## QUALITY OF 'GARI' AS AFFECTED BY AGE AT HARVEST, CROPPING SYSTEM AND VARIETY OF CASSAVA ROOTS



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### Introduction

- Cassava is a foremost crop of food security in Nigeria.
- Gari' is the most commonly traded and consumed cassava product.

**Statement of** 



#### using standard methods.

### Results

- The interactive effects of AH\*CS, AH\*Variety, Variety\*CS, and AH\*CS\*Variety significantly (p<0.05) affected the proximate composition of 'gari' (Table I)
- AH, variety, and the interactive effect of

Table 3: Physico-Chemical Properties of 'Gari' as Affected by Age at Harvest, Cropping System and Variety of Cassava Roots

	pН	TTA	L*	a*	b*
Range	3.48 -	0.20 -	73.54 -	0.80 -	14.57 -
	3.89	0.50	113.21	5.77	34.02
LSD	0.0352	0.0352	0.3196	0.046	0.1334
Age	* * *	* * *	* * *	***	* * *
CS	* * *	* * *	* * *	***	ns
Variety	* * *	***	***	***	* * *
Age*CS	* * *	* * *	***	***	* * *
Age*Variety	* * *	* * *	***	***	* * *
Variety*CS	* * *	* * *	***	***	***
Age*Variety*CS	* * *	* * *	* * *	* * *	* * *

# the Problem

Many resource-restricted farmers engage in its production, adopting diverse agronomic practices that could affect the



quality of products derivable from cassava.

### **Objective of the study**

• Effect of age at harvest (AH), cropping system (CS) and variety on the quality of 'gari'

### **Material and methods**



variety\*CS were of significant (p<0.05) effect on all the functional properties (Table 2)

- The independent variables, as well as their interactive effects, significantly (p<0.05) affected the physicochemical properties of 'gari' (Table 3)</li>
- AH had significant effect (p<0.05) on the trough and breakdown viscosity, as well as the peak time (Table 4)

CS = Cropping system; \*\*\* = significant (p<0.05); ns = not significant (p>0.05); LSD = Least Significant Difference

Table 4: Pasting Properties of'Gari' as Affected by Age atHarvest, Cropping System andVariety of Cassava Roots

	Peak Viscosity	Trough Viscosity	Breakdown Viscosity	Final Viscosity	Setback Viscosity	Peak Time	Peak Temperature
	(RVU)	(RVU)	(RVU)	(RVU)	(RVU)	(min)	(°C)
Range	54.58 -	54.29 -	-206.83-	101.00-	46.71 -	7.50 -	ND - 79.50
	298.21	283.33	-38.96	389.58	119.25	13.00	
LSD	16.779	12.89	12.089	16.946	5.5218	0.4093	7.2646
Age	ns	***	***	ns	ns	***	ns
CS	ns	ns	ns	ns	ns	ns	ns
Variety	ns	ns	ns	ns	ns	ns	ns
Age*CS	ns	ns	ns	ns	ns	ns	ns
Age*Variety	ns	ns	ns	ns	ns	ns	ns
Variety*CS	ns	ns	ns	ns	ns	ns	ns
Age*Variety*CS	ns	ns	ns	ns	ns	ns	ns

Table I: Proximate Composition of 'Gari' as Affected by Age at Harvest, Cropping System and Variety of Cassava Roots

	Moisture (%)	Ash (%)	Crude Fibre (%)	Protein (%)	Fat (%)	CHO (%)
Range	3.70-11.60	0.50-	1.44-	0.23-1.87	0.20-	83.12-
		2.03	2.40		1.32	90.65
LSD	0.484	0.128	0.034	0.057	0.008	0.521
Age	* * *	***	***	***	* * *	***
CS	ns	ns	ns	ns	* * *	ns
Variety	ns	***	***	***	***	* * *
Age*CS	ns	ns	ns	ns	***	ns
Age*Variety	***	***	***	***	***	***
Variety*CS	* * *	***	***	* * *	***	***
Age*Variety*CS	* * *	* * *	* * *	* * *	* * *	* * *

CS=Cropping system; \*\*\* = significant (p<0.05); ns = not significant (p>0.05)

Table 2: Functional Properties of 'Gari' as Affected by Age at Harvest, Cropping System and Variety of Cassava Roots

	Water Absorption Index (%)	Bulk Density (g/ml)	Dispersibility (%)	Swelling Power	Solubility Index (%)
Range	270.80-527.60	0.41-0.77	1.50-45.50	6.36-11.01	3.50-25.00
LSD	5.9528	0.0071	0.7507	0.1903	1.0585
Age	***	***	***	* * *	***
СР	ns	***	ns	* * *	***
Variety	* * *	***	***	***	***
Age*CS	ns	***	* * *	***	ns
Age*Variety	* * *	***	***	ns	***
Variety*CS	***	***	***	***	***
Age*Variety*CS	***	***	***	ns	***

CS = Cropping system; \*\*\* = significant (p<0.05); ns = not significant (p>0.05) CS = Cropping system; \*\*\* = significant (p<0.05); ns = not significant (p>0.05); ND = not detected

### Conclusion

- This study revealed that age at harvest, variety and cropping system had differing effects on the quality of 'gari'.
- Age at harvest is the most important factor in determining the proximate composition of 'gari'.
- Age at harvest, variety and cropping system are key factors in determining the mineral composition, pH, titratable acidity, and colour of 'gari',
- Age at harvest and variety are vital factors affecting the functional properties of 'gari'.

 TMS 97JW2 intercropped and harvested at 15 mo produced the most acceptable 'gari' while TMS 30572 intercropped and harvested at 18 mo gave the most acceptable 'eba'.

### **Selected References**

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