

Basic Information on Groundnut Production Principles

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Activities at North Carolina State University

50% Extension

25% Research

25% Academic

Peanut-Based Cropping Systems

Weed Science Program

USAID-funded projects in Africa related to peanut

Soil-Crop Management Systems

Integrated Pest Management

Oil Seed Crops

Deeper Background

Grew up on a small farm in eastern North Carolina

Groundnut, Soybean, Corn, Cotton, Wheat

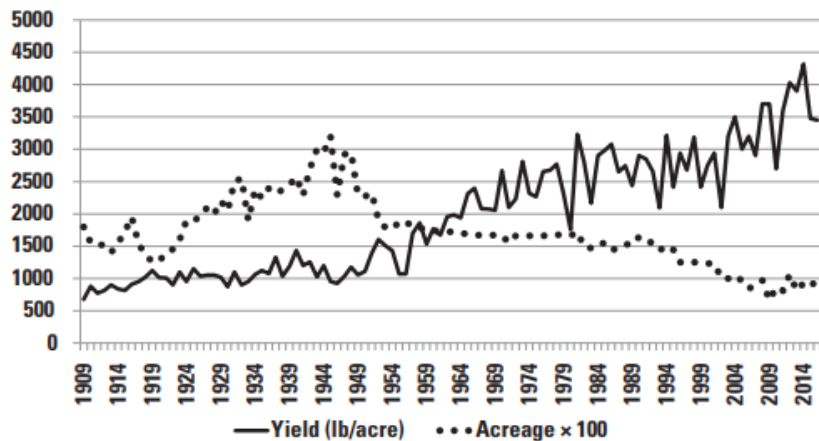
Primed flue-cured tobacco for an uncle and neighbor

Helped hang stick barns and rack barns

First new crop to work with was rice

Extension Service in North Carolina during transition
after peanut and tobacco buyout in early 2000s

Peanut acreage and pod yield in North Carolina: 1909 to 2016



2018

PEANUT
INFORMATION



Peanut Production and Pest Management

Land, Equipment, Contract, Commitment in place

- Establish good rotations on suitable soils
- Apply nutrients based on soil test (pH 6.0)
- Avoid excessive Mg and K
- Avoid fields with zinc
- Plant in mid-May
- 5 plants per foot of row on all spacings
- Conventional tillage in most instances
- Inoculate with *Bradyrhizobia* for BNF
- Apply calcium at pegging
- Apply boron and manganese as needed
- Control pests using IPM practices
- Dig and harvest in a timely manner

Steps in Growing and Delivering Successful Groundnut Crop in Malawi

- Site selection
- Land preparation
- Seed quality
- Germination
- Plant population
- Fertility and plant nutrition
- Pest management
- Plant health
- Yield and market grade
- Timely lifting and drying
- Effective storage and transport

Many details within each key!

Site selection

- Alternatives
- Rainfall pattern, duration and amount (predictability)
- Previous crop rotation history
- Native fertility
- Soil-borne pathogens
- Crops and vegetation around peanut fields
- Distance from irrigation source
- Distance from drying procedure
- Distance to storage

Land preparation

- Crusting
- Hard pans
- Salt
- Soil compaction
- Erosion (wind and water)
- Hand labor
- Mechanization
- Lime

Seed Quality

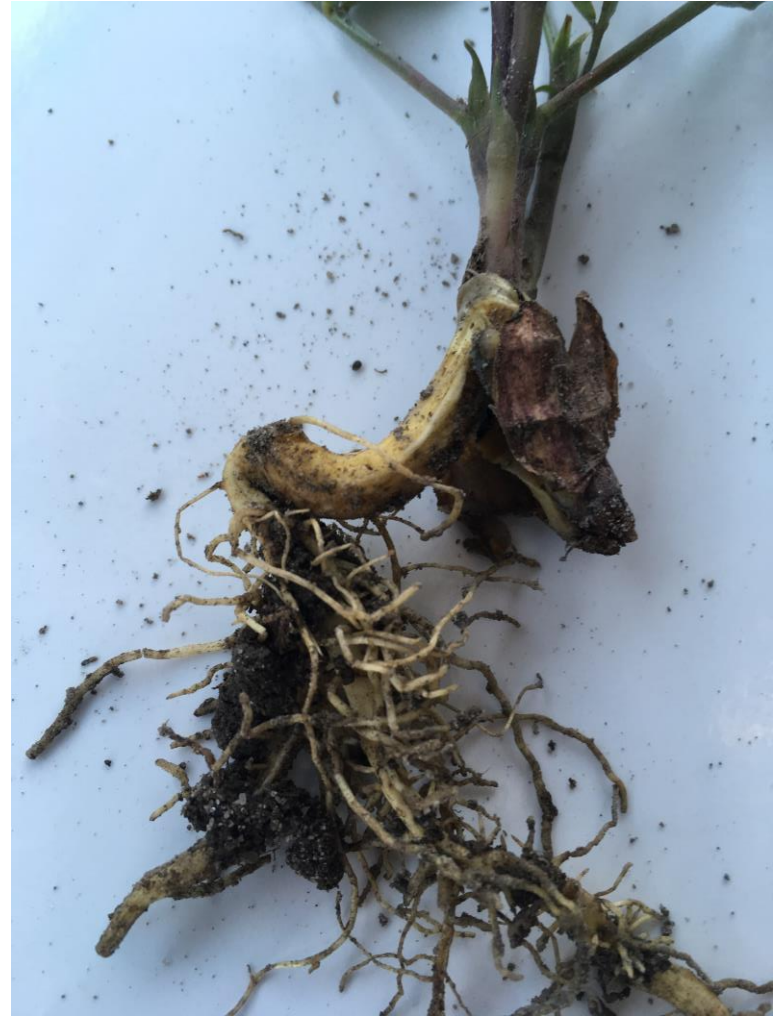
- Kernel development (growing season the previous year)
- Handling and sorting (damage)
- Storage (semi-perishable crop)
- Drying too quickly or under high temperatures (also affects quality of product sold)

Germination

- Temperature
- Soil moisture
- Dormancy (botanical classifications)

Plant Population (Number/unit area)

- Germination test
- Row spacing (previous crop ridge)
- In-row spacing (stand of 5-10 cm apart)
- Seedling pathogens









Healthy Plants

- Nutrition
- Water
- Optimize photosynthesis
- Suppress pests

Pests

- Weeds
- Arthropods
- Pathogens
- Viruses
- Nematodes
- Vertebrates

Integrated Pest Management

“Take AIM on pests”

- Avoid
- Inspect
- Manage

Avoiding Pests and Their Damage

- Crop rotation
- Variety selection
- Plant population
- Planting date
- Land preparation
- Fertility
- Irrigation

Inspecting for Pests and Their Damage

- Pest populations
- Pest injury
- Economic thresholds

Managing Pests

- No pesticides available
- Pesticides available
Chlorothalonil, others?
Pyrethroids, OPs
Herbicides?
- Safety

Timely lifting

- Heat unit accumulation
- Kernel and pod maturity
- Drought
- Hull scrape, shell out, pod blasting

Timely and adequate drying

- Minimizing aflatoxin contamination
- Drying too quickly can affect quality and flavor

United States



Ghana



Haiti



Haiti



Haiti

