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S Samudin[1], Jeki Jeki[1], Maemunah Maemunah[1], R Amelia[1] and P Paiman[2]

[1]Department of Agrotechnology, Faculty of Agriculture, Tadulako University, Tondo-Palu 94118, Central Sulawesi, Indonesia
[2]Department of Agrotechnology, Faculty of Agriculture, Universitas PGRI Yogyakarta, Yogyakarta 55182, Indonesia

Email: sakkasamudin@untad.ac.id

Abstract. Future demand for maize will not be easily met due to climate change and its development using marginal soils that are stressed by salinity. This study aims to identify the genetic parameters of corn plants under high salinity stress. The research was arranged in a randomized completely block design (RCBD) consisting of six local maize cultivars, namely Gento, Lanca, Pulut, Lokal, Lei, and Sigi Merah. Each treatment was repeated four times. The results showed that two traits had a high coefficient of genotypic diversity, four traits had a high coefficient of phenotypic diversity and six traits had high heritability and genetic progress. Plant height, the greenness of the leaves, age of male flower release, age of blooming female flowers, the position of the ear, harvest age, length of cob without stalks, and diameter of the cob were positively and significantly correlated with yield. Plant height and cob height can be used as criteria for increasing maize yields through indirect selection. In future studies suggest that various local maize cultivars can be applied to situations of high salinity stress.

1. Introduction

Corn is the second most important commodity after rice and is a source of the national economy [1]. The production of this commodity in 2020 will reach 19,612,435 tons [2], with a productivity of 5.87 tons ha^{-1} [3]. Corn yields in 2020 have met the needs in Indonesia. However, this result is difficult to maintain in the years to come due to changes in the global climate [4]. Not only that, many productive lands on the island of Java have shifted roles so that area expansion must be tried outside Java. The area outside Java is quite large but is in marginal land.

According to Utama and Haryoko [5], the marginal land that can be used as agricultural land is 33 million hectares. However, the use of these marginal lands is still under-tested due to salinity stress. Salinity is one of the abiotic factors that affect growth and production. According to Roy et al. [6] and Saade et al. [7], salinity stress, especially high Na^+ elements, will cause the growth rate to decrease, the number of tillers is reduced, the harvest index is low, and the development of flowering and reproduction will slow down [8-9]. Water uptake by plant roots is inhibited, the germination rate is reduced, the photosynthesis process is disrupted, the rate of leaf cell elongation decreases, plant biomass decreases, stomatal conductance decreases, causing disturbances to plant growth and production [10]. Thus, information is needed on several directly or indirectly related to salinity stress. Further information is needed about the relative importance of a trait in plants and understanding the behavior of its genetic trait [11,12].

One of the efforts that can be made to develop corn plants in saline land is to identify local cultivars that have wide genetic diversity [13] so that selection can be made to find plants tolerant to saline stress conditions. Selection is the main activity of a plant breeding program. The first step that needs to be done before the selection is made is to find out information about the genetic parameters, such as the coefficient of genetic diversity, heritability, and correlation between traits.

Genetic diversity is the difference in traits between individuals in a population caused by the influence of plant genetics, so that selection is very easy to do to select and separate superior plants from plants that are not superior. The study results by Hefny [14] showed that the weight of the cobs per plant, the number of rows per ear, and the yield of shells had a high CGD. In addition, the diameter and the weight of the cob had a medium CGD. On the other hand, the age at which the male flowers were released was 50%, the age at which the female flowers were produced was 50%, the length of the ear and the number of seeds per ear had a low CGD. The research results by Muliadi et al. [15] obtained that the weight of 100 seeds had a moderate coefficient of genetic diversity, while the length of the cob and the number of seeds per row were classified as low CGD. Khan and Mahmud [16] found that the yield per plant and the number of seeds per cob had a moderate coefficient of genetic diversity.

Heritability is a parameter to determine the inheritance of a plant's nature and determine the appropriate selection method used. The results of research conducted by Sinay and Tanrobak [17] showed that plant height, number of leaves, leaf length, leaf width, cob weight at harvest, cob height, number of rows per ear, and number of seeds per ear had high heritability values. Magar et al. [18] found the number of seeds per row had low heritability, while plant height, number of leaves above and below the ear, leaf length and width at flowering, ear height, panicle length, ear length, ear weight, and the diameter of the cob has a medium heritability value. The number of rows per cob, the weight of 1000 seeds, and maize yield had high heritability.

