |
| Seed size | small kernels |
| Agronomic characteristics | |
| Days to maturity | 90 – 100 |
| Quantity of Seed per hectare (kg) | 80 |
| Number of days to 75% flowering | 26-30 |
| A hundred seed weight (g) | 35-40 |
| Grain Yield of station (t/ha) | 0.8-1.5 |
| Grain Yield on farm (t/ha) | 0.8 |
| Soils | Fertile and well drained |
| Other | Sprout at maturity if harvesting is delayed |
| Reaction to Pest and diseases | |
| Early leaf spot | Tolerant |
| Late leaf spot | Tolerant |
| Rosette | Tolerant |
| Leaf rust | Tolerant |

Johari 1985

| Variety Name | Johari 1985 |
|---------------------------------------|---|
| Variety Identifications | |
| Original Code | Robut - 33 |
| Kiswahili name | Johari |
| Local Name | Johari |
| Year of Release | 1985 |
| Responsible Research Institute | TARI Naliendele |
| Growing Area of Recommendation | |
| Regions/Areas | Areas with rainfall range of 750 – 1200mm and light |
| Altitude | 0 – 1500 metres above sea level (m.a.s.l) |
| Morphological characteristics | |
| Leaf colour | Dark green |
| Growth habit | semi spreading |
| Plant height (cm): | 20-23 |
| Flower colour | Orange yellow |
| Pod colour at maturity | khaki |
| Seed shape | Oval |
| Testa texture | Smooth |
| Seed colour | Tan kernels |
| Seed size | Medium size kernels |
| Agromomic characteristics | |
| Days to maturity | 110 - 115 |
| Quantity of Seed per hectare (kg) | 80-100 |
| Number of days to 75% flowering | 35-40 |
| A hundred seed weight (g) | 35-40 |
| Grain Yield of station (t/ha) | 1.0 - 1.2 |
| Grain Yield on farm (t/ha) | 0.85 |
| Soils | Fertile and well drained |
| Other | Sprout at maturity if harvesting is delayed |
| Reaction to Pest and diseases | |
| Early leaf spot | Tolerant |
| Late leaf spot | Tolerant |
| Rosette | Susceptible |
| Leaf rust | Susceptible |


Pendo 1998

| Variety Name | | Pendo 1998 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGMS-33 |  |
| Kiswahili name | Pendo | |
| Local Name | Upendo, serena | |
| Year of Release | 1998 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | Areas with rainfall range of 750 – 1200mm and light | |
| Altitude | 0 – 1500 metres above sea level (m.a.s.l) | |
| Morphological characteristics | | |
| Leaf colour | Light green plant | |
| Growth habit | erect | |
| Plant height (cm): | 23-25 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Tan | |
| Seed size | Medium | |
| Shelling (%) | 62-65 | |
| Agronomic characteristics | | |
| Days to maturity | 90 – 100 | |
| Quantity of Seed per hectare (kg) | 80 | |
| Number of days to 75% flowering | 25-30 | |
| A hundred seed weight (g) | 35-40 | |
| Grain Yield of station (t/ha) | 1.0 - 1.5 | |
| Grain Yield on farm (t/ha) | 1.1 | |
| Soils | Fertile and well drained | |
| Other | Sprout at maturity if harvesting is delayed | |
| Nutritional characteristics | | |
| Protein Content (%) | 32.3 | |
| Iron (Fe) content (ppm, mg/kg) | 41.1 | |
| Zinc (Zn) content (ppm, mg/kg) | 82 | |
| Oil Content (%w/w) | 44.5 | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Susceptible | |
| Leaf rust | Susceptible | |


