Biological Forum – An International Journal **15(1): 732-736(2023)**

ISSN No. (Print): 0975-1130
ISSN No. (Online): 2249-3239

Correlation Analysis of some Morpho-Physiological Parameters, Yield and Quality attributes of Chilli (*Capsicum annuum* L.)

A. Ghosh, D. Panda* and S. Mondal
Department of Crop Physiology, Institute of Agriculture,
Visva-Bharati University, Sriniketan (West Bengal), India.

(Corresponding author: D. Panda)*
(Received: 14 December 2022; Revised: 30 December 2022; Accepted: 07 January, 2023; Published: 11 January, 2023)
(Published by Research Trend)

ABSTRACT: A field experiment was conducted during the *Rabi* season of 2015-16 and 2016-17 to study the effect of micronutrients and growth regulators on growth, physiology, yield, and quality attributes of chilli. Five levels each of different micronutrients (Control, 0.1% $ZnSO_4$, 0.2% $ZnSO_4$, 0.1% H_3BO_4 and 0.2% H_3BO_4) and growth regulators (Control, 0.5 ppm 28-Homobrassinolide, 1 ppm 28-Homobrasinolide, 10 ppm Putrescine, 20 ppm Putrescine) were used for foliar application to chilli plants. Simple correlation coefficient of different growth and physiological parameters, yield and quality attributes indicated that most of the morpho-physiological parameters of chilli *viz.*, plant height, number of branches per plant, dry matter accumulation, LAI, CGR, RWC, chlorophyll a, chlorophyll b and total chlorophyll fruit length, fruit diameter, number of fruits per plant, number of seeds per fruit had significant positive content of leaves had significant correlation with fruit yield indicating their importance in yield determination. The result further revealed the quality parameters such as ascorbic acid content of fruit (mg/100g), capsaicin content (%), oleoresin content (%) of fruits were positively correlated with yield and yield attributes. Overall, it is logical to conclude that number of fruits per plant, CGR, total chlorophyll content, dry matter accumulation are the major contributors towards fruit yield since these characters had high correlation. The selection of these characters should be major concern for increased yield of chilli.

Keywords: Chilli, Correlation, growth, physiological parameters, quality parameters, yield.

INTRODUCTION

Chilli (*Capsicum annuum* L.) is one of the lucrative vegetable, spice, and cash crop. India is one of the largest producer, consumer, and exporter of Chilli in the world and accounts for around 41.95% of total production of the world (Anonymous, 2019). The largest chilli-producing states in the nation are Andhra Pradesh, Karnataka, Madhya Pradesh, and Telangana (Ghosh *et al*., 2020). As a spice, condiment, food additive, vegetable, and decorative plant, chilli is used in a variety of dishes. The pigments capsanthin, capsorubin, and capxanthin give chillies their red colour, and capsaicin gives them their pungency (Mathew, 2002). Chilies, are largely considered a balanced source of most essential nutrients and are the excellent source of vitamins A, B, C, D and E as well as oleoresins, carotenoids, and phenolic compounds with well-known antioxidant properties beneficial to human health. Chilli peppers also contain minerals such as calcium, phosphorus, ferrous, and copper in trace levels (Prathibha *et al*., 2013, Olatunji and Afolayan 2018). The soils of West Bengal are deficient of micronutrients like Zinc and Boron (Mondal *et al*., 2015; Ghosh *et al*., 2020). According to Shil *et al*. (2013); Rafique *et al*. (2012), zinc and boron are essential for the growth and production of a variety of vegetable crops, including chilli. Zinc acts as metallic activator of several plant cellular enzymes and is vital for the biosynthesis of tryptophan, which is the precursor of Indole-3-acetic acid (Panda and Mondal 2020; Mapodzeke *et al.*, 2021). Boron is instrumental in structural and functional integrity of the cell wall and membranes, carbohydrate metabolism, transport of sugars and other nutrients, cell division and elongation, promoting healthy growth and reproduction. Boron also plays a key role in pollen germination and seed development (Shireen *et al*., 2018). Both zinc and boron, in their appropriate concentrations, are critical for ensuring optimal growth, yield, and overall resilience of plants in diverse environmental conditions (Ghosh *et al*., 2020). Plant growth regulators (PGRs) are involved in plant growth and development under normal and stressful environmental conditions (Sabagh *et al*., 2021). Brassinosteroids and polyamines are well known plant growth regulators play important role in function in crop growth, development, and yield (Ghosh *et al*., 2020). According to Gudesblat and Russinova (2011) and Wei and Li (2016), brassinosteroids are known to play important role in plant reproduction, vascular differentiation, root development, photomorphogenesis, cell elongation, and seed germination. Polyamines such spermine, spermidine, and putrescine are crucial for cell division, growth, and proliferation in plants (Handa *et* *al*., 2018; Chen *et al*., 2019). There is a paucity of knowledge on the influence of micronutrients and plant growth regulators on the morphological, physiological, and biochemical parameters of chilli. Correlation studies provide a better understanding of the association of different characters with yield (Dixet and Dubey 1984). The study of associations among various traits is useful to breeders in selecting genotypes possessing groups of desired traits (Panda *et al*., 2015). The objective of the study was to find out correlation between different morpho-physiological parameters; yield and quality attributes for increased fruit yield in chilli.

