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# IDENTIFICATION OF ELITE CULTIVARS IN MAIZE (*Zeamays* L.) GERMPLASM BASED ON AGRONOMICAL CHARACTERS

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## ABSTRACT

Maize *(Zea mays* L.) is the largest crop in the world and the first cereal produced front of wheat.Thus, there arises the need to highlight some local maize varieties that stand out from other varieties and meet the requirements of producers and consumers. This study aims to evaluate the performance of ten varieties of maize in agroecological conditions of South Benin, in order to identify the best. Ten corn accessions collected in Katagon regions Zoungbomin and Ifangni of (South Benin) were evaluated morphologically in a device in random randomized blocks. Twenty four morphological characters selected from maize descriptors were used. The descriptive analysis revealed a significant diversity among accessions, marked by a significant gap between the minimum and maximum values. Thus, eight variables (male flowering to 50%; 50% female flowering, plant height, height of ear insertion, number of primary branch of the tassel, average number of kernels per row, weight of 100 grains, maturity), contributing most discriminating varieties "Lagos" and"Carder" despite their performance. These characters could be used inbreeding and improvement programs.

**Keywords:** Variety, maize, morphological, genetic diversity, Benin

## INTRODUCTION

Maize *(Zea mays* L.) is the largest crop in the world and the first cereal produced front of wheat, with a production of 843 million tons in 2014, against 653 million tons for wheat (1). In Benin corn, is also the most cultivated cereal, and holds first place with nearly 70% of cereal area planted. In southern Benin, it is the staple food with a consumption of forms of diversity (fresh corn, roasted corn, corn dough patty). Its production is estimated at over 900 000 tons, accounting for about four-fifths of the national cereal production. Despite the favorable conditions enjoyed by the culture, he knows an evolution saw tooth (2); although the research conducted in recent years have led to the development of improved varieties, some of which are already popular (3); it must be noted that these improved varieties are very few adopted by the producers for several reasons including their requirements in specific input and technological and organoleptic qualities that do not always meet the needs of users (4; 5; 6). Thus, there arises the need to highlight some local maize varieties that stand out from other varieties and meet the requirements of producers and consumers. Moreover, in the current highly unstable agro-climatic conditions, it is urgent to screen varieties / ecotypes in order to highlight the best performers. This study aims to evaluate the performance of ten varieties of maize inagroecological conditions of South Benin, in order to identify the best.

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### Study site

The experiment was conducted from 29 May to 12 September 2014 at the experimental site of Faculty of Agricultural Sciences of the UAC to Sekou (town of Allada) (2 ° 19 'E, 6 ° 12' N ), located at 50 km north of Cotonou. The climate is sub-equatorial with two rainy seasons and two dry seasons. There is an average 1200 mm of water for about 85 days of rain per year. The average temperature varies between 27 and 29 ° C with relative humidity averaged 70%. The vegetation is of Guinean. The soil, commonly known as earth bar, is ferralitique kind desaturated to kaolinite.

## MATERIAL AND METHODS

### Plant materiel

The plant material used as part of our work is exclusively maize. Tables 1 present the ten local varieties used and their characteristics.

**Table 1: Characteristics of varieties studied**

| Name of the cultivar | Cycle according to the producer | Ethnique group | Status of the sample | Sample origin | Frequency | Resistance to the dryness | vermin resistance in stock | Color |
|---|---|---|---|---|---|---|---|---|
| Massahoué-gotinwéwé (V1) | 2 month½ | Goun | Cultivar of the territory | Garret | Abundant | No | average | yellow |
| Massahoué-gotinvè (V2) | 3 month½ | Goun | Cultivar of the territory | Garret | Abundant | average | average | yellow |
| Lagos (V3) | 3 month | Goun | Imported | Garret | Occasional | average | Bad | Red |
| Cader (V4) | 2 month ½ | Goun | improved | Garret | Occasional | Maid | Bad | White |
| Massahou-éwéwé (V5) | 2 month½ | Goun | Cultivar of the territory | Garret | Abundant | Maid | Maid | White |
| Massahoué (V6) | 3 month ½ | Goun | Cultivar of the territory | Garret | Abundant | Maid | Maid | Yellow |
| Massahou-éwéwé (V7) | 3 month | Goun | Cultivar of the territory | Garret | Abundant | Maid | average | White |
| Massahou-éwéwé (V8) | 2 month ½ | Nago | Cultivar of the territory | Garret | Frequent | Maid | Maid | White |
| Massahou-éwéwé (V9) | 2 month ½ | Goun | Cultivar of the territory | Garret | Frequent | Maid | Maid | White |
| Massahou-évèvè (V10) | 3 month½ | Goun | Cultivar of the territory | Garret | Abundant | Maid | average | White |

### Methods

#### Sampling design

The experimental design is a randomized block Fisher with four repetitions, of which ten treatments (ten varieties of corn) namely: Massahouégontinwéwé, Massahouégontivé, Lagos, Carder, Massahouéwéwé, Massahoué, Massahouéwéwé, Massahouéwéwé, Massahouéwéwé, Massahouévèvè, used in this study. Land dimensions are 3 m to 1.2 m. The spacing between planting holes is 0.4 m × 0.8 m and the spacing between lines is 0.8 m. The alleys between repetitions and elementary plots are respectively 1 m and 0.6 m.

#### Cultural operations, measured parameters and data collected

The test site was mowed and plowed flat, then fertilized by the intake of 78g a mixture of TSP and 98g K2O per basic plot as basal dressing. The sowing took place after soil preparation and basal dressing at 2 grains by seed holet. The first weeding and hoeing the second held respectively 15 and 45 JAS JAS. The plants were thinned to 46 JAS stage five sheets; then a urea intake of 36g by elemental plot was made. The harvest took place 107 days after sowing

The following actions were taken: plant height, length of plant, plant width, circumference collar, male flowering female flowering, branching away from the panicle, number of primary branch of the panicle, panicle length, number of ears by foot, ear insertion height, leaf number above the ear, spike length, diameter of the spike, plant height, circumference of the collar of the adventitious root, maturity, number of stored grain, average grain, weight of 100 grains, grain color, grain length, grain width, grain diameter, according to the descriptors of maize.

#### Statistical analysis of data

Statistic.8 the software was used for analysis of variance (ANOVA) to compare means using the LSD test at the 5% threshold. A descriptive statistical analysis was conducted in order to investigate the

differences between the coefficients of variation for the characters semi cycle of flowering and plant maturity, while the variance analysis focused on the characters number of primary branch of the panicle, number of ear per plant, height of insertion of ear and plant heigh. Minitab the software has achieved the matrix correlation.

## RESULTS

### Qualitative characters analysis in prospective areas

The color of the grains presents a variation on all 10 varieties. White corn grains account for 50%. They are cultivated in the areas surveyed

**Table 2:** Distribution of grains color in the areas surveyed

| Characters | | Numbers of observation by area | | | | |
|---|---|---|---|---|---|---|
| | | Katagon | Zoungbomin | Ifangni Centre | Total | Frequency (%) |
| **Grains color** | yellow | 2 | 1 | 1 | 4 | 40 |
| | Red | 1 | 0 | 0 | 1 | 10 |
| | White | 2 | 1 | 2 | 5 | 50 |
| | Total | 5 | 2 | 3 | 10 | 100 |

**Table 3: Distribution of color tassel and sil**

| Characters analysis | | Varieties | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **V1** | **V2** | **V3** | **V4** | **V5** | **V6** | **V7** | **V8** | **V9** | **V10** | **Total** | **Frequency** |
| Panicle color | Green | 4 | 42 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 28 | 70 |
| | Purple | 0 | 0 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 12 | 30 |
| | Total | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 40 | 100 |
| Silk color | Green | 4 | 4 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 28 | 70 |
| | Purple | 0 | 0 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 12 | 30 |
| | Total | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 40 | 100 |

**V1: Massahouégontinwéwé; V2: Massahouégontivé; V3: Lagos; V4 :Carder ;V5 :Massahouéwéwé ;T6 :Massahoué ;T7 :Massahouéwéwé;V8 : Massahouéwéwé ;V9 :Massahouéwéwé ;V10:Massahouévèvè.**

**Table 4: minimum, maximum values, mean, standard deviation, coefficientvariation of 19 quantitative traits studied**

| Variables | X | Max | Min | SD | C.V (%) |
|---|---|---|---|---|---|
| Circ (cm) | 5,6453 | 6,3000 | 5,0700 | 0,5876 | 20,82 |
| L (cm) | 59,342 | 69,410 | 46,155 | 8,9551 | 30,18 |
| L (cm) | 21,420 | 24,070 | 18,085 | 14,790 | 138,10 |
| FLOM (jrs) | 49,625 | 52,000 | 47,750 | 2,5228 | 10,17 |
| FLOF (jrs) | 52,800 | 55,000 | 51,250 | 2,42447 | 9,18 |
| DRP (cm) | 11,805 | 13,065 | 10,560 | 1,0272 | 17,40 |
| LP (cm) | 33,195 | 35,270 | 31,395 | 1,7938 | 10,81 |
| HPL (cm) | 142,05 | 149,95 | 131,61 | 8,4042 | 11,83 |
| NFE | 5,6700 | 6,0500 | 5,4000 | 0,2559 | 9,03 |
| CAR (cm) | 5,5235 | 5,8700 | 4,9850 | 0,2565 | 9,29 |
| Mat (jrs) | 115,83 | 99,00 | 91,00 | 63,903 | 110,34 |
| LE (cm) | 107,68 | 121,35 | 96,51 | 8,8042 | 16,35 |
| DE (cm) | 34,590 | 35,859 | 32,204 | 2,3085 | 13,35 |
| NGR | 11,790 | 12,700 | 11,150 | 0,7082 | 12,01 |
| NMGR | 23,980 | 26,650 | 20,600 | 2,4079 | 20,08 |
| P100G(g) | 24,815 | 28,300 | 21,075 | 2,4619 | 19,84 |
| DG (cm) | 4,5242 | 4,7100 | 4,1985 | 0,4263 | 18,84 |
| LG (mm) | 9,3027 | 9,5900 | 8,5845 | 0,5276 | 11,34 |
| IG (mm) | 8,6004 | 8,9910 | 7,8650 | 0,4368 | 10,16 |

**X: Average ; Max: Maximum value ; Min: Minimal value; SD:Standard of deviation; CV: Coefficient of variation**

**Table 5: Change in the number of primary branch, number of cob by foot and height insertionears**

| Varieties | Numbers of primary branch of the panicle | Number of ears per seedling | Height of insertion of ears (cm) |
|---|---|---|---|
| V1 | 18.650ab | 2.2500a | 81.000ab |
| V2 | 16.050ab | 2.2500a | 87.500a |
| V3 | 15.300ab | 1.7500abc | 78.050ab |
| V4 | 15.450ab | 1.5000bc | 71.700ab |
| V5 | 14.850ab | 2.0000ab | 75.850ab |
| V6 | 13.500b | 1.7500abc | 70.380ab |
| V7 | 20.575a | 2.0000ab | 62.000b |
| V8 | 17,400ab | 2.0000ab | 72.600ab |
| V9 | 15.200ab | 2.0000ab | 72.600ab |
| V10 | 18.125ab | 1.2500c | 72.950ab |
| P | 0.03* | 0.0265* | 0.022* |
| $LSD_{0,05}$ | 6.9761 | 0.5746 | 24.656 |

*** Significant difference at 5% level among varieties, $LSD_{0.05}$: Least Significant Difference at 5%, the numbers followed by the same letter are not significantly different at 5% level, P: probability, V1: Massahouégontinwéwé; V2: Massahouégontivé; V3: Lagos; V4 :Carder ;V5 :Massahouéwéwé ;T6 :Massahoué ;T7 :Massahouéwéwé;V8 : Massahouéwéwé ;V9 :Massahouéwéwé ;V10:Massahouévèvè.**

**Table 6: Correlation matrix of the studied characters**

| | HP | CirC | LF | lF | FLM | FLF | DRP | LP | NBP | NE.P | HIE | NFE | Mat | LE | DE | NGR | NMGR | P100G | LG | lG | DG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **HP** | 1 | | | | | | | | | | | | | | | | | | | | |
| **CirC** | **0,68** | 1 | | | | | | | | | | | | | | | | | | | |
| **LF** | 0,5 | 0,31 | 1 | | | | | | | | | | | | | | | | | | |
| **Lf** | -0,2 | -0,1 | 0,41 | 1 | | | | | | | | | | | | | | | | | |
| **FLM** | 0,13 | -0,1 | -0,5 | -0,2 | 1 | | | | | | | | | | | | | | | | |
| **FLF** | 0,05 | -0,1 | **-0,6** | -0,2 | **0,97** | 1 | | | | | | | | | | | | | | | |
| **DRP** | **0,83** | 0,4 | **0,51** | -0,1 | 0,39 | 0,23 | 1 | | | | | | | | | | | | | | |
| **LP** | 0,49 | **0,76** | 0,35 | -0,3 | -0,1 | -0,3 | 0,47 | 1 | | | | | | | | | | | | | |
| **NBP** | -0,1 | -0,1 | -0,3 | 0,12 | 0,36 | 0,34 | 0,2 | -0,1 | 1 | | | | | | | | | | | | |
| **NE.P** | 0,23 | 0,02 | 0,01 | -0,4 | **0,63** | **0,55** | **0,55** | 0,21 | 0,13 | 1 | | | | | | | | | | | |
| **HIE** | **0,89** | **0,5** | 0,34 | -0,1 | 0,45 | 0,36 | **0,86** | 0,27 | 0,14 | 0,42 | 1 | | | | | | | | | | |
| **NFE** | 0,12 | 0,21 | **0,72** | 0,19 | **-0,8** | **-0,9** | 0,05 | 0,45 | -0,4 | -0,4 | -0,2 | 1 | | | | | | | | | |
| **Mat** | **0,51** | 0,49 | 0,14 | 0,13 | **0,59** | **0,56** | **0,5** | 0,13 | -0,1 | 0,44 | **0,65** | -0,4 | 1 | | | | | | | | |
| **LE** | 0,26 | 0,22 | 0,47 | -0,1 | -0,4 | **-0,5** | 0,13 | 0,48 | **-0,7** | -0,1 | 0,06 | **0,61** | -0,2 | 1 | | | | | | | |
| **DE** | 0,16 | 0,34 | **0,57** | 0,31 | **-0,6** | **-0,6** | -0,1 | 0,28 | **-0,7** | -0,5 | -0,1 | **0,67** | 0,06 | **0,63** | 1 | | | | | | |
| **NGR** | **0,69** | 0,48 | 0,35 | 0,17 | 0,41 | 0,29 | **0,66** | 0,32 | -0,2 | 0,29 | **0,83** | -0,1 | **0,68** | 0,39 | 0,16 | 1 | | | | | |
| **NMGR** | 0,43 | 0,44 | 0,49 | 0,16 | -0 | -0,1 | 0,34 | **0,5** | **-0,6** | 0,06 | 0,34 | 0,37 | 0,42 | **0,78** | **0,68** | **0,73** | 1 | | | | |
| **P100G** | 0,1 | -0,2 | 0,25 | -0,4 | -0,5 | -0,5 | -0 | -0 | -0,2 | -0,1 | -0,2 | 0,46 | **-0,6** | 0,24 | 0,13 | -0,48 | -0,246 | 1 | | | |
| **LG** | 0,47 | -0,1 | 0,27 | -0,2 | 0,07 | 0,11 | 0,32 | -0,3 | -0,4 | 0 | 0,33 | 0,02 | 0,27 | 0,05 | 0,29 | 0,15 | 0,154 | 0,456 | 1 | | |
| **lG** | -0,5 | **-0,6** | -0,2 | -0,2 | -0,2 | -0,3 | -0,4 | -0,2 | -0,1 | -0,3 | **-0,6** | 0,31 | **-0,7** | 0,25 | 0,09 | **-0,54** | -0,138 | **0,545** | 0,11 | 1 | |
| **DG** | 0,15 | 0,09 | 0,39 | 0,08 | -0,4 | **-0,5** | 0,21 | 0,32 | -0,1 | -0,3 | -0,1 | **0,73** | -0,3 | 0,33 | 0,27 | -0,01 | 0,213 | 0,226 | 0 | 0,41 | 1 |

**FLOM: Male flowering, FLOF: Silking, HP: Height of plant, NRG: Number of grain rows, NMGR: The average number of kernels per row, P100: Weight of 100 grains**

than yellow corn (40%) and red corn (10%) (Table 2).

The distribution of maize accessions according to color silk tassel and color shows through against 70% are green and 30% are purple (Table 3).

## Descriptive analysis of quantitative traits

Significant differences were observed between the minima and maxima for important agronomic traits such as male flowering (FLOM), silking (FLOF), the height of plant (HP), number of grain rows (NRG) the average number of kernels per row (NMGR), weight of 100 grains (P100G) (Table 4). On average, accessions have a 50-day semi-flowering cycle. The earliest began his male flowering from 47 days after sowing and later to 52 days. Silking varies from 51 days to the earliest and 55 days later. The plant height varies from 131.65 cm for small varieties to 149.35 cm for tall varieties, with an average of 142.05 cm. The average number of kernels per row is 20 for accessions with small ears and 26 accessions large ears, with an average of 23.980. The weight of hundred grains varies from 21.075 g for accessions with small grains to 28,300 g for those coarse.

Table 5 obtained after the analysis of variance, it appears that Massahouéwéwé over primary branch (20.57), Massahoué has the number of the

**Table 7: Change in flowering cycles and maturity**

| Varieties | FLM | | | FLF | | | Mat | | |
|---|---|---|---|---|---|---|---|---|---|
| | X | S .D | CV | X | S.D | CV | X | S.D | CV |
| V1 | 52.00 | 6.48 | 12.46 | 55.00 | 6.480 | 11.78 | 99 .00 | 8 .08 | 8.16 |
| V2 | 51.75 | 5.61 | 10.86 | 55.00 | 5.83 | 10.60 | 90.50 | 4.78 | 3.67 |
| V3 | 47.75 | 4.50 | 9.42 | 50.50 | 4.50 | 8.92 | 91.00 | 2.70 | 2.97 |
| V4 | 48.50 | 4.20 | 8.66 | 51.25 | 4.11 | 8.02 | 90.25 | 3.09 | 3.43 |
| V5 | 49 .25 | 4.27 | 8.67 | 52.25 | 3.50 | 6.69 | 99.00 | 8.36 | 8.45 |
| V6 | 49.00 | 5.47 | 11.17 | 52.25 | 5.12 | 9.80 | 97.25 | 9.67 | 9.94 |
| V7 | 49 .25 | 4.57 | 9.28 | 52.25 | 4.50 | 8.61 | 93.25 | 8.53 | 9.15 |
| V8 | 50.00 | 3 .55 | 7.11 | 53.25 | 3.59 | 6.74 | 95.50 | 7.00 | 7.32 |
| V9 | 49.25 | 4 .57 | 9.28 | 53.00 | 4.54 | 8.57 | 95.00 | 7.78 | 8.19 |
| V10 | 49.50 | 6 .35 | 12.83 | 53.25 | 5.43 | 10.21 | 94.25 | 7.36 | 7.81 |

**V1:Massahouégontinwéwé;V2:Massahouégontivé;V3:Lagos;V4 :Carder ;V5 :Massahouéwéwé ;V6 :Massahoué ;V7 :Massahouéwéwé;V8 :Massahouéwéwé ;V9 :Massahouéwéwé ;V10:Massahouévèvè, FLM : Flowering male, FLF : Floweringfemale, Mat :Maturity**

**Table 8: Change in components of yield varieties Lagos and Carder**

| Varieties | P100G | LE | DE | NMGR | NRG |
|---|---|---|---|---|---|
| Lagos | | 121.35 | 35.587 | 26.40 | 12.20 |
| Carder | | 111.22 | 35.855 | 25.05 | 11.70 |
| X | 25 | 116.285 | 35.721 | 25.72 | 11.95 |
| SD | 0.575 | 5.065 | 0.134 | 0.675 | 0.25 |
| CV | 2.30 | 4.35 | 3.75 | 2 .62 | 2.09 |

**P100G: weight of 100 seeds, LE: length of ear, DE: diameter of ear, NMGR: Average number of seeds, NRG: number of rows of seeds**

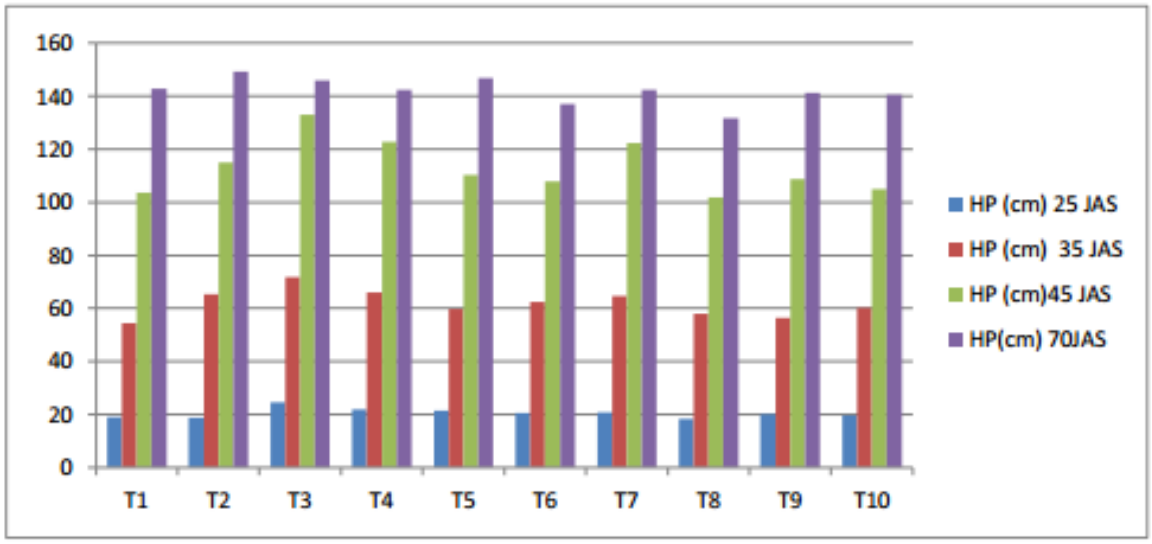


**Figure 1: Evolution the height seedling of the ten varieties**

lowest primary branch (13.5).Massahouégontinwéwé and Massahouégontivé (2,250) have more ears while Massahouévèvè (1.250) fewer ears .Regarding the insertion height of the ears Massahouégontivé has the greatest height (87.50 cm) and the lowest Massahouéwéwé height of insertion of the ears (62 cm), with a significant difference at alpha 5% threshold.

## Structuring of morphological diversity

Significant correlation (≥ 0.50) was observed between several pairs of variables (Table 6). Positive relationship between the circumference of the collar, branching away from the tassel, height insertion ears, the maturity and the number of row of grain with height plant which implies that an increase in plant height causes an increase of all these variables. So the tall cultivars

are late, have a good ear insertion height and a good circumference collar.

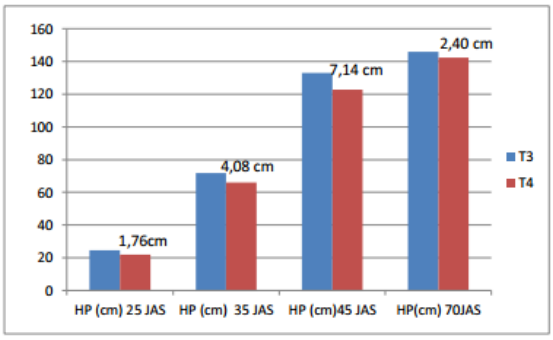


**Figure 2: Evolution height of the varieties Lagos and Carder**

## Analyze differences between flowerings

From Descriptive analysis (Table 7), the coefficient of variation is low (<15%) for most of the measured variables which confirms the precision of the test. Furthermore, significant differences were recorded between the averages for some varieties. The differences in the days of the appearance of flowering male and female flowering is 2.75 days for varieties Lagos Carder with respective maturities of 91 and 90 days. The coefficients of variation are less than 10% for the three traits studied.

## Analysis of yield components varieties Lagos and Carder

Table 8 presented the coefficients of variation of some performance parameters for varieties Lagos and Carder. It appears from this table that the average values of all the parameters vary very little from one variety to the other with the exception of the length ofthe ear, where there is a significant difference of 10.13 mm. The coefficient of variation is low (<5%) for all variables.

## Variations height of the various varieties during the test

The differences between the heights of the varieties Lagos and Carder ranged from 1.77 to 9.36 cm respectively from 25 to 70 JAS (Figure 1).

## Variations height of the varieties Lagos and Carder

Figure 2 presents the evolution height of the seedlings according to time. It arises that the difference between the Lagos varieties and to card is increasing 1,76; 4,08; 7,14 respectively to 25;35;45 JAS. In addition the difference in height observed with 70 JAS which are 2,40 cm, show a reduction of the differences between height seedling after flowering.

## DISCUSSION

In the agro - morphologicalplan, local accessions of corn grown in the department of Ouémé in Benin revealed significant differences between the characters analyzed, indicating a strong phenotypic heterogeneity betweenten accessions. This morphological diversity was structured into six groups that differ in plant height, the semi-flowering cycle, the number of stored grain, the average number of kernels per row and weight of 100 grains. These characteristics distinguished early and intermediate maize groups, average sized, large and late maize groups, and morphologically large maize groups.Similar results were obtained by Attiey (7) in Ivory Coast, and to suggest that morphological differentiation is often based on agronomic traits (8). The large differences between the minimum and maximum values for all analyzed morphological characters, shows significant inter-variability accessions. This strong result morphological diversity of peasant seed management practices (9;10;11;12). The country phonotypical selection based on the characters perceptible (phenologic, vegetative, ear) could explain the contribution of these variables to the structuring of variability.

A weak variation enters the averages of the varieties Carder and Lagos with a coefficient of variation lower than 10%.The transition from the male inflorescence to the female inflorescence occupies an interval of time from 2 to 4 days. These results are in conformity with those of Fleury (13), which supports that the necessary interval between male flowering and female flowering is lower than 5 days. The variations of days of appearance between male flowering and female flowering is 2,75 days for the varieties Lagos and Carder. More the shift between flowerings male and female is significant, less the material considered flowers in a synchronous way. This interval is influenced by the hydrous stress. The difference between flowerings male and female is very significant in improvement varietal because it directly influences the fecundation of the female flowers and thus the formation of grains. Moreover the dryness is responsible for an increase in the difference between male and female flowering. Our results are similar to those of Sanou (8) which undertook a study on the performance of the S2 lines of FBC6 compared to the hydrous stress. It observed a shift between flowerings male and female. On the other hand our results are contrary with those of Zoma (14) which

undertook a study on the S1 lines of HOPE and showed that there is not significant difference between the lines compared to the shift between male and female flowering.

During the present study the varieties Lagos and Carder were identified by the variations reduced between the dates of male and female flowering, and their maturity rather short early (90 days).Indeed the test knew 32 days without rain, covering the significant stages of flowering.In spite of this condition of hydrous stress, the variations of days between the appearances of flowers male and female remained lower than 4,5 days for all the studied varieties, and 2,75 days for the varieties Lagos and Carder. This testifies to the aptitude of the varieties to tolerate the dryness in period of irregularity of the rains. Moreover according to our investigations the Carder variety would be initially variety EVDT, introduced into the zone approximately 15 years ago.

## CONCLUSION

The preliminary results on the diversity and the morphological characterization of corn cultivated in Ouémé clearly show that the different one are varieties tested present a variation for the whole of the characters used, in particular those related to the cycle of semi flowering, with the height of the plant, the number of lines of grain, the average number of grains per line and with the weight of 100 grains. This genetic variability observed between accessions constitutes an asset for work of selection. The differences observed between the varieties indicate that the varieties Lagos (P100G 24,42;NMGR 26,40;NRG 12,20;FLM 47,75 FLF 50,50) and Carder (P100G 25,57; NMGR 25,05; NRG 11,70; FLM 48,50 FLF 51,25), introduce no nearly but intermediate individuals.They are essential morphologiquement, with ears inserted into low height (HIE Lagos 78,05cm; to card 71,05cm).The Lagos varieties and to carder have the best characteristics of ear and grains and can be used as source of parents to improve the output.These two varieties are equipped with the best vegetative characteristics and could be proposed to the producers in these times of climatic changes.

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