

# Groundnut Farming Overview and Varieties

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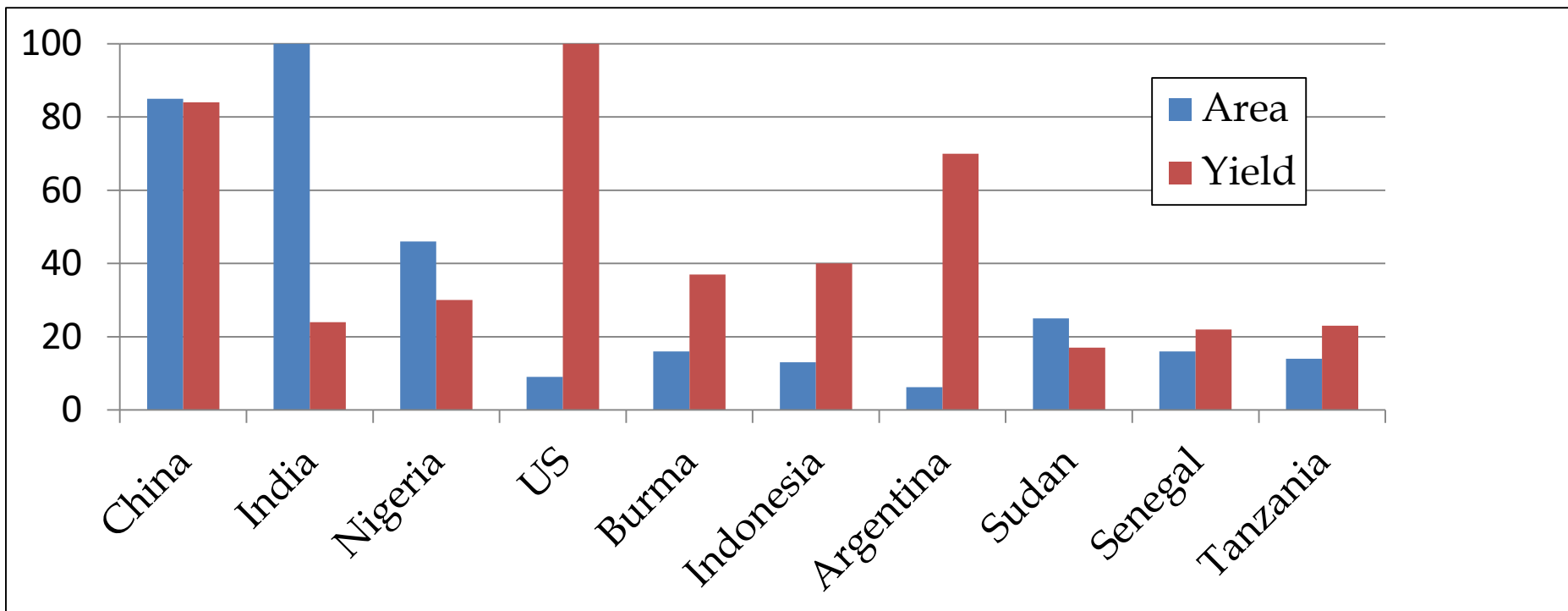
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## Relative Distribution of Harvested Peanut Land Area (Percent of India) and Relative Yield per Unit Area (Percent of US)



Fletcher and Shi. 2016. An overview of world peanut markets. Pages 267-287 in Stalker and Wilson, eds. *Peanuts: Genetics, Processing, and Utilization*. AOCS Press, Elsevier.

# The Genetic by Environment by Management by Business by Government Interaction

- Genetics (variation across crops and within crops)
- Environment (water, temperature, extremes in temperature, sunlight, pests, nutrients, others)
- Management (avoiding, buffering, and optimizing the G x E Interaction)
- Business (projected income, cost of production, and marketing)
- Government (price supports, import restrictions, market access, trade agreements, subsidies)



## Crop Rotation and Diversity



# Crop Rotation

- Markets
- Biological effects of cropping systems
- Economic effects of cropping systems
- Capital investment
- Third-party access
- Suitable land for all crops
- ***Crop rotation and crop diversity are luxuries in some areas of production***