MATERIALS AND METHODS

A field experiment was conducted at Agriculture Farm of Institute of Agriculture, Visva-Bharati, Sriniketan during *rabi* 2015-16 and 2016-17 to study the effect of micronutrients and growth regulators on growth, physiology and yield of chilli under red and lateritic soil. Five levels each of different micronutrients (Control, $ZnSO_4$ @ 0.1% and 0.2% and H_3BO_4 @ 0.1% and 0.2%) and growth regulators (Control, 28-Homobrassinolide @ 0.5 ppm and 1 ppm and Putrescine @10 ppm and 20 ppm) were used as foliar application to chilli plants. The experiments were laid out in RBD design with 25 treatment combinations of five growth regulators and micronutrients each with three replications. The crop was treated with foliar application of micronutrients and growth regulators three times during the growing season, at 30, 45 and 60 days after transplanting (DAT). Lime was added to the $ZnSO_4$ solution to neutralize its acidity. 35-day-old seedlings were transplanted onto plots that were 2 × 2 m^2 in size with a spacing of spaced 50×50 cm^2. Recommended fertilizer dosage of 90-60-50 kg N-P_2O_5-K_2O ha^{-1} was applied to all the treatment plots. The boundaries of each plot were marked by 15 cm-high ridges on both sides. For appropriate irrigation to be provided separately to each plot, irrigation channels were provided for each plot. Intercultural procedures and irrigation were done as needed and at regular intervals. Adequate plant protection measures were used to protect the crop from disease and insect infestation. The experimental soil was found to have a low availability of nitrogen (N) and a medium availability of phosphorus (P_2O_5) and potassium (K_2O). Tejaswini, a high producing hybrid chilli variety with 180 days maturity duration, was used in the experiment. Growth parameters such as plant height, dry matter accumulation per plant, LAI was measured at 40, 80, 120, and 160 DAT, CGR was recorded during measured between 40-80 DAT, 80-120 DAT, and 120-160 DAT, whereas the number of branches per plant and yield attributes were recorded at the time of harvest. Leaf area index was calculated by the formula given by Watson (1952). The crop growth rate (CGR) was calculated using the formula given by Watson (1952) and expressed in g/m^2/day. The physiological such as relative water content (RWC), chlorophyll a, chlorophyll b, total chlorophyll, and carotenoids content of leaves were measured at 60 and 90 DAT in both years. The method of Weatherley *et al*. (1950) was used to measure the relative water content (RWC) of leaf expressed in percentage (%). Dimethyl Sulfoxide (DMSO) was used as the solvent to extract the chlorophyll and carotenoids pigment from the leaves. The chlorophyll content of leaves was measured according to the methods of Hiscox and Israelstam (1979) using the formula of Arnon (1949). The method of Linchtenthaler and Wellburn (1983) was used to determine the carotenoids content in leaves. The chlorophyll and carotenoids content were expressed in mg/g fresh weight. Ascorbic acid content of mature green chilli fruits was estimated by volumetric method of Sadasivam and Balasubraminan (1987). The capsaicin content was determined by the spectrophotometric method as described by Balasubramaniam *et al.* (1982). Oleoresin content was estimated by following gravimetric method (Ranganna 1977). The data were statistically analysed using the analysis of variance (ANOVA) method (Cochran and Cox 1977; Panse and Sukhatme 1978). The Error Mean Square Method of Fisher Snedecor "F" test was used to determine the significance of various sources of variation at a probability level of 0.05 (Ghosh *et al*., 2020). The data were collected and tabulated using MS-EXCEL software and least significant difference (LSD) statistical analysis to determine the best of the treatment means.