Sawia 1998

| Variety Name | Sawia 1998 |
|---------------------------------------|---|
| Variety Identifications | |
| Original Code | ICGMS 46 |
| Kiswahili name | Sawia |
| Local Name | Sawia |
| Year of Release | 1998 |
| Responsible Research Institute | TARI Naliendele Centre |
| Growing Area of Recommendation | |
| Regions/Areas | Areas with rainfall range of 750 – 1200mm and light |
| Altitude | 0-1500masl |
| Morphological characteristics | |
| Leaf colour | Green |
| Growth habit | Semi spread |
| Plant height (cm): | 20-23 |
| Flower colour | Orange yellow |
| Pod colour at maturity | Khaki |
| Seed shape | Oval |
| Testa texture | Smooth |
| Seed colour | Tan |
| Seed size | Medium |
| Shelling (%) | 65-68 |
| Agronomic characteristics | |
| Days to maturity | 110-115 |
| Quantity of Seed per hectare (kg) | 80-100 |
| Number of days to 75% flowering | 30-40 |
| A hundred seed weight (g) | 35-40 |
| Grain Yield of station (t/ha) | 1.0-1.2 |
| Grain Yield on farm (t/ha) | 0.95 |
| Soils | Fertile and well drained |
| Other | |
| Reaction to Pest and diseases | |
| Early leaf spot | Tolerant |
| Late leaf spot | Tolerant |
| Rosette | Susceptible |
| Leaf rust | Susceptible |


Mnanje 2009

| Variety Name | | Mnanje 2009 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGV-SM-83708 |  |
| Kiswahili name | Mnanje 2009 | |
| Local Name | Nyekundu kubwa, karanga Malawi | |
| Year of Release | 2009 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500 m above sea level | |
| Morphological characteristics | | |
| Leaf colour | Dark green | |
| Growth habit | semi spreading | |
| Plant height (cm): | 20-23 | |
| Flower colour | Orange Yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Red | |
| Seed size | Large | |
| Shelling (%) | 65-72 | |
| Agronomic characteristics | | |
| Days to maturity | 110-115 | |
| Quantity of Seed per hectare (kg) | 80-100 | |
| Number of days to 75% flowering | 35-40 | |
| A hundred seed weight (g) | 40-50 | |
| Grain Yield of station (t/ha) | 1.3-1.5 | |
| Grain Yield on farm (t/ha) | 1.0-1.1 | |
| Soils | Fertile, well-drained soil | |
| Other | | |
| Nutritional characteristics | | |
| Protein Content (%) | 29.5 | |
| Iron (Fe) content (ppm, mg/kg) | 65.4 | |
| Zinc (Zn) content (ppm, mg/kg) | 35.3 | |
| Oil Content (%w/w) | 51.5 | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Susceptible | |
| Leaf rust | Tolerant | |


Naliendele 2009

| Variety Name | | Naliendele 2009 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGV-SM 99555 |  |
| Kiswahili name | Naliendele 2009 | |
| Local Name | Naliendele 2009 | |
| Year of Release | 2009 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500masl | |
| Morphological characteristics | | |
| Leaf colour | Light green | |
| Growth habit | Erect | |
| Plant height (cm) | 23-25 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Tan | |
| Seed size | Medium | |
| Shelling (%) | 51-55 | |
| Agronomic characteristics | | |
| Days to maturity | 90-100 | |
| Quantity of Seed per hectare (kg) | 80 | |
| Number of days to 75% flowering | 25-28 | |
| A hundred seed weight (g) | 35-40 | |
| Grain Yield of station (t/ha) | 1.0-1.1 | |
| Grain Yield on farm (t/ha) | 0.9 | |
| Soils | Fertile, well-drained soil | |
| Other | Drought tolerant | |
| Nutritional characteristics | | |
| Protein Content (%) | 34.5 | |
| Iron (Fe) content (ppm, mg/kg) | 50.7 | |
| Zinc (Zn) content (ppm, mg/kg) | 84.1 | |
| Oil Content (%w/w) | 40.1 | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Tolerant | |
| Leaf rust | Susceptible | |