# Production Costs

- Variable costs
  - Seed
  - Fertilizer
  - Pest management
  - Energy
  - Labor
- Fixed costs
  - Equipment (depreciation and interest on investments)
- Infrastructure costs
  - Buying points, drying and storage, grain elevators, processing facilities, transportation, storage

## Estimated Budgets for Peanut Production in India and Ghana

India		Ghana	
Input	Percent	Input	Percent
Labor	47	Labor	91
Seed	28	Plowing	9
Fertilizer	16		
Insecticide	2		
Irrigation	4		
Interest	3		

Jangid et al. 2016. Comparative Analysis of Groundnut Growing States in Western India. *Advances in Social Research*. 2:1-6.

Mochia and Abudulai. 2016. Personal communication, Ghana, West Africa.

## Estimated Budgets for Peanut Production in United States and Argentina

United States		Argentina	
Item	Percent	Item	Percent
Seed	14	Seed	14
Fertilizer	7	Planting	4
Inoculant	1	Herbicides	9
Lime	3	Fungicides	8
Gypsum	3	Spraying	4
Herbicides	8	Digging	4
Insecticides	3	Harvesting	8
Fungicides	13	Transport	8
Scouting	3	Land rent	40
Hauling	4	Administration	1
Dry and clean	14		
Check off	1		
National	1		
Crop insurance	5		
Tractor/ machinery	9		
Labor	8		
Interest	2		



Bullen et al. 2016. North Carolina Cooperative Extension Service. AG-331.

Morichetti. 2016. Personal communication, Argentina.



**Where does Malawi fit now?**

**What are the possibilities in 5 to 10 years?**

**What does it take to be sustainable?**

# Steps to sustainability

Improve genetic potential

Protect soil resources

Determine weak links in supply/value chain and invest in solutions

Supply what market demands

Enable technology adoption

# Variety Selection

Market demand

Yield potential

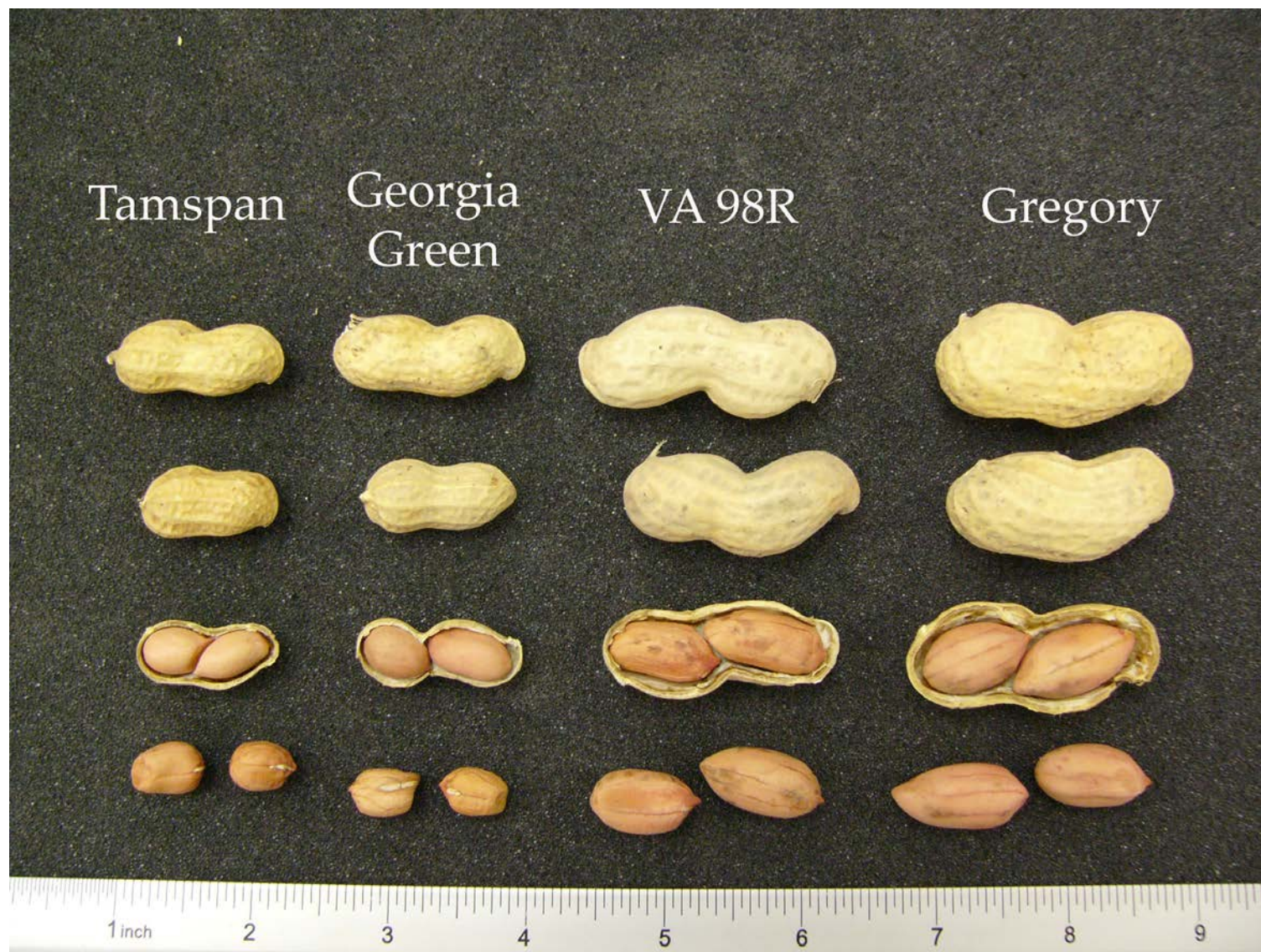
Dependability of yield

Time from planting to optimum maturity

Disease and rosette resistance

Drought tolerance

Haulm production





Center of Origin

*Arachis duranensis*







# Yield Potential of Varieties in Malawi

CG7 – most popular, Virginia

Chitala

Baka

CG12

Chalimbana

Nsinjiro



**Seed Chain**

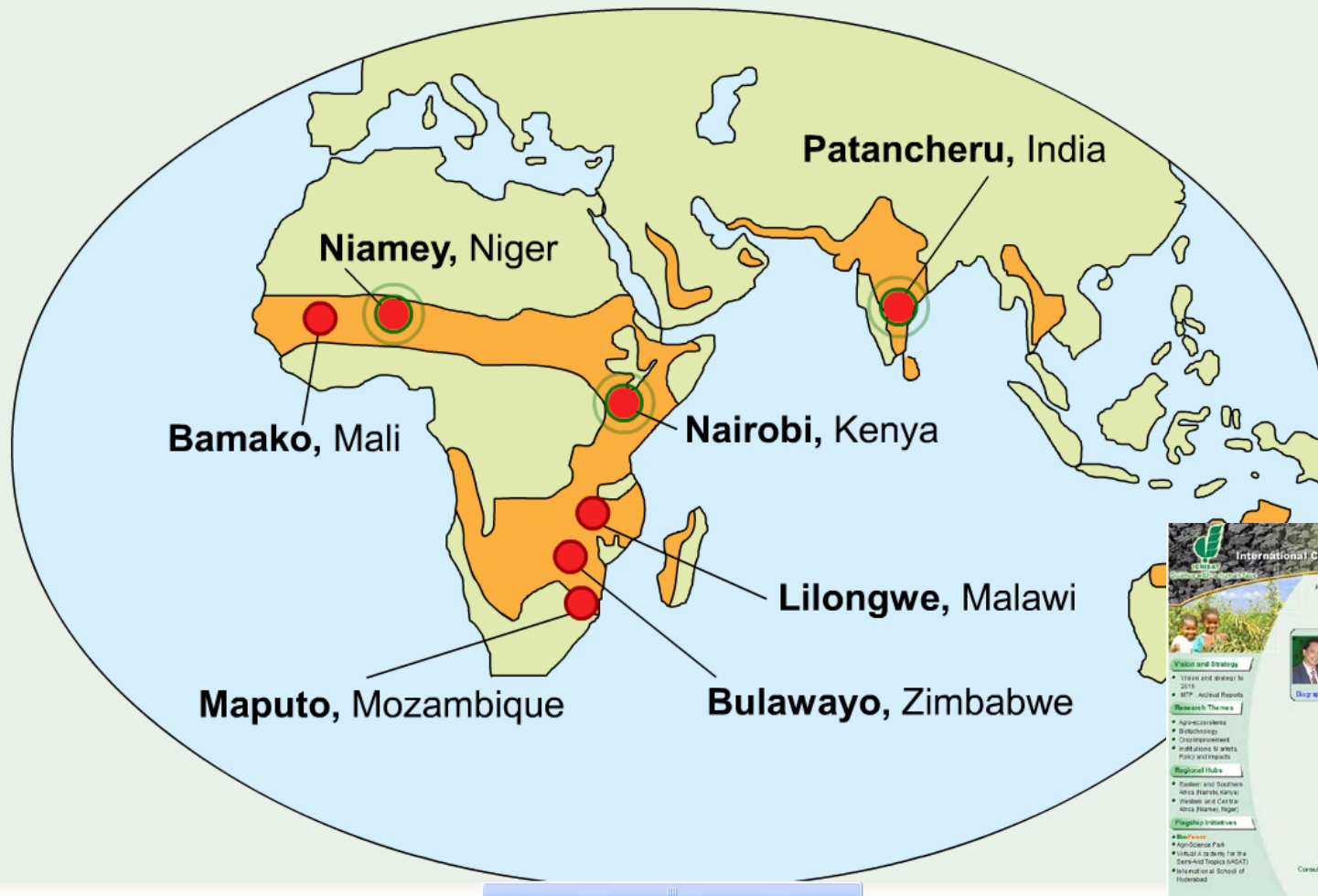
***Breeder  
Foundation  
Certified***

***Purity  
Identity  
Storage***

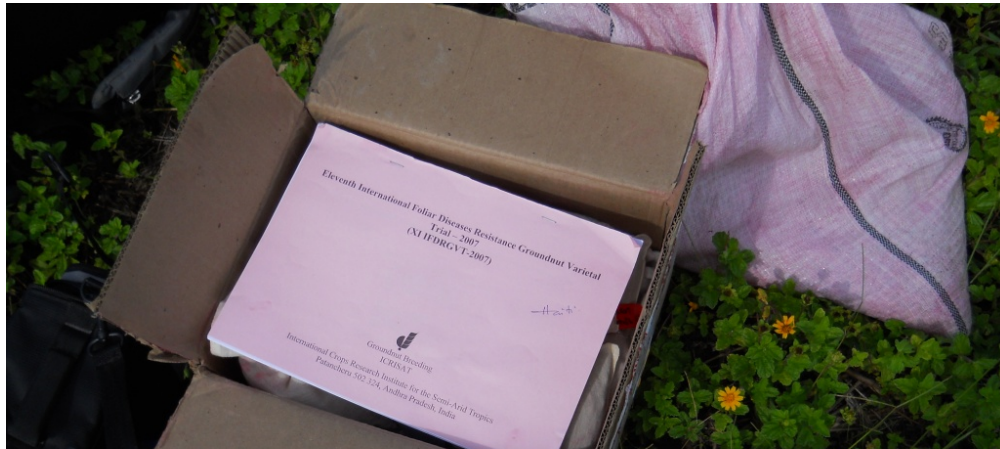
***Access  
Availability***



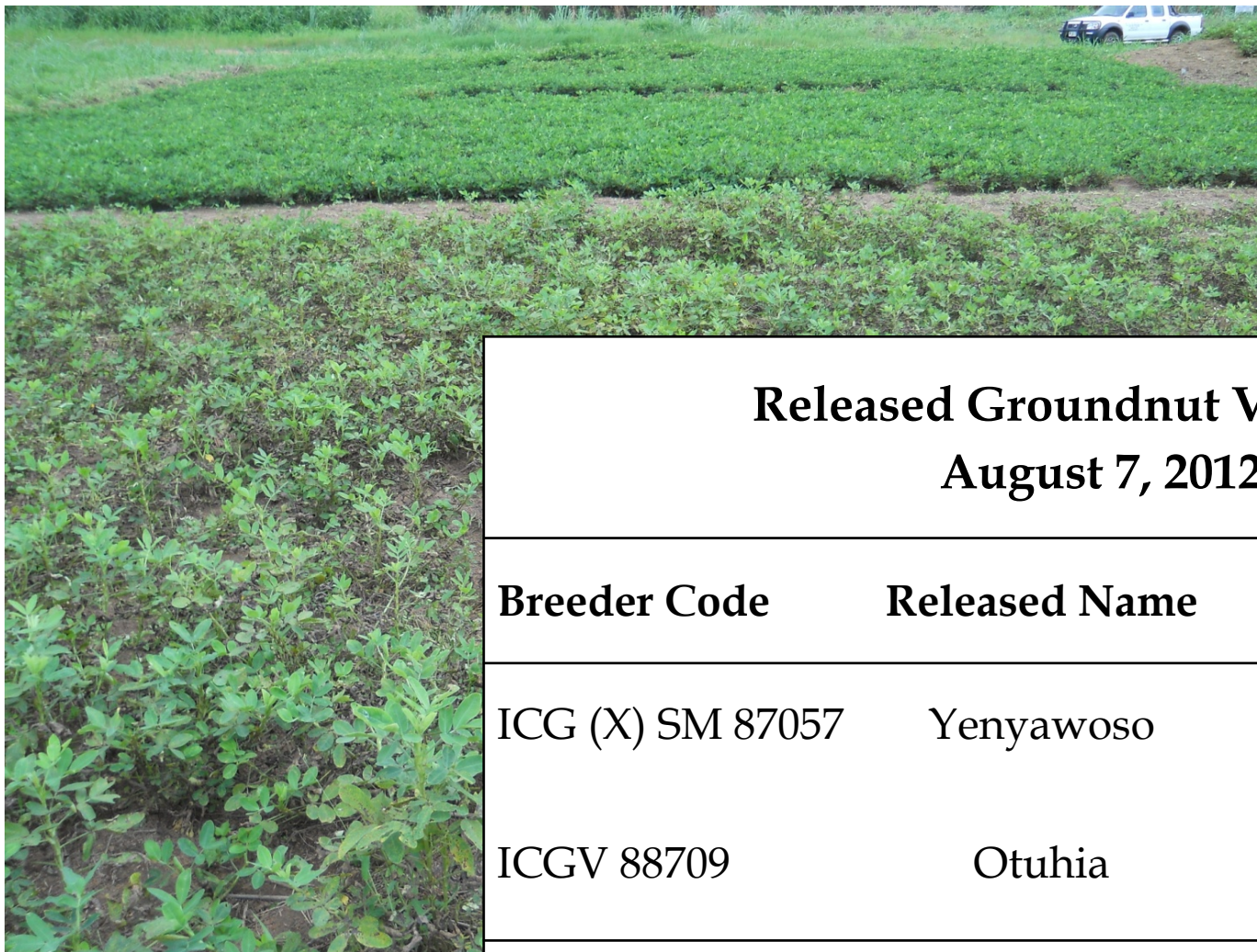
# ICRISAT's locations in the semi-arid tropics











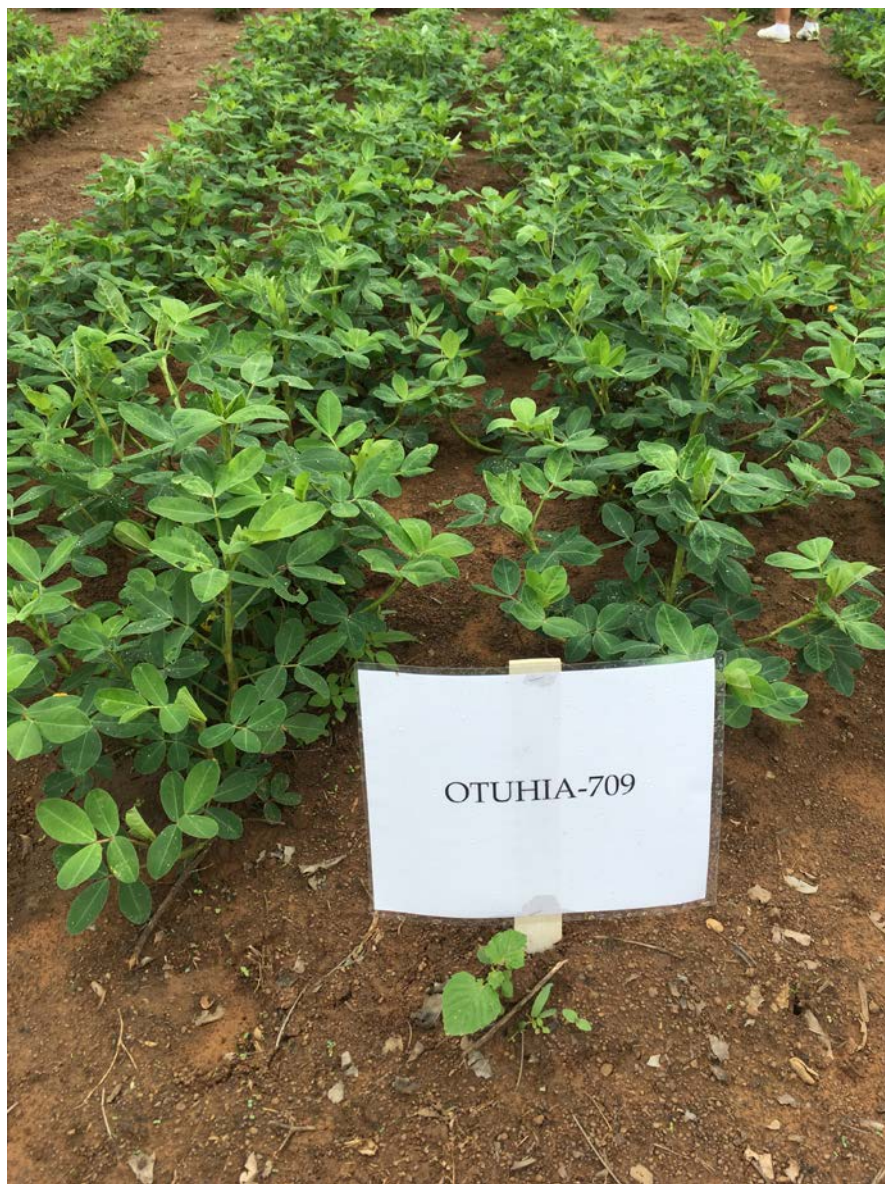
## Released Groundnut Varieties<sup>1</sup>

### August 7, 2012

Breeder Code	Released Name	Descriptor
ICG (X) SM 87057	Yenyawoso	<i>There is no one like you</i>
ICGV 88709	Otuhia	<i>Drives away poverty</i>

<sup>1</sup>Drs. James Yaw Asibuo and Mike Owusu-Akyaw, Crops Research Institute, Kumasi, Ghana





# Variety Comparison in Ghana

Cultivar	Days to 50% flowering	Days to pod maturity	Meat content	Seed weight	Seed yield
	No.	No.	%	g/100 seed	kg/ha
Otuhia	27 b	105 ab	71 a	71 a	2,140 b
<b>Yenyawoso</b>	<b>23d</b>	<b>90 c</b>	<b>72 a</b>	<b>64 c</b>	<b>2,350 a</b>
Adepa	28 ab	106 a	65 b	65 c	1,920 c
FMIX 20-1-45	27 b	104 b	67 b	69 ab	1,900 c
GK 7 High Oleic	29 a	106 a	65 b	67 bc	1,900 c
Konkoma	24 c	90 c	59 c	54 d	1,160 d
RRR-MDR-8-16	27 b	106 a	65 b	68 abc	1,940 c
P>F	0.0001	0.0001	0.0001	0.0001	0.0001
CV (%)	3.3	1.0	4.0	5.2	



## Seed Chain

*Breeder  
Foundation  
Certified*

*Purity  
Identity  
Storage*

*Access  
Availability*



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