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### PERFORMANCE OF COWPEA (*VIGNA UNGUICULATA* L) VARIETIES OF SHORT DURATION MATURITY AT SUDAN -SAVANNA AGRO-ECOLOGICAL ZONE OF NIGERIA

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#### ABSTRACT

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These experiments were conducted in 2016 and 2017 rainy seasons at the teaching and research farm of the Federal University Dutsin-Ma (Longitude 07°29'29" E and Latitude 12°27'18" N) The objectives of the research were to evaluate the productivity of eighteen short duration maturity varieties of cowpea sourced from International Institute of Tropical Agriculture (IITA) and to recommend the most productive varieties to the communities of Sudan savanna ecological zone of Nigeria. The experiments consisted of eighteen varieties of cowpea of short duration maturity, which included IT07K-243-1-10, IT07K-230-2-9, IT08K-180-10, IT07K-291-69, IT08K-125-24, IT08K-150-27, IT10K-822-7, IT10K-822-9, IT10K-863-11, IT10K-961-7, IT10K-837-1, IT10K-817-3, IT10K-817-7, UAM14-143-4-1, UAM14-175-31-1, UAM-1055-6, UAM-1056-2 and IT99K-573-1-1 as check. These eighteen varieties were randomized and laid out in a randomized complete block design (RCBD) and replicated three times. The plot size was four ridges of 4 meters length (4x3) while the net plot was the two inner ridges (4x1.5), a 50cm alley was allowed between plots and one meter between replications. Ten plants from the net plot at full maturity were randomly harvested and used for yield analysis i.e. number of pods per plant, length of pod, number of seeds per pod, weight of 100 seeds and biological yield per plot. The collected data was subjected to statistical analysis. IT08K-125-24, IT10K-863-11, IT10K-822-7, IT10K-961-7, IT07K-243-1-10, IT07K-230-2-9, UAM-1056-2 and IT10K-817-3 recorded significantly ( $P < 0.05$ ) the highest grain yield in both years of the research compared with the check and these varieties are therefore recommended to farmers in this agro-ecological zone of Nigeria.

## INTRODUCTION

Cowpea [*Vigna unguiculata* (L.) Walp.] Is an important food legume and an integral part of traditional cropping systems in the semi-arid regions of the tropics (Singh *et al* 2003). It is used for human consumption and animal feed and also it improves soil fertility when grown, thus it has become very valuable in areas where land use has become intensified. Cowpea has outstanding features: viz., drought tolerance, shade tolerance, quick growth, and rapid provision of ground cover (Singh *et al.*, 1997). These characteristics have made cowpea an important component of subsistence agriculture in the dry savannas of the sub-Saharan Africa where it is grown as a companion crop with cereals and other food crops (Singh *et al.*, 2003). According to Kergna *et al* (2003) cowpea is grown on an estimated worldwide area of 14 million ha. However, the bulk of cowpea production comes from the drier regions of northern Nigeria (5 million ha and 2.3 million tons), Niger Republic (3 million ha and 0.4 million tons) and North East Brazil (about 1.9 million ha and 0.7 million tons). In spite of its importance and wide cultivation, the overall productivity of cowpea is very low with average yield particularly in Africa ranging from 100 to 400 kg ha<sup>-1</sup>. This is due to several biotic, abiotic and physiological constraints (Singh, 2000).

Cowpea is a legume that is extensively grown throughout sub-Saharan Africa. It is a subsistence crop, often intercropped with sorghum, maize and pearl millet. The grain provides valuable protein and the leaves are used as a nutritious vegetable. (IPM CRSP, 2000).

Millions of African farmers grow cowpea, some two hundred million Africans consume cowpea, many, maybe a majority of these farmers are women. Cowpea grain, nutritious and inexpensive, serves as a source of cheap protein for both rural and urban consumers. The cowpea grain contains about 25 percent protein and 64 percent carbohydrate (Bresanni. R., 1985). Even the goats and the cattle benefit from cowpea, this genuinely African crop, for the hay left over after the grain is harvested as a high-value nutritious forage (A BIOTECH, 2002).

In Nigeria the major constraints to the adoption of dry season dual -purpose cowpea

The protein in cowpea seed is rich in amino acids, lysine and tryptophan in comparison with cereal grain; however, it is deficient in methionine and cystine in comparison with animal protein (Davis *et al* 1991).

