

# Groundnut Agronomy

## Lesson 1: The Basics

*Topics: Origination, Uses, Diversity, Types, Flowering & pegging, Nut development*

*Resources: Impactful Peanuts graphic*

Groundnut is a legume that develops underground and has many uses on the farm.

Around 30 to 45 days after planting groundnut begins to flower and continues throughout the growing season. Flowers develop in the center of the plant, are pollinated, and burrow into the soil, where the flower forms a pod. A pod reaches nearly full size several weeks before the nut inside is mature.

Groundnut matures in a different number of days. Spanish-types grow more upright, but also have a shorter season – 100 to 115 days after planting. Virginia-types have a sprawling growth and reach optimum maturity 120 to 150 days after planting. Virginia-type may yield twice that of Spanish type.

## Lesson 2: Planting

*Topics: Site selection, Field Prep, Variety Selection, Seed Sourcing, Germination testing, Planting depth, Planting density, Planting timing*

*Resources: Malawi Production Guide, SAWBO video*

Well drained, sandy soils are best for growing and harvesting groundnuts. About 2 to 4 weeks before the onset of rains, a farmer should begin field preparation by weeding, tilling at least 15 cm deep, incorporating fertilizers and lime and shaping beds.

Seed should be good quality, without splits, shrunken nuts or insect damage, and with the skins still on. Farmers may save seed for a maximum of three cycles, stored in the shell in a cool, dry area. Germination testing is helpful. If germination is poor, plant closer together or acquire new seed.

When selecting a variety, consider:

- *Climate:* Virginia-types prefer a mid-altitude ecology and Spanish types prefer low land
- *Growing season:* Spanish-type generally mature quicker (90-120 days), while Virginia and runner types take 110-150 days to mature.
- *Market:* Spanish-type are grown for cooking. Virginia-type are for confection. Runner types are for butters and pastes

Groundnut seed should be planted about 4 cm deep into moist soil

Planting density is important for weed and disease suppression, as well as yield. An ideal density is around 180,000 plants/ha for Virginia types and 270,000 for Spanish.

Planting timing is based on the start of the rainy season. Plants require the most moisture as pods fill.

- 12 weeks after planting for Spanish
- 15 weeks after planting for Virginia

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## Lesson 3: Fertility

*Topics: Inoculant for nitrogen fixation, Soil pH, Soil testing pH, Adding lime to raise pH*

*Resources: Malawi Production Guide*

Groundnuts can use bacteria to help obtain nitrogen from the air. If groundnut is following tobacco or well-fertilized maize, other nutrients are often adequate. Problems include:

Low pH (<6.0) If the pH is too low, farmers can apply lime to raise the pH. About 500 to 1000 kg/ha of lime can change in soil pH and works best if applied during tillage, several weeks before planting.

Insufficient bacteria to start nodulation (often after a flood). Apply inoculant to the seeds at planting.

Inadequate calcium results in poor seed development. Apply Calcium shortly after flowering (45-60 days) at 200 kg/ha to the base of the plants. Calcium sulfate provides calcium without raising pH.

## Lesson 4: Pests

*Crop rotation, Seed treatments, Weeds, Insects, Diseases, Mold*

*Resources: Production guide*

Weed control may be preventative, cultural, mechanical, biological or chemical.

To control insects, choose resistant varieties, practice crop rotation, grow a crop that can withstand pest damage, allow insect-eating animals into the field and use insecticides only if they are needed .

Diseases that impact groundnut include groundnut rosette disease, early leaf spot, late leaf spot and rust. Disease management strategies include: planting resistant varieties, good crop rotation, achieving a good plant stand quickly and, when necessary, applying fungicide.

A mold called *Aspergillus flavus* can infect nuts and make aflatoxin. Infected may be discolored or misshapen. *A. flavus* risk is highest in drought, in groundnut-maize rotation, or with improper drying.

## Lesson 5: Harvesting

*Harvest Timing, Assessing maturity, End of season, Post-harvest processing*

*Resources: SAWBO video, Controlling Aflatoxin graphic, Malawi Production Guide*

Harvesting too early may lead to an immature crop, while harvesting too late may allow pods to break off in the soil. Above-ground vegetation is not a good indication of the maturity of the pods.

Assessing maturity is done by pulling some plants, plucking the pods and assessing the color of the inside of the shell.

To reduce the risk of aflatoxin, harvested nuts should be properly dried, sorted and stored.

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## Resources

### Basics

1. GRAPHIC - Impactful Peanuts

-- [English](#)

-- [Chichewa](#)

### Planting

1. VIDEO - SAWBO animation

-- [Chichewa \(male voice\)](#)

-- [Chichewa \(female voice\)](#)

-- [English](#)

2. [Malawi Production Guide](#) (Improved varieties, page 10)

### Fertility

1. [Malawi Production Guide](#) (Identifying nodulation, page 17)

### Pests

1. [Malawi Production Guide](#) (page 25)

### Harvest

1. [Malawi Production Guide](#) (Assessing maturity, page 30)

2. GRAPHIC - Controlling Aflatoxin

-- [English](#)

-- [Chewa](#)

3. VIDEO - SAWBO Video

-- [Chichewa \(male voice\)](#)

-- [Chichewa \(female voice\)](#)

-- [English](#)