

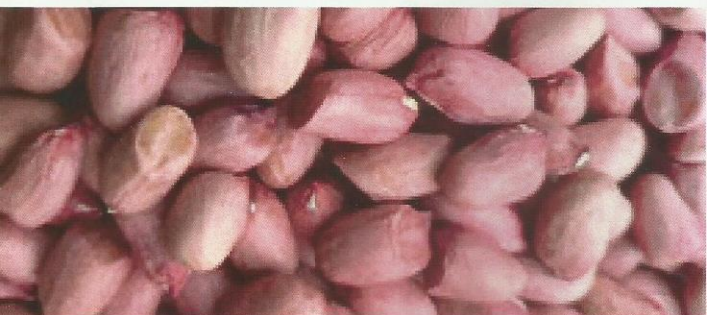
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GROUNDNUT PRODUCTION

A CONCISE GUIDE

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IDENTIFICATION

Common name: Groundnut

Scientific name: *Arachis hypogaea*

Local name: Nkatie

INTRODUCTION

Groundnuts are a popular source of food throughout the world. They are known to be a major leguminous crop in the Northern regions of Ghana as they provide crucial nutrients for physical development. Improper handling of groundnuts can be toxic to humans and also when certain molds start growing on them, they can produce aflatoxins which can cause immune-system depression, gastrointestinal dysfunction, growth retardation, liver disease and cancer. The best and most appropriate way to make groundnut production safe and reduce the risk of aflatoxin contamination is to adopt good agronomic practices.

CONDITIONS FOR GROWING GROUNDNUT

Soil conditions

The best soil type for groundnut cultivation is loose sandy-loam or clay loam. The soil should be deep, well-drained, loose, light-textured, and well-aerated with a pH of 6.5-7.0. Soils with these characteristics improves seed germination and sprouting and allows easy penetration of pegs and the formation of pods during later development of the groundnut plant.

Rainfall

The ideal rainfall needed for groundnut cultivation is from 600-1500 mm but the minimum annual rainfall required for the crop is between 450 - 1250 mm. Early maturing small seeded varieties require 300-500 mm while medium to late maturing large seeded varieties need 1000-1200 mm of rainfall.

Temperature

The lower temperature limit for the germination of groundnuts is around 18°C. Temperatures between 20-30°C result in 95% germination. However, at 33°C this declines to 84%. Optimum germination temperatures are thus between 20-30°C with a minimum of 18°C.

LAND PREPARATION

Land should be prepared early, before the rains start, so that sowing can take place early in the season. Deep ploughing, a uniform seedbed with sufficient planting depth and spacing, good germination, weed control and good moisture retention are necessary for good yields. All plant residues should be well incorporated into the soil.



PLANTING

Planting should be done on prepared beds as soon as there is adequate and consistent moisture in the soil to ensure good germination (higher rainfall periods are most advantageous). The following planting procedure should be observed: Depth of sowing; 5-7 cm; spacing between lines; 40 cm, 50 cm or 60 cm according to the type of variety, spacing within lines; 15-30 cm. A spacing of 30-50 cm should be maintained between rows and 15-20 cm between hills or stands in each row.

Intercropping

Groundnuts are commonly grown in intercropping systems, especially by small farmers who use traditional combinations often involving up to 5-6 crops. Groundnuts are mostly intercropped with annual crops. Although cassava can be used as an intercrop, cereals (e.g. millet, maize, and sorghum) are by far the most important intercrops grown with groundnuts in Ghana and other African countries.

FERTILIZATION OF CROP

Groundnut is known to be a leguminous crop which is capable of fixing atmospheric nitrogen into the soil. The application of nitrogenous fertilizer in large quantities is therefore not desirable. A lower dose of nitrogen fertilizer is to raise a good crop. The application of phosphorus and potassium are more essential and therefore needed in large quantities to obtain higher yields.

Conducting a soil test is the best way to determine whether the application of fertilizer or lime is required for a given field. Liming is necessary only when the soil pH is below 5.8. However, if soil test results are not available, the general fertilizer recommendation is: NPK kg/ha: 25kg of N - 50kg of P_2O_5 - 100 kg of K_2O

AGRONOMIC PRACTICES

Varieties: There are a lot of groundnut varieties but the common ones are Adepa, Azivivi, Jenkaar, and Nkosour. Good agronomic practices for cultivating groundnut include proper fertilizer application, proper soil moisture management, weed management, pest and diseases management which in turn improves the quality and quantity of crop yield.



- Effective weed management implies good control of weed throughout the growing season. Weeds can be controlled chemically, mechanically or by a combination of the two methods.
- Diseases of groundnuts can be classified as leaf, stem and pod diseases. Insect pests such as termites could also infest the crop, but the most important diseases remain early leafspot and Sclerotium stem rot. These diseases are both difficult to manage. Early leafspot is recognizable by the brown spots on the leaves which are surrounded by a yellow halo. Stem rot may be identified by the white mycelium (fungal growth) in the stems, pegs and pods. Both diseases are particularly devastating when the weather is warm and the soil is moist.

WEED MANAGEMENT

The presence of weeds in groundnut cultivation can drastically reduce the growth of the crop during the first 45 days. Prompt management of weeds is therefore, very necessary. The most critical period of weed competition is from 3-6 weeks after sowing. The usual method of weed management is by manual hoe weeding. The use of herbicides as a means of weed management is however gaining momentum especially in groundnut cultivation. Herbicides are efficient in suppressing or modifying weed growth in such a way as to prevent interference with crop establishment.

PEST AND DISEASE MANAGEMENT

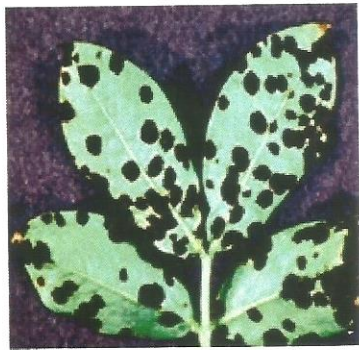
Groundnuts are exposed to pests and diseases that reduce yield and quality and increase the cost of production wherever the crop is grown. The major diseases are rosette, early and late leaf spot, rust, root rot and stem rot.

Major insect pests on groundnuts include hoppers, millipedes, termites, aphids and white grubs. A 100% loss in pod yield due to either chlorotic or green rosette disease may result if infection occurs before flowering. Successful management of aphids which serve as vectors for rosette disease will prevent further spread of the disease.





Early leaf spot



Late leaf spot



Leaf rust

HARVESTING

There are three ways by which groundnuts can be harvested. They are;

- Apply sprinkler irrigation for an hour and manually pull out the plants from the soil.
- Provide light surface irrigation 2-3 days before harvest and use a blade harrow to cut the roots 12-15 cm below the soil. Then manually pull out the plants.
- When irrigation water is scarce, use a plow or tractor-driven digger to loosen the soil. Then manually pull out the plants.

YIELD

Yields of groundnut vary from about 400 kg to several tons per hectare, depending on the production system, but on the average, the global yield is 2500 - 2700 kg per hectare.

For further information contact the following:

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