Mangaka 2009

| Variety Name | | Mangaka 2009 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGV-SM-99557 |  |
| Kiswahili name | Mangaka 2009 | |
| Local Name | Mangaka 2009 | |
| Year of Release | 2009 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0 - 1500masl | |
| Morphological characteristics | | |
| Leaf colour | Light green | |
| Growth habit | erect | |
| Plant height (cm): | 23-25 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Tan | |
| Seed size | Medium | |
| Shelling (%) | 63-65 | |
| Agronomic characteristics | | |
| Days to maturity | 90-100 | |
| Quantity of Seed per hectare (kg) | 80 | |
| Number of days to 75% flowering | 25-30 | |
| A hundred seed weight (g) | 35-40 | |
| Grain Yield of station (t/ha) | 1.0-1.5 | |
| Grain Yield on farm (t/ha) | 1.0 | |
| Soils | Fertile, well-drained soil | |
| Other | 2-3 seeds per pod | |
| Nutritional characteristics | | |
| Protein Content (%) | 32.9 | |
| Iron (Fe) content (ppm, mg/kg) | 47.8 | |
| Zinc (Zn) content (ppm, mg/kg) | 94.5 | |
| Oil Content (%w/w) | 41.1 | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Susceptible | |
| Rosette | Susceptible | |
| Leaf rust | Susceptible | |

Nachingea 2009

| Variety Name | | Nachingwea 2009 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGV-SM 01711 |  |
| Kiswahili name | Nachingwea 2009 | |
| Local Name | Nachingwea 2009 | |
| Year of Release | 2009 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500masl | |
| Morphological characteristics | | |
| Leaf colour | Dark green | |
| Growth habit | Semi spread | |
| Plant height (cm) | 20-23 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Rough | |
| Seed colour | Tan | |
| Seed size | Large | |
| Shelling (%) | 54-60 | |
| Agronomic characteristics | | |
| Days to maturity | 110-120 | |
| Quantity of Seed per hectare (kg) | 80-100 | |
| Number of days to 75% flowering | 35-40 | |
| A hundred seed weight (g) | 40-50 | |
| Grain Yield of station (t/ha) | 1.05-1.25 | |
| Grain Yield on farm (t/ha) | 0.95 | |
| Soils | Fertile, well-drained soil | |
| Other | | |
| Nutritional characteristics | | |
| Protein Content (%) | 31.3 | |
| Iron (Fe) content (ppm, mg/kg) | 23.1 | |
| Zinc (Zn) content (ppm, mg/kg) | 77.5 | |
| Oil Content (%w/w) | 44.5 | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Tolerant | |
| Leaf rust | Tolerant | |

Masasi 2009

| Variety Name | Masasi 2009 |
|---------------------------------------|---|
| Variety Identifications | |
| Original Code | ICGV-SM 01712 |
| Kiswahili name | Masasi 2009 |
| Local Name | Masasi 2009 |
| Year of Release | 2009 |
| Responsible Research Institute | TARI Naliendele Centre |
| Growing Area of Recommendation | |
| Regions/Areas | All major groundnut growing areas in Tanzania |
| Altitude | 0-1500masl |
| Morphological characteristics | |
| Leaf colour | Dark green |
| Growth habit | Alternate, semi spread |
| Plant height (cm): | 20-23 |
| Flower colour | Orange yellow |
| Pod colour at maturity | Khaki |
| Seed shape | Oval |
| Testa texture | Smooth |
| Seed colour | Red |
| Seed size | Large |
| Shelling (%) | 63-68 |
| Agronomic characteristics | |
| Days to maturity | 110-115 |
| Quantity of Seed per hectare (kg) | 80-100 |
| Number of days to 75% flowering | 35-40 |
| A hundred seed weight (g) | 40-50 |
| Grain Yield of station (t/ha) | 1.1-1.5 |
| Grain Yield on farm (t/ha) | 1.0 |
| Soils | Fertile, well-drained soil |
| Other | |
| Nutritional characteristics | |
| Protein Content (%) | 25.4 |
| Iron (Fe) content (ppm, mg/kg) | 20.6 |
| Zinc (Zn) content (ppm, mg/kg) | 23.1 |
| Oil Content (%w/w) | 46.7 |
| Reaction to Pest and diseases | |
| Early leaf spot | Tolerant |
| Late leaf spot | Tolerant |
| Rosette | Tolerant |
| Leaf rust | Tolerant |




Nachi 2015


| Variety Name | Nachi 2015 |
|---------------------------------------|---|
| Variety Identifications | |
| Original Code | ICG-SM 90704 |
| Kiswahili name | Nachi 2015 |
| Local Name | Kata kiuno |
| Year of Release | 2015 |
| Responsible Research Institute | TARI Naliendele Centre |
| Growing Area of Recommendation | |
| Regions/Areas | All major groundnut growing areas in Tanzania |
| Altitude | 0-1500masl |
| Morphological characteristics | |
| Leaf colour | Dark green |
| Growth habit | Alternate, semi spread |
| Plant height (cm) | 20-23 |
| Flower colour | Orange yellow |
| Pod colour at maturity | Khaki |
| Seed shape | Oval |
| Testa texture | Rough |
| Seed colour | Tan |
| Seed size | Large |
| Shelling (%) | 62-70 |
| Agronomic characteristics | |
| Days to maturity | 110-115 |
| Quantity of Seed per hectare (kg) | 80-100 |
| Number of days to 75% flowering | 35-40 |
| A hundred seed weight (g) | 40-45 |
| Grain Yield of station (t/ha) | 1.0-1.8 |
| Grain Yield on farm (t/ha) | 1.3 |
| Soils | Fertile, well-drained soil |
| Other | |
| Nutritional characteristics | |
| Protein Content (%) | 32.4 |
| Iron (Fe) content (ppm, mg/kg) | 33.9 |
| Zinc (Zn) content (ppm, mg/kg) | 66 |
| Oil Content (%w/w) | 43.7 |
| Reaction to Pest and diseases | |
| Early leaf spot | Tolerant |
| Late leaf spot | Tolerant |
| Rosette | Tolerant |
| Leaf rust | Tolerant |




Kuchele 2015

| Variety Name | | Kuchele 2015 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICG 8326 |  |
| Kiswahili name | Kuchele 2015 | |
| Local Name | Kuchele 2015 | |
| Year of Release | 2015 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500masl | |
| Morphological characteristics | | |
| Leaf colour | Dark green | |
| Growth habit | Alternate, semi spread | |
| Plant height (cm) | 20-23 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Red | |
| Seed size | Large | |
| Shelling (%w/w) | 65-72 | |
| Agonomic characteristics | | |
| Days to maturity | 110-115 | |
| Quantity of Seed per hectare (kg) | 80-100 | |
| Number of days to 75% flowering | 30-35 | |
| A hundred seed weight (g) | 50-60 | |
| Grain Yield of station (t/ha) | 1.0-1.5 | |
| Grain Yield on farm (t/ha) | 1.0 | |
| Soils | Fertile, well-drained soil | |
| Other | Best for confectionery market | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Tolerant | |
| Leaf rust | Tolerant | |

Narinut 2015

| Variety Name | | Narinut 2015 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGV-SM 01731 |  |
| Kiswahili name | Narinut 2015 | |
| Local Name | Narinut 2015 | |
| Year of Release | 2015 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500masl | |
| Morphological characteristics | | |
| Leaf colour | Dark green | |
| Growth habit | Alternate, semi spread | |
| Plant height (cm) | 20-23 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Tan | |
| Seed size | Large | |
| Shelling (%w/w) | 57-65 | |
| Agronomic characteristics | | |
| Days to maturity | 110-115 | |
| Quantity of Seed per hectare (kg) | 80-100 | |
| Number of days to 75% flowering | 35-40 | |
| A hundred seed weight (g) | 65-70 | |
| Grain Yield of station (t/ha) | 1.5-2.0 | |
| Grain Yield on farm (t/ha) | 1.0 | |
| Soils | Fertile, well-drained soil | |
| Other | Best for confectionery market | |
| Nutritional characteristics | | |
| Protein Content (%) | 24.2 | |
| Iron (Fe) content (ppm, mg/kg) | 20.5 | |
| Zinc (Zn) content (ppm, mg/kg) | 25.2 | |
| Oil Content (%w/w) | 46.2 | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Tolerant | |
| Leaf rust | Tolerant | |

Naliendele 2016

| Variety Name | | Naliendele 2016 |
|---------------------------------------|---|---|
| Variety Identifications | | |
| Original Code | ICGV-SM 08503 |  |
| Kiswahili name | Naliendele 2016 | |
| Local Name | Karanga malawi | |
| Year of Release | 2018 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500masl | |
| Morphological characteristics | | |
| Leaf colour | Dark green | |
| Growth habit | Alternate, semi spread | |
| Plant height (cm) | 20-23 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Red | |
| Seed size | Large | |
| Shelling (%w/w) | 65-72 | |
| Agonomic characteristics | | |
| Days to maturity | 110-115 | |
| Quantity of Seed per hectare (kg) | 80-100 | |
| Number of days to 75% flowering | 35-40 | |
| A hundred seed weight (g) | 45-50 | |
| Grain Yield of station (t/ha) | 1.0-1.5 | |
| Grain Yield on farm (t/ha) | 0.9 | |
| Soils | Fertile, well-drained soil | |
| Other | | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Tolerant | |
| Leaf rust | Tolerant | |

Tanzanut 2016

| Variety Name | Tanzanut 2016 |
|---------------------------------------|---|
| Variety Identifications | |
| Original Code | ICGV-SM 01514 |
| Kiswahili name | Tanzanut 2016 |
| Local Name | Tanzanut 2016 |
| Year of Release | 2018 |
| Responsible Research Institute | TARI Naliendele Centre |
| Growing Area of Recommendation | |
| Regions/Areas | All major groundnut growing areas in Tanzania |
| Altitude | 0-1500masl |
| Morphological characteristics | |
| Leaf colour | Green |
| Growth habit | Alternate, semi spread |
| Plant height (cm) | 23-25 |
| Flower colour | Orange yellow |
| Pod colour at maturity | Khaki |
| Seed shape | Oval |
| Testa texture | Rough smooth |
| Seed colour | Tan |
| Seed size | Medium |
| Shelling (%) | 50-53 |
| Agronomic characteristics | |
| Days to maturity | 110-115 |
| Quantity of Seed per hectare (kg) | 80-100 |
| Number of days to 75% flowering | 35-40 |
| A hundred seed weight (g) | 40-45 |
| Grain Yield of station (t/ha) | 1.2-1.5 |
| Grain Yield on farm (t/ha) | 1.0 |
| Soils | Fertile, well-drained soil |
| Other | |
| Reaction to Pest and diseases | |
| Early leaf spot | Tolerant |
| Late leaf spot | Tolerant |
| Rosette | Tolerant |
| Leaf rust | Susceptible |



Mtwaranut 2016

| Variety Name | | Mtwaranut 2016 |
|---------------------------------------|---|----------------|
| Variety Identifications | | |
| Original Code | ICGV-SM 07599 | |
| Kiswahili name | Mtwaranut 2016 | |
| Local Name | Mtwaranut 2016 | |
| Year of Release | 2018 | |
| Responsible Research Institute | TARI Naliendele Centre | |
| Growing Area of Recommendation | | |
| Regions/Areas | All major groundnut growing areas in Tanzania | |
| Altitude | 0-1500masl | |
| Morphological characteristics | | |
| Leaf colour | Dark green | |
| Growth habit | Alternate, semi spread | |
| Plant height (cm) | 20-23 | |
| Flower colour | Orange yellow | |
| Pod colour at maturity | Khaki | |
| Seed shape | Oval | |
| Testa texture | Smooth | |
| Seed colour | Tan | |
| Seed size | Large | |
| Shelling (%) | 54-58 | |
| Agronomic characteristics | | |
| Days to maturity | 110-115 | |
| Quantity of Seed per hectare (kg) | 80-100 | |
| Number of days to 75% flowering | 35-40 | |
| A hundred seed weight (g) | 65-70 | |
| Grain Yield of station (t/ha) | 1.1-1.3 | |
| Grain Yield on farm (t/ha) | 1.0 | |
| Soils | Fertile, well-drained soil | |
| Other | | |
| Reaction to Pest and diseases | | |
| Early leaf spot | Tolerant | |
| Late leaf spot | Tolerant | |
| Rosette | Tolerant | |
| Leaf rust | Tolerant | |



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