Correlation between traits is a close relationship between plant traits and becomes a benchmark to shorten and facilitate selection to get high production. The research results by Nzuve et al. [19] showed that plant height and cob height positively correlated with maize yields. Chavan et al. [20] showed that 50% of male flowering age had a significant negative genotypic correlation with maize yield. Plant height, ear height, length of ear, the diameter of the ear, number of seeds per row, and weight of cob without cob had a high and significant genotypic correlation with yield. Begum et al. [21] found that the height of the ear, the diameter of the ear, and the number of seeds per row had a positive and significant correlation with the yield.

Many previous research results have informed about the genetic behavior of maize cultivated under normal conditions, while the genetic behavior of maize under salinity stress conditions is still very limited [22,23]. Several previous studies have only evaluated the growth of plant seeds and have not observed the growth and yield of maize under stressed conditions. On the other hand, the sensitivity of maize to salinity stress depends on the growth phase of the plant [24–26]. The current study observed genetic behavior on plant growth and yield under conditions of severe salinity stress. The results of this study are very helpful in conducting an efficient selection to obtain superior plants that are tolerant to salinity stress. With the discovery of this superior variety, the maize planted area can be expanded to locations with marginal conditions (saline stress). This study aims to identify genetic behavior, including coefficient of genetic diversity, heritability, and the relationship between characters of several local maize cultivars under conditions of severe salinity stress.

2. Materials and methods

2.1. Study area

This research was conducted at the Green House of the Faculty of Agriculture, Tadulako University, Palu. The research was conducted from March to May 2019. The research location is at an altitude of 119 meters above sea level, 0°50'23,556 South latitude – 119°53'54 East longitude. The average temperature during the study is 32.2°C with a humidity of 15%.

2.2. Experiment design
This study used a randomized completely block design (RCBD) consisting of six treatments, namely maize cultivars Gento, Lanca, local Pulut, local sigi, Lei, and Red Sigi, repeated three times, and each cultivar consisted of 5 plants so that 90 treatment units were obtained.

2.3. Research procedures
This study used alluvial soil obtained from the 0-20 cm soil surface (topsoil). The soil was sun-dried 3 × 24 hours and mashed; after that, it was put into polybags with a size of 60 × 40 centimeters, weighing 15 kilograms as many as 90 polybags. The Deltamethrin fungicide of 3 g L^{-1} was used for 15 minutes to prevent mold on the seeds and then cleaned. Seeds were selected by soaking 1 × 24 hours, and then two seeds were planted per polybag. Urea fertilizer dose of 330 kg ha^{-1} (equivalent to 4.95 g $polybag^{-1}$) was applied stages, namely, 1.5 g was applied at the age of 10 days after planting, the second fertilizer, 20 after the first day of application, was 1.95 g, and 15 days later given 1,5 g $polybag^{-1}$. TSP and KCl with doses of 200 kg ha^{-1} (equivalent to 3 g $polybag^{-1}$) and 100 kg ha^{-1} (equivalent to 1.5 g $polybag^{-1}$, respectively) were applied at planting. Natural NaCl solution was applied at 5,000 ppm (EC 10 ds m^{-1}) [27] at 31 DAP. They were given NaCl solution with a volume of 2,000 ml $polybag^{-1}$, once every five days for each polybag until it entered the generative phase. Corn plants are harvested if they have shown the harvest criteria [28] (Figure 1). The tools used in this study were analytical scales, caliper, hose, shovel, meter, heater, hose, bucket, 1,000 ml measuring cup, machete, oven, camera, and stationery. The materials used were soil, labels, polybags, natural salt (NaCl), organic fertilizer, urea N source, SP-36 source P, KCl source K, water, plastic bags, duct tape, and local corn.

2.4. Parameters
Observation parameters included: plant height (cm), stem diameter (cm), leaf greenness (%), male flowering age (days), female flowering age (days), ear height (cm), harvest age (days), weight cob (g), the weight of cob without bract (g), length of cob with bract (cm), length of cob without bract (cm), the diameter of cob (cm), number of seeds per cob (seeds), the weight of cob seeds (g), yield seeds (g).

2.5. Statistical analysis
The genotypic and phenotypic diversity coefficients were calculated using the formulation [29]. Heritability was estimated based on the formula [30]. Genetic progress is based on similarities [31]. Phenotypic and genotypic correlation coefficients between two traits were calculated according to the formula [32]. Cross coefficient analysis was used based on the formulation to determine the direct and indirect effect of a trait on maize yields [33].