Cowpea is an indigenous crop that has evolved from the native wild types and its genetic diversity is greater than that of any other crop in the dry African savannah (IFAD, 2000). In semiarid zones of West and Central Africa, farmers traditionally cultivate two main types of cowpea: early maturing varieties grown for grain and late maturing varieties that are grown for fodder production (Inaizumi *et al.*, 1999)

Cowpea is the most economically important indigenous African legume crop (Langyntuo, *et al* 2003). Cowpeas are of vital importance to the livelihood of several millions of people in West and Central Africa. Rural families that make up the larger part of the population of these regions derive from its production, food, animal feed, alongside cash income.

Cowpea is referred to as the "hungry-season crop" given that it is the first crop to be harvested before the cereal crops are ready. It is a crop that offers farmers great flexibility. They can choose to apply more inputs and pick more beans, or –if cash and inputs are scarce - they can pick fewer beans and allow the plant to produce more foliage. This means more fodder for livestock, so that lower bean yields are balanced by more livestock feed, which in turn translates into more meat and milk. This flexibility in use that makes cowpea an excellent crop under the challenging climatic conditions faced by African farmers (Okike, I., 2000).

Cowpea also contributes to the sustainability of cropping systems and soil fertility improvement on marginal lands through nitrogen fixation, provision of ground cover and plant residues, which minimize erosion and subsequent land deterioration. The deep root systems of cowpea help to stabilize soil, and the ground cover it provides preserves moisture; these traits are particularly important in the drier regions where moisture is always needed, soil is fragile and subject to erosion (Bean/Cowpea CRSP West Africa Mission., 1998).

include insect attack both in the field and in storage, insufficient water, nematodes, lack of

land, and lack of seed. The magnitude of these problems also varies with location (Inaizumi et al, 1999).

Cowpea is important for food security both as a major vegetable (it contains more minerals and nutrients than most other vegetables) and as a grain it is also a significant source of vitamins (Nedumuran, S., et al 2015). Despite its importance, there is still the insufficiency of the crop due to some problems that hinders its productivity such as abiotic, biotic and socio-economic-socio-cultural and political factors. The abiotic factors include erratic rainfall, high soil temperature, low soil fertility, the biotic factors are insects pest, parasitic weed, disease induced by fungi, viruses and nematodes.

The appreciating economic importance may be due to its food value which made it a good supplement/complimentary source of protein. Cowpea contains 20-25% of protein and 64% carbohydrate (Nedumaran, S., et al 2015). Therefore has a tremendous potential to contribute to the alleviation of malnutrition specifically amongst the poor. Cowpeas contribution to ecological stability is usually underestimated. Cowpea, through its symbiotic association with beneficial bacteria, fixes nitrogen from the atmosphere to the soil and hence enhances soil fertility which also benefits other crops succeeding it. The broadleaf nature of cowpea and soil covering effect ameliorates soil erosion. Due to lower rainfall and favourable soil conditions, cowpea production is concentrated in the northern states with Borno, Bauchi and Zamfara accounting for more than 50% of the national output. (Singh, B. B., et al 1999) Cowpeas plays a significant role as a major source of protein among the rural poor, source of income, improvement of soil fertility through nitrogen fixation and protect the soil, therefore research to find out the most productive varieties in our agro-ecological zone would not be over emphasized. A lot of cowpea germplasm has being developed by IITA but there is need to evaluate the performance of these new varieties under our ecological condition. Cowpea yields are low often due to early cessation of rains therefore introducing new cowpea varieties with short maturity period would boost production, food security and livelihood of millions of small

scale farmers that grows cowpeas. Based on the above a research was conducted to evaluate the performance of 18 cowpea (*Vigna unguiculata* L) varieties of short duration maturity to identify the most productive varieties that could boost its production in the Sudan-savanna agro-ecological zone of Nigeria.

#### MATERIALS AND METHODS

These experiments were conducted in the rainy seasons of 2016 and 2017 at Federal University Dutsin-Ma, Teaching and Research Farm Badole (Longitude 07°29'29" E and Latitude 12°27'18" N) in the Sudan savanna Ecological Zone of Nigeria.

The treatments consisted of eighteen (18) varieties of cowpeas of short duration maturity as follows: IT07K-243-1-10, IT07K-230-2-9, IT08K-180-10, IT07K-291-69, IT08K-125-24, IT08K-150-27, IT10K-822-9, IT10K-863-11, IT10K-961-7, IT10K-837-1, IT10K-817-3, IT10K-817-7, UAM14-143-4-1, UAM14-175-31-1, UAM-1055-6, UAM-1055-6, UAM-1056-2 and IT99K-573-1-1 as check. This variety (IT99K-573-1-1) is considered as check because of its adaptations to the ecology of the area under study.

The aim of the study was to evaluate the performance of eighteen (18) new varieties of cowpeas of short duration maturity under the ecological condition of the area under study and identify those varieties that are high yielding and well adapted to Sudan savanna ecological environment. Each variety was randomly assigned to a plot and were laid out in a randomized complete block design (RCBD) and replicated three times. The gross plot size was 4m x 3 m (12 m<sup>2</sup>) and the net plot was the two inner rows 4m x 1.5m (6m<sup>2</sup>). The land was ploughed, harrowed and ridges were constructed before planting. Cowpeas seeds were planted at a spacing of 75cm between rows and 25cm between plants in a row. Planting was carried out on 03/08/2016 and 20/07/2017 respectively. Weeding was carried out manually at 3weeks and 6 weeks after sowing. NPK (15:15:15) fertilizer at the rate of N<sub>15</sub>P<sub>15</sub>K<sub>15</sub> Kg/Ha was applied at time of planting. Insect pests and diseases were controlled by spraying insecticide (Labdashi cyhatothrin 2.5EC) five times using knapsack sprayer at the rate of 3liter per hectare.

Data collected were on stand count, days to 50% flowering, plant height (cm), number of pods per plant, length of pod, number of seeds per pod, and 100 seed weight (g). Ten plants from the net plot at full maturity were randomly harvested and used for yield analysis i.e. Data collected were subjected to statistical analysis of variance (ANOVA) to test for significance of difference among means as described by Gomez and Gomez (1984) using SAS package version 9.0 of statistical analysis (SAS, 2002) and the differences among treatment means were separated using Duncan's Multiple Range Test (DMRT) (Duncan, 1955) at 5% level of probability.

## RESULTS

Results of our experiments indicated that growth parameters of cowpea were not significantly ( $P < 0.05$ ) different (table 1 and 2) in both years of the experimentation. Plant height, days to 50% flowering and days to maturity were not significantly ( $P < 0.05$ ) affected by type of variety in both years of experimentation. Plant height is controlled by genetic factors but was not effected significantly ( $P < 0.05$ ) between varieties and years of the experiment. In 2016 days 50% flowering occurred 44 days after planting in IT08K-180-10, which is earlier by 4 days compared with the check (IT99K-573-1-1). In 2017 IT08K-180-10 also has the least number of days to 50% flowering which was 50 days; this is significantly ( $P < 0.05$ ) earlier by 10 days compared with check 60days (IT99K-573-1-1). The average days to 50% flowering and to maturity were 45 and 75 days respectively for all the 18 cowpeas varieties in both years of experiments.

Number pods per plant (table 3) are an important parameter for yield determination in cowpea. The higher the number of pods per plant the higher the grain yield. The following cowpea varieties, IT07K-234-1-10, IT07K-230-2-9, IT08K-125-24, IT10K-822-7, IT10K-817-3, UAM14-143-4-1 and IT08K-180-10 recorded

highest number of pods per plant in 2016. While in 2017, IT07K-234-1-10, IT07K-230-2-9, IT08K-180-10, IT07K-291-69, UAM14-143-4-1 and IT10K-863-11 recorded the highest numbers of pods per plant. IT08K-180-10 had the highest number of pods per plant in 2017 which was significantly ( $P < 0.05$ ) higher by 10 pods/plant compared with the check.

Number of seeds per pod (table.3) also has significant influence on yield formation. The highest number of seeds per pod (16.1) was observed in IT10K-822-9 in 2016 but this was not significantly ( $P < 0.05$ ) different from the check (13.4seeds/pod) and the other varieties. While in 2017, IT99K-573-1-1 (the check) recorded the highest number of seeds per pod (12.0) even though the difference with other varieties was not significant ( $P < 0.05$ ). Generally higher number of seeds/pod was observed in 2016 which was 25% higher compared with 2017.

100 seeds weight (table 4) plays a very critical role in determination of cowpea yield. We observed a significant difference ( $P < 0.05$ ) in 100 seeds weight between varieties in 2016. UAM14-175-31-1, UAM14-143-4-1 and IT10K-822-9 recorded the highest 100 seeds weight and were 20.0g, 19.4g, 19.4g respectively but these were not significantly ( $P < 0.05$ ) different compared with the check. We observed no significant ( $P < 0.05$ ) difference in 100 seed weight between 2016 and 2017.

Total grain yield per plot (table 4) was significantly ( $P < 0.05$ ) affected by types of cowpea varieties. In 2016, IT10K-863-11, IT08K-125-24 and UAM-1056-2 recorded the highest grain yield per plot and were 1200g, 966.7g and 833.3g/plot respectively. These were significantly ( $P < 0.05$ ) higher compared with the check which had 500g/plot. Grain yield per plot in 2017 was significantly ( $P < 0.05$ ) lower by 330g compared with that of 2016. IT08K-125-24 recorded the highest grain yield per plot (870g) in 2017 which were higher by 387g compared with the check.

TABLE1 GROWTH PARAMETERS FOR VARIETIES OF COWPEAS OF SHORT DURATION MATURITY AT FUDMA UNIVERSITY FARM BADOLE FOR 2016 AND 2017 RAINY SEASONS

TREATMENTS	2016			2017		
	Stand count	Plant height	Perf. Score	Stand count	Plant height	Perf. Count
IT07K-243-1-10	14.00bc	54.33a	5.00	14.00bc	175.33a	5.00
IT07K-230-2-9	16.67ab	33.33e	5.00	16.67ab	161.67ab	5.00
IT08K-180-10	16.00abc	40.33cde	4.67	16.00abc	135.67abc	4.67
IT07K-291-69	16.33abc	53.67a	4.33	16.33abc	158.00ab	4.33
IT08K-125-24	14.00bc	54.33a	5.00	14.00bc	134.33abc	5.00
IT08K-150-27	15.67abc	50.00a	5.00	15.67abc	144.33abc	5.00
IT08K-822-7	14.00bc	22.67g	4.67	14.00	110.00c	4.67
IT10K-822-9	15.00abc	21.00g	4.67	15.00abc	116.33bc	4.67
IT10K-863-11	15.33abc	33.667e	4.67	15.33abc	131.67abc	4.67
IT10K-961-7	15.67abc	55.00a	4.33	15.00abc	129.67abc	4.33
IT10K-837-1	14.00bc	42.00cde	4.67	14.00bc	123.67bc	4.67
IT10K-817-3	16.33abc	49.00ac	4.67	16.33abc	120.67bc	4.67
IT10K-817-7	15.33abc	37.00de	5.00	15.33abc	116.00bc	5.00
UAM14-143-4-1	13.67c	33.33de	4.67	13.67c	161.67ab	4.67
UAM14-175-31-1	14.00bc	39.00cde	4.67	14.33abc	162.33ab	4.67
UAM-1055-6	15.00abc	32.33e	4.67	15.00abc	129.00abc	4.67
UAM-1056-2	16.33abc	45.33acd	5.00	16.33abc	98.67c	4.67
IT99K-573-1-1 as check	17.00a	50.33a	5.00	17.00a	127.67bc	5.00
SE±	0.973	3.523	0.263	0.973	16.463	0.263

Means followed by unlike letters are significantly different.

TABLE 2. GROWTH PARAMETERS FOR VARIETIES OF COWPEAS OF SHORT DURATION MATURITY AT FUDMA UNIVERSITY FARM BADOLE FOR 2016 AND 2017 RAINY SEASONS

TREATMENTS	2016		2017	
	Days to 50% flowering	Days to maturity	Days to 50%flowering	Days to maturity
IT07K-243-1-10	43.33f	74.00c	43.33f	68.67def
IT07K-230-2-9	44.00ef	74.33bc	44.00ef	69.00def
IT08K-180-10	44.00ef	75.67abc	44.00ef	68.00f
IT07K-291-69	50.33abcd	76.00abc	50.33abcd	67.33f
IT08K-125-24	51.67abc	77.00a	51.67abc	67.00f
IT08K-150-27	51.33abc	76.67a	51.33abc	67.67f
IT08K-822-7	53.00a	76.00abc	53.00a	72.00cde
IT10K-822-9	52.00ab	76.33ab	52.33ab	75.00abc
IT10K-863-11	51.67abc	76.67a	51.67abc	72.00cde
IT10K-961-7	51.00abcd	76.00abc	51.00abcd	69.67def
IT10K-837-1	48.00cd	76.33ab	48.00cd	69.00def
IT10K-817-3	50.67abcd	77.00a	50.67abcd	68.33ef
IT10K-817-7	52.00ab	76.67a	52.00ab	72.33bcd
UAM14-143-4-1	54.00a	76.67a	54.00a	76.33a
UAM14-175-31-1	53.00a	75.33abc	53.00a	78.00a
UAM-1055-6	50.33abcd	75.33abc	50.33abcd	76.00ab
UAM-1056-2	47.33de	75.67abc	47.33de	72.00cde
IT99K-573-1-1 as check	48.67bcd	76.00abc	48.66bcd	72.00cde
SE±	1.364	0.732	1.364	1.371

Means followed by unlike letters are significantly different.

Table 3: YIELD PARAMETERS FOR VARIETIES OF COWPEAS OF SHORT DURATION MATURITY AT FUDMA UNIVERSITY FARM BADOLE FOR 2016 AND 2017 RAINY SEASONS

TREATMENTS	2016			2017		
	No of pods per plant	No of seed/pod	Pod weight(g)/plot	No of pods per plant	No of seed/pod	Pod weight(g)/plot
IT07K-243-1-10	52.667a	14.67abc	533.30g	53.00ab	10.40cd	966.70abcd
IT07K-230-2-9	51.00ab	12.83abc	628.30fg	47.50ab	10.33d	783.30bcd
IT08K-180-10	48.67ab	12.23bc	1036.70cdefg	54.50a	10.80abcd	683.30bcd
IT07K-291-69	43.00b	11.37c	1265.7bcde	48.00ab	11.20abcd	616.70cd
IT08K-125-24	52.00a	12.67abc	1465.30abc	47.50ab	11.600abc	1350.00a
IT08K-150-27	47.00ab	12.40bc	808.30defg	47.50ab	11.00abcd	1333.30a
IT08K-822-7	49.00ab	16.10a	1393.30abcd	43.00ab	10.87abcd	1150.00ab
IT10K-822-9	44.67ab	12.50abc	873.30 defg	44.00ab	11.80ab	933.30abcd
IT10K-863-11	47.67ab	12.57abc	1946.70a	45.00ab	11.53abcd	900.00abcd
IT10K-961-7	45.33ab	15.73ab	1136.70bcdef	41.00ab	11.00abcd	950.00abcd
IT10K-837-1	47.00ab	12.733	940.00cdefg	47.50ab	10.73bcd	1100.00abc
IT10K-817-3	50.00ab	13.20abc	783.30efg	48.00ab	11.40abcd	1366.70a
IT10K-817-7	42.33b	13.23abc	1075.00bcdefg	39.50b	11.53abcd	833.30bcd
UAM14-143-4-1	49.67ab	13.10abc	1090.00bcdefg	49.50ab	11.27abcd	700.00bcd
UAM14-175-31-1	45.33ab	13.60abc	910.00cdefg	42.00ab	11.600abc	550.00d
UAM-1055-6	45.67ab	12.67abc	866.70defg	46.50ab	10.47cd	550.00d
UAM-1056-2	45.67ab	12.87abc	1381.70abcd	42.50ab	11.53abcd	533.30d
IT99K-573-1-1 as check	47.67ab	13.43abc	1566.70ab	41.50ab	12.00a	950.00abcd
SE±	2.596	1.278	205.287	4.124	0.423	171.189

Means followed by unlike letters are significantly different.

Table 4: GROWTH PARAMETERS FOR VARIETIES OF COWPEAS OF SHORT DURATION MATURITY AT FUDMA UNIVERSITY FARM BADOLE FOR 2016 AND 2017 RAINY SEASONS

TREATMENTS	2016		2017	
	100 seed weight(g)	Yield/plot (g)	100 seed weight(g)	Yield/plot (g)
IT07K-243-1-10	15.13d	333.33e	18.61abcde	766.70ab
IT07K-230-2-9	15.02d	333.33e	17.18cde	483.30bcd
IT08K-180-10	16.24cd	666.70bcde	19.14abc	400.00bcd
IT07K-291-69	17.49abcd	800.00abcd	18.89abc	370.00cd
IT08K-125-24	17.56abcd	966.70ab	16.85cde	870.00a
IT08K-150-27	17.76abcd	400.00de	18.61abcde	766.70ab
IT08K-822-7	18.60abc	633.30bcde	19.90ab	600.00abcd
IT10K-822-9	19.48a	466.70cde	18.66abcd	533.30bcd
IT10K-863-11	15.04d	1200.00a	16.05de	533.30abcd
IT10K-961-7	15.38d	633.30bcde	16.10de	616.70abcd
IT10K-837-1	17.82abc	450.00cde	18.56abcde	666.70abc
IT10K-817-3	18.30abc	566.70bcde	17.56bcde	543.30abcd
IT10K-817-7	17.45abcd	700.00bcde	20.730a	316.70cd
UAM14-143-4-1	19.43ab	666.70bcde	19.20abc	450.00bcd
UAM14-175-31-1	20.03a	350.00e	18.83abc	300.00cd
UAM-1055-6	17.31abcd	400.00de	19.42abc	283.30cd
UAM-1056-2	15.80dc	833.30cbc	16.02e	250.00d
IT99K-573-1-1 as check	16.87bcd	500.00cde	17.04cde	483.30bcd
SE±	1.013	0.973	0.911	129.379

Means followed by unlike letters are significantly different.