RESULTS AND DISCUSSION

Simple correlation coefficient of morph-physiological parameters and mean fruit yield of chilli during *Rabi* seasons of 2015-16 and 2016-17 are shown in Tables 1. The morphophysiological parameters such as LAI, CGR, RWC and chlorophyll and carotenoids content recorded at peak growth stages were taken into consideration for correlation studies. The findings showed a highly significant ($P<0.01$) positive correlation between plant height and the number of branches per plant, dry matter accumulation (g/m^2), LAI (80 DAT), CGR (80-120 DAS), RWC (90 DAT), chlorophyll a, chlorophyll b, total chlorophyll, carotenoids content (90 DAT), and fruit yield per plant (g). The correlation coefficient between plant height and other morpho-physiological parameters, as well as yield, is positive and significant, and it explains the true relationship between the parameters, making direct selection based on this feature useful. Plant breeders should be very concerned about direct selection for these traits because of their significant association and direct influence.

The results also showed a very strong positive correlation between the number of branches per plant and the dry matter accumulation, LAI (80 DAT), CGR (80-120 DAS), RWC (90 DAT), chlorophyll a, chlorophyll b, total chlorophyll, carotenoids concentration (90 DAT), and fruit yield per plant. The positive and significant correlation coefficient between the number of branches per plant, morpho-physiological parameters, and fruit production per plant provides an explanation for the genuine link between the parameters. Plant breeders should emphasize on the direct selection through these attributes of chilli.

The results of the correlation study showed a highly significant positive correlation between LAI (80 DAT), CGR (80-120 DAS), RWC (90 DAT), chlorophyll a, chlorophyll b, total chlorophyll, carotenoids content (90 DAT) and fruit yield per plant. There was a highly significant ($P<0.01$) and positive correlation between CGR (80–120 DAS), RWC (90 DAT), chlorophyll a, chlorophyll b, total chlorophyll, carotenoids content (90 DAT), and fruit yield per plant.

The results also showed a highly significant ($P<0.01$) positive correlation between leaf RWC, chlorophyll a, chlorophyll b, total chlorophyll, carotenoids content of leaves recorded at 90 days after transplanting, and per plant fruit yield. The findings also showed a highly significant positive correlation between the total chlorophyll, chlorophyll a and b, carotenoids content in the leaves recorded at 90 DAT, and fruit yield per plant. The results are in accordance with the findings of Yatung *et al*. (2014) who reported about positive and significant correlation between chlorophyll content and fruit yield per plant of chilli.

The findings showed a highly significant positive correlation between the chlorophyll b, total chlorophyll, carotenoids (90 DAT) in the leaves, and the per plant fruit yield of chilli. The outcome also showed a very strong positive association between total chlorophyll, leaf carotenoids recorded at 90 DAT, and fruit yield per plant. The findings showed a strong ($P <0.01$) positive correlation between the carotenoids content of the leaves recorded at 90 DAT and the yield of chilli fruits per plant. Similar results were found by Singh *et al*. (2006); Bilgi (2006); Saktipada *et al*. (2008); Sokoto *et al*. (2012); Panda *et al*. (2015). The results also corroborate the findings of Ashok Kumar *et al*. (2000); Subhani (2000); Esmail (2003); Subhani (2000).

Table 2 shows a simple correlation relationship between quality parameters of chilli fruits such as ascorbic acid content and capsaicin content, oleoresin content, and yield and yield attributes. The results showed a highly significant ($P<0.01$) positive correlation between ascorbic acid content (mg/100g) of fruits and capsaicin content (%), oleoresin content (%), percent fruit set, fruit length (cm), fruit diameter (cm), number of seeds per fruit, test weight of seed (g), number of fruits per plant, and fruit yield per plant (g).

The true relationship between the parameters is explained by the positive and significant correlation coefficient between ascorbic acid content and other yield and quality attributes, and direct selection using this trait will be successful. Because these characters had a high correlation and a high direct effect, direct selection for these characters should be a top priority for plant breeders. The results also demonstrated the existence of a highly significant positive correlation between the capsaicin content of fruits (%) and the oleoresin content of fruits (%), percent fruit set, length, and diameter of fruits (in cm), the number of seeds per fruit, the test weight of seeds (g), the number of fruits per plant, and the fruit yield per plant (g). The direct selection of these characters should be a top priority for plant breeders due to the positive and significant correlation coefficient between the capsaicin content of fruits (%) and other yield and quality attributes that explains the true relationship between the parameