

Weed control

Groundnut is susceptible to a wide range of weeds that tremendously compete with groundnuts for available soil moisture, soil nutrients, light, space and other weeds serve as hosts for diseases. Weeds can result in low yield, poor quality of the groundnut seeds, difficult earthing up and makes harvesting to be difficult. As such an integrated system ranging from chemical, mechanical to biological should be used in order to prevent weed suppression. Effective weed control implies good control of weeds throughout the growing season.

Pest disease control

Diseases in groundnuts can be classified as leaf, stem and pod diseases and in addition to these particular viral diseases are also encountered. Insect pests such as termites could also plague the groundnut farmer. All of these diseases and pests can be identified by using the publication "Groundnut Diseases and Pests" of the ARC-Grain Crops Institute. For information on chemical control "A guide to the use of pesticides and fungicides in the Republic of South Africa" published by the National Department of Agriculture should be consulted

Harvesting maturity and method

The number of days to maturity varies with cultivars. There are some characteristics that need close attention and observation to determine harvest maturity which are:

- Pod colour – inner walls display a dark-brown colour as a result of darkening of the inner tissue of the hull.
- Seed colour – Young immature seed is white and changes to pink and dull pink as the seed matures.
- Leaves – the leaves develop a yellow colour and dry at the tips.

The digger-shaker-windrower is used to lift groundnuts and detach them from the soil. Dig deep enough to prevent

cutting pegs. Windrow-inverting attachments orient plants as they leave the shaker so pods are primarily on the top of windrows to permit adequate air circulation and exposure to sunlight for a shorter drying time.

IMPORTANCE AND USES

Human uses – Seeds yield a non-drying, edible oil used in cooking, margarines, salads, canning, for deep-frying, for shortening in pastry and bread. Seeds are eaten raw, whole roasted and salted, or chopped in confectioneries, or ground into peanut butter. Young pods may be consumed as a vegetable. Young leaves and tips are suitable as a cooked green vegetable. Other products include ice cream, massage oil and peanut milk.

Industrial uses – Groundnut oil is also used for pharmaceuticals, soaps, cold creams, cosmetics, dyes, paints, pomades and lubricants, emulsions for insect control, and fuel for diesel engines. Peanut hulls are used for furfural, fuel and as filler for fertilisers.



Further information can be obtained from

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Groundnuts



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REPUBLIC OF SOUTH AFRICA

Scientific name: *Arachis hypogaea* L.

South African names: peanuts, groundnuts, esincono, samatongomani, Matonkgomane, isivuno, dzinduhu, Matokomane

BACKGROUND

The cultivated peanut or groundnut (*Arachis hypogaea* L.), originated in South America (Bolivia and adjoining countries) and is now grown throughout the tropical and warm temperate regions of the world. This crop was grown widely by native peoples of the New World at the time of European expansion in the sixteenth century and was subsequently taken to Europe, Africa, Asia, and the Pacific Islands. Groundnut was introduced to the present South Eastern United States during colonial times. Peanut was grown primarily as a garden crop in the United States until 1870

Production areas

Province

Mpumalanga: Nkangala, Dr JS Moroka

Free State: Lejweleputswa, Nketoana

North West: Ngaka Modiri Molema, Dr Kenneth Kaunda, Bojanala

Limpopo: Bohlabela, Mopani, Vhembe, Waterberg

Northern Cape: John Taola Gaetsewe, Frances Baard district

AGRONOMIC REQUIREMENTS

Soil requirements

Groundnuts grow best in well, red-coloured, yellow-red and red well-drained fertile sandy to sandy loams with a pH range of 5.5 to 7.0. Saline soils are not suitable since peanut has a very low salt tolerance. Soils with more than 20% clay and stones will result in poor yield and make harvesting to

be difficult. Shallow and compacted soils are not preferred hence the tap root of groundnut can penetrate to the soil depth of about 2 m. The most suitable soil forms are Avalon, Bainsvlei, Clovelly, Hutton, Pinedene and Glencoe.

Climatic requirements

It requires a high temperature and a frost-free period of about 160 days. Groundnut will not reach optimum maturity for a marketable yield to justify commercial production in areas with fewer heat units during the growing season. Groundnuts germinate 95% at soil temperatures ranging from 18 to 30°C. The suitable vegetative growth temperature ranges from 20 to 35°C. However at 33°C this declines to 84%. The temperature favorable for flowering and pod formation is about 28°C.

Rainfall

Rainfall of about 500-700 mm per annum will be satisfactory for good yields of groundnuts. Wider rows are advisable in low rainfall areas whilst the narrow rows are suitable in higher rainfall areas..

Cultivars

There are few registered cultivars for groundnuts in South Africa; however research on cultivar improvements is underway.

Table 1. Some of registered cultivars are

Akwa (254)	Harts (254)	Kwarts (254)
Anel (254)	JL 24 (959)	Rambo (254)
Billy (254)	Kangwane Red (254)	Sellie
Nyanda (1137)	Mwenje (254)	Tufa (254)

CULTURAL PRACTICES

Soil preparation

Seedbed should be prepared, either on the flat or widely ridged field. Primary soil cultivation is necessary on virgin soils or any other soil type to remove debris and break the

plough layer. A uniform seedbed with sufficient planting depth and spacing, good germination, weed control and good moisture retention is imperative for good yields. All plant residues should be well incorporated into the soil.

Fertilisation

Substantial evidence exists to show that groundnuts respond to additional fertiliser applications, even though in rural situations this is not imperative. Groundnuts are adapted to a soil with a pH (H_2O) of 5, 3 or higher, if the pH is higher than 5, 3 to 8.0, certain elements become unavailable e.g. iron and zinc. Being a leguminous crop, groundnuts can fix atmospheric nitrogen (N) with the aid of root bacteria. For this reason, this crop is not dependent on nitrogen fertilisation.

Planting

The planting date for groundnuts in South Africa is mid-October to mid-November. Planting should occur during favourable soil and weather conditions. A planting depth of 5 to 7 cm is preferred for better germination when soil temperature is at 18°C or above. The preferred population density is 150 000 plants per hectare under dry land and 300 000 plants per hectare under irrigation. The ideal row width for Spanish runner type groundnut under rainfed conditions should be 90 to 100 cm spacing between rows and under irrigation ranges from 30 to 45 cm. The runner types require a row width of 60 to 72 cm and are produced under irrigation only.

Irrigation

Most of the cultivated groundnuts in South Africa are under dry land. Irrigation can be practical in areas with limited soil moisture/low rainfall areas in order to maximize production and quality. The irrigation method will depend on the available water resources and the available irrigation equipments.