**DISCUSSION**

Days to 50% flowering, days to maturity and plant height were not significantly ( $P < 0.05$ ) different between the varieties and the years of experiments, this could be attributed to the genetic factors inherent in all the varieties tested. Similar observations were reported by Dugje *et al* (2009), Kamara *et al* (2001) and Singh *et al* (1999).

The better performance recorded as per number of pods per plant could be attributed to good agronomic practices and adaptation of the varieties to the ecological environment. Cowpeas varieties that are better adapted to the environment tend to be more productive hence produces more pods per plant and subsequently produces more yield. Variety IT07K-243-1-10 performed poorly in 2016 produced only 333g per plot but recorded a more than double that yield in 2017 766g/plot this low yield recorded in 2016 may be due to early cessations of rains in 2016 and heavy pest infestations. Some varieties that performed poorly in 2016 and 2017 i.e. IT07K-230-2-9 and UAM14-175-31-1 achieved such low yield as a sign of poor adaptation to the ecological environment and lack of tolerance to local pest and diseases. Similar results were reported by, (Kamara *et al* 2001, Singh *et el* 1999, Singh. B. B., 2000 and Onyibe *et al* 2006).

Number of seeds per pod could be attributed to inherent genetic makeup, soil fertility, environmental condition as well as good agronomic practices during the reproductive stage. . Number of seeds per pod is closely related to yield, thus the higher the number of seeds per pod the higher the grain yield. This yield parameter could be enhanced through better nutrition and pest control. According to works of Singh *et el* (1999) chemical pest control in cowpeas can double or even triple the yield of cowpea. The five sprays during this experiment might have contributed to the enhanced number of seeds per pod in all the varieties and in all the years of this experimentation.

Improvement in 100 seed weight (Table 4) as was recorded in 2016 could be attributed to good nutrition and better agronomic practices. Kamara *et al* (2001) and Sanusi *et.al* (2014) reported similar findings. UAM14- 143-

4-1and UAM-1056-2-1 showed better adaptation to the environment hence produces well filled seeds that are heavier and produces high grain yield per plot. Superior performance of UAM14- 143-4-1and UAM-1056-2-1, were reported in the works of Onyibe *et al* (2006).

Recording of high grain yield of cowpeas per plot (table 4) in both year of experimentation could be attributed to high number of plant count, pods per plant, seeds per pod and heavier 100 seeds weight. Any increase in the yield parameters would lead to increase in yield. Sanusi *et al* (2014) reported significant increase in yield of cowpea with improvement in level of phosphorous nutrition. Lower yield that was recorded in some varieties could be traced to having lower number of pods per plant, lower number of seeds per pod and low 100 seeds weight. Singh *et al.*, (2003), and Kamara *et al* (2001) reported similar observations.

**Conclusion and Recommendations**

Introducing new cowpea varieties that are high yielding and of short duration maturity to Sudan Savanna ecological zone would enhance food security and income of the small scale farmers who constitute the bulk of cowpeas growers in the country. The short maturing varieties of cowpea developed by IITA posses a lot of potential for boosting cowpea production in the face of changing climate occasioned by early cessation of rains in the Sudan savanna ecological zone of Nigeria.

Evaluating these 18 new short duration maturity varieties of cowpeas under Sudan savanna agro-ecological zone has helped us to identify the most productive lines (IT08K-125-24, IT10K-863-11, IT10K-822-7, IT10K-961-7, IT07K-243-1-10, IT07K-230-2-9, UAM-1056-2 and IT10K-817-3) that could be upscale to wider areas.

Based on the result of our two years experiments we concluded that the following varieties of cowpeas IT08K-125-24, IT10K-863-11, IT10K-822-7, IT10K-961-7, IT07K-243-1-10, IT07K-230-2-9, UAM-1056-2 and IT10K-817-3 were identified as the most productive, and therefore recommended to farmers in this agro ecological zone.

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