3. Results
In this study, alluvial soil was used. The characteristics of the soil before and after research are presented in Table 1.

Table 1. Characteristics of the soil used in the study.

Characteristic	Before		After	
	Class	Specification	Class	Specification
C-organic	2.42%	Currently	2.48%	Currently
N total	0.22%	Currently	0.24%	Currently
K	0.45 (me 100 g^{-1})	Currently	0.61 (me 100 g^{-1})	Currently
P_20_5 (olsen)	16.32 ppm	High	14.15 ppm	High
pH	7.2	Netral	8.3	Alkalis

Table 1 shows that the levels of C-organic, total N, K, P_20_5, and soil pH tended to increase after the application of natural NaCl.

3.1. *Coefficient of genotypic and phenotypic diversity*

The analysis of diversity showed that the genotype/cultivar had a significant effect on the observed variables (Table 2).

Table 2. The coefficients of genotypic and phenotypic diversity of several local maize cultivars.

Observed trait	Coefficients of genotypic diversity (CGD)	Coefficients of phenotypic diversity (CPD)
Plant height	3.29	4.08
Stem diameter	7.72	8.28
Leaf greenness	10.86	12.60
Female flower age	11.21	12.22
Male flower age	5.28	6.72
Ear height	14.39	15.27
Harvest age	1.77	2.83
Length of cob without bract	10.03	12.39
The diameter of the ear	5.26	6.70
Weight cob	19.60	21.12
Number of seeds per cob	2.28	2.51
The weight of cob without bract	23.87	27.02
Number of seeds per cob	16.53	21.64
Yield seed	22.45	25.11

Table 2 shows that the CGD value ranges from 1.77 to 22.45 while the CPD ranges from 2.83 to 25.11. The plant height, stem diameter, age of female flower out, harvest age, the diameter of the ear, and the number of rows per ear are considered low CGD values. Greenish leaves, panicles appear the height of the ear is located, the length of the cob is without husks, and the weight of seeds per cob is moderate. The weight of the shelled cobs, the weight of the cobs without the husks, and the yield are traits that have a high CGD value.

3.2. *Heritability and genetic advancement*

Heritability is a comparison between genotypic variety and environmental variety in the form of a benchmark to determine the effect of genes in expressing a trait. In addition, it can be used to find out when the selection is made, whether the initial generation or later generations. Heritability values and genetic advances of several local maize cultivars can be seen in Table 3.

Table 3. Heritability values and genetic advance of several local maize cultivars.

Observed trait	Heritability (%)	Genetic advance %
Plant height	65.00	5.46
Stem diameter	87.00	14.83
Leaf greenness	74.00	19.28
Female flower age	84.00	21.19
Male flower age	62.00	8.55
Ear height	89.00	27.95
Harvest age	39.00	2.29
Length of cob without bract	65.00	16.72
The diameter of the ear	62.00	8.50
Weight cob	86.00	37.45
Number of seeds per cob	82.00	4.26
The weight of cob without bract	78.00	43.44
Number of seeds per cob	58.00	26.02
Yield seed	80.00	41.33

Table 3 shows that the heritability values ranged from 39 to 87%, while the genetic progress was 2.29 to 43.44. Harvest age is a trait that has a heritability value below 50%, while other traits are above 50%. Plant height, age of male flower release, age of harvest, the ear diameter, and the number of seeds per ear had a genetic progress value below 10%. Stem diameter, leaf greenness, and length of cob without cob had a genetic progress value below 20, while the age of female flower out, the height of cob location, weight of cob, number of seeds per cob, yield and weight of cob without cob were above 20%.

3.3. Correlation between traits

Correlation analysis between traits serves to determine the close relationship between yield components and yields so that it can make it easier for breeders to select plants with high yields through yield components (Table 4 and 5). The results showed that the genotypic and phenotypic correlation coefficients were negative and positive. A positive correlation coefficient means that an increase will follow an increase in one character in another character. On the other hand, if the correlation coefficient is negative, an increase in one character will be followed by a decrease in another character.

Table 4 shows that some character pairs have negative genotypic and phenotypic correlation coefficients. The negative genotypic and phenotypic correlation coefficient values, among others, were found in pairs of greenish leaf characters, the number of seeds per cob, and seed weight per cob with corn yields. The positive genotypic and phenotypic correlation coefficients were found in pairs of plant height, stem diameter, age of male flower release, ear height, harvest age, ear diameter, the weight of cob with cob, and weight of cob without cob with yield. Plant height was genotypic and phenotypic positively and significantly correlated with stem diameter, age of male flower exit, age of female flower exit, the height of ear location, age of harvest, and diameter of the ear. Similarly, the diameter of the stem was genotypically and phenotypically correlated with plant height, age of male inflorescence, age of expulsion of female flowers, ear height, and ear diameter. Some traits that had positive and significant genotypic correlations on yields were plant height, age of male flower exit, age of female flower exit, the height of cob location, age of harvest, length of cob without bulbs, and diameter of the ear.

Table 4. Genotypic and phenotypic correlations of several local maize cultivars.

Observed trait	PH	SD	LG	FFA	MFA	EH	HA	LCWB	DE	WCWB	NRPE	WCWH	WCS	YS
PH	1.000	0.810*	-0.091	0.775*	0.804*	0.945*	0.601*	0.176	0.812*	-0.024	-0.458	-0.246	-0.563	0.624*
SD	0.618*	1.000	0.241	0.747*	0.747*	0.740*	0.416	0.401	0.754*	0.251	-0.866*	0.123	-0.176	0.396
LG	-0.052	0.208	1.000	-0.458	-0.454*	-0.452	-0.587	-0.027	-0.458	-0.066	0.190	-0.027	0.441	-0.839*
FFA	0.492	0.637*	-0.470	1.000	0.997*	0.993*	0.902*	0.042	0.994*	0.755*	-0.861*	-0.125	-0.635*	0.859*
MFA	0.368	0.541	-0.481	0.992*	1.000	0.990*	0.910*	-0.100	0.984*	-0.117	-0.882*	-0.236	-0.733*	0.893*
EH	0.697*	0.579	-0.437	0.781*	0.649*	1.000	0.925*	0.187	0.990*	0.012	-0.673*	-0.152	-0.706*	0.873*
HA	0.120	0.305	-0.495	0.827*	0.908*	0.435	1.000	-0.637*	0.921*	-0.566	-0.663*	-0.693*	0.990*	0.732*
LCWB	0.225	0.177	-0.137	0.163	0.132	0.121	-0.068	1.000	-0.074	0.990*	-0.540	0.941*	0.728*	0.628*
DE	0.372	0.545	-0.484	0.991*	0.990*	0.665*	0.889*	0.149	1.000	-0.093	-0.892*	-0.214	-0.719*	0.909*
WCWB	-0.117	0.234	-0.080	0.299	0.041	0.004	-0.132	0.811*	0.058	1.000	-0.575	0.990*	0.788*	0.422
NRPE	-0.365	-0.699*	0.146	-0.652*	-0.530	-0.598	-0.277	-0.289	-0.535	-0.318	1.000	-0.487	-0.059	-0.669*
WCWH	-0.175	0.127	-0.071	-0.033	-0.063	-0.125	-0.112	0.808*	-0.049	0.947*	-0.268	1.000	0.834*	0.287
WCS	-0.444	-0.058	0.269	-0.457	-0.458	-0.445	-0.343	0.474	-0.449	0.707*	0.093	0.846*	1.000	-0.387
YS	0.488	0.447	-0.510	0.554	0.384	0.733*	0.209	0.245	0.393	0.343	-0.508	0.254	-0.088	1.000

Description: *= Significance correlation; SD=stem diameter, PH=plant height, LG=leaf greenness, MFA=male flowering age, FFA=female flowering age, EH=ear height, HA=harvest age, WC=weight cob, WCWB=the weight of cob without bract, LCWC=length of cob with bract, LCWIC=length of cob without bract, DC=the diameter of cob, NSPC=number of seeds per cob, WSC=the weight of cob seeds, YS=yield seeds (g).

Table 5. The direct and indirect effects of several traits on the yield of local maize cultivars.

Observed trait	PH	SD	LG	FFA	MFA	EH	HA	LCWB	DE	WCWB	NRPE	WCWH	WCS	YS
PH	0.363	0.283	0.074	-0.037	-0.350	0.744	0.016	-0.097	-0.122	0.002	-0.024	-0.226	0.000	0.624
SD	0.294	0.350	-0.196	-0.036	-0.325	0.583	0.011	-0.222	-0.113	-0.016	-0.046	0.113	0.000	0.396
LG	-0.033	0.084	-0.811	0.022	0.198	-0.356	-0.015	0.015	0.069	0.004	0.010	-0.025	0.000	-0.839
FFA	0.281	0.261	0.371	-0.048	-0.434	0.785	0.024	-0.023	-0.150	-0.048	-0.046	-0.114	0.000	0.858
MFA	0.292	0.261	0.368	-0.048	-0.435	0.779	0.024	0.056	-0.148	0.007	-0.047	-0.216	0.001	0.893
EH	0.343	0.259	0.367	-0.048	-0.431	0.787	0.024	-0.103	-0.149	-0.001	-0.036	-0.140	0.001	0.873
HA	0.218	0.145	0.477	-0.043	-0.396	0.728	0.026	0.352	-0.138	0.036	-0.035	-0.636	-0.001	0.732
LCWB	0.064	0.140	0.022	-0.002	0.044	0.147	-0.017	-0.552	0.011	-0.063	-0.029	0.863	-0.001	0.628
DE	0.295	0.264	0.372	-0.048	-0.429	0.779	0.024	0.041	-0.150	0.006	-0.048	-0.197	0.001	0.909
WCWB	-0.009	0.088	0.053	-0.036	0.051	0.009	-0.015	-0.547	0.014	-0.064	-0.031	0.908	-0.001	0.422
NRPE	-0.166	-0.303	-0.154	0.041	0.384	-0.529	-0.017	0.298	0.134	0.037	0.053	-0.447	0.000	-0.669
WCWH	-0.089	0.043	0.022	0.006	0.103	-0.120	-0.018	-0.520	0.032	-0.063	-0.026	0.917	-0.001	0.287
WCS	-0.204	-0.061	-0.358	0.030	0.319	-0.556	0.026	-0.402	0.108	-0.050	-0.003	0.765	-0.001	-0.387

Description: *= Significance correlation; SD=stem diameter, PH=plant height, LG=leaf greenness, MFA=male flowering age, FFA=female flowering age, EH=ear height, HA=harvest age, WC=weight cob, WCWC=the weight of cob without cob, LCWC=length of cob with cob, LCWIC=length of cob without cob, DC=the diameter of cob, NSPC=number of seeds per cob, WSC=the weight of cob seeds, YS=yield seeds (g).

Based on Table 5, it can be seen that the direct effect is positive or negative. Plant height, stem diameter, ear height, harvest age, number of seeds per ear, and weight of cob without cob are traits that directly affect yield. On the other hand, the direct adverse effects were greenish leaves, age at which male flowers came out, age at which female flowers came out, length of cob with cob, the diameter of cob, weight of cob with cob, and weight of seeds per cob. Based on the results of this study, it was seen that the weight of the cob without the cob had the highest and most positive direct effect, followed by the height of the ear, plant height, stem diameter, number of seeds per ear, and harvest age.

4. Discussion

4.1. Coefficient genotypic and phenotypic diversity

The results of the study by Jilo *et al*. [34] found that the weight of 100 seeds, the height of the cob, the age of flower exit, the interval of female flower exit, the diameter of the ear, the number of seeds per row, the length of the ear, plant height and leaf area had a medium CGD. The properties of leaf length, leaf width, number of rows per cob, 50% female flower age, 50% bloom age, and harvest age have a low CGD. The results of previous research by Niji et al. [35], and Arunkumar et al. [36] showed that several traits that had a low estimate of the CPD under high salinity stress included plant height, stem diameter, female flower blooming age, harvest age, the diameter of the cob, and the number of rows per cob, which means that these traits have uniformity or similarity in some of the local corn cultivars used. If it is associated with selection, then the selection will be less effective if carried out on the character due to the difficulty of choosing the best trait due to the similarity of the properties possessed.

Traits with a high CGD predictive value under high salinity stress, such as the weight of cobs with and without cob and corn yields, means that these three traits have diversity or differ from one individual to another. If it is associated with selection, then the selection will be more effective if carried out based on these characteristics because we can choose the desired character from the diversity of characters generated by these local corn cultivars.

4.2. Heritability and genetic advance

According to Syukur et al. [37], heritability is divided into three groups: low (<20%), moderate (>20% 50%), and high (>50%). With this assumption, all observed traits (14 traits) had high heritability values except for the medium harvest age. The results of Matin et al. [38] found several traits that had high heritability values , including the age of male flower exit, age of female flower exit, plant height, ear height, harvest age, length of ear, the diameter of the ear, weight of 1,000 seeds, and yields. Furthermore**,** Sinay and Tanrobak [17] also found several traits with high heritability values such as plant height, number of leaves, leaf length, leaf width, cob weight at harvest. Similarly, the results of the study Ayodeji and Adelegan [39] obtained that the number of seeds per row, the number of marketable cobs, length of the ear, the diameter of the ear, height of the ear, plant height, and the age at which the female flowers emerge have a high heritability value, while the age at which the flowers emerge. The male is low.

Moderate to high heritability values mean that the genes that play a role in the appearance of these traits are additive. If an additive gene plays a trait, this indicates that the trait is more easily inherited from parents to offspring [40]. Likewise, such traits can be selected for early generations. Conversely, traits that have low heritability, then the role of the dominant gene dominates the appearance, so that selection should be carried out in the next generation. In this (continued) generation, it is hoped that mating will occur between these individuals so that it can increase additive genes.

Traits with high heritability estimates indicate that these traits are influenced by the action of additive genes so that selection can be carried out effectively and carried out in early generations. In addition, such traits will be passed down more quickly from parents to their offspring [38,41]. According to Arunkumar *et al.* [36], heritability itself is not sufficient in selecting a trait, so it needs to be supported by other variables, namely, the genetic progress of hope. Genetic progress is divided into three groups, namely, low (<10%), moderate (10-20%), and high (>20%) [42].

4.3. Correlation between traits

The results of a previous study by Bekele and Rao [43] found a significant negative genotypic correlation between yield with 50% female flower maturity, 50% male flower maturity, and 50% flowering age. The research results conducted by Patil et al. [44] also found that the age at which female and male flowers emerge, flowering age, cob height have a positive but not significant genotypic correlation with maize yield. On the other hand, plant height, number of cobs, number of seeds per row, and 100 seeds were significantly and positively correlated with yield. The study results by Matin et al. [38] found a high genotypic correlation between the characteristics of the diameter of the cob and the height of the location of the cob on maize yield. The results of the study by Reddy and Jabeen [45] found that the results of the genotypic correlation were positive and significant with the properties of the weight of 100 seeds, diameter of the ear, number of seeds per row, plant height, length of the ear and height of the ear.

Simple correlation analysis only pays attention to two traits (pairs of traits) that are correlated without regard to other traits, even though other traits work together to express a trait. This will provide inaccurate information so that if the selection is made based on a simple correlation, it will sometimes be misleading [46]. Selection based on cross-cross or correlation analysis by paying attention to direct and indirect effects can answer the problem above. Cross-print analysis has the advantage of providing precise information because it takes into account the direct and indirect effects between the properties of the result components and the results [45].

The results of previous studies by Patil et al. [44] also found that plant height, ear length, and flowering age had a high direct effect on yield. The study results by Reddy and Jabeen [45] and Sudika et al. [47] showed traits that had a high direct relationship to yield, namely, number of seeds per row, the weight of 100 seeds, and diameter of cob. Pavan et al. [48] obtained the age of female flower yield of 50 percent silking, plant height, number of seeds per row, and the weight of 100 grains directly affected maize yield. Reddy et al. [49] concluded that the 50 percent male sex-flowering age had the most significant direct influence on grain yield per plant followed by the weight of 100 seeds, length of the ear, age of harvest, the height of the ear, number of seeds per row, number of rows per ear, and plant height.

The high direct effect on yields means that this trait contributes the most to increasing maize yields. Therefore, the weight of the cob without husks was the trait that contributed the highest to maize yield. However, in selecting traits that become selection indicators by utilizing direct effects, not all traits have a high direct effect on the selected results, but it is necessary to consider that a trait selected has a high direct effect followed by a high correlation to the results and is different. Thus, cob height and plant height are characteristics that can be used to increase corn yields under high salinity stress conditions.

5. Conclusion

The results showed high diversity in the population used, separating the superior cultivars from the unfavorable ones. Traits with high heritability values do not always have significant genetic advance. Characters with high heritability values supported by large genetic progress values indicate that additive gene work plays a role in the appearance of traits. Plant height, stem diameter, age of male flower extrusion, cob location height, harvest age, ear diameter, the weight of cob with bract, and weight of cob without bract had a significant positive genotypic and phenotypic correlation with yield. Cob height and plant height had a direct effect on yield and a high correlation value. The characters of cob height and plant height can be recommended in indirect selection to increase corn yields in conditions of high salinity stressed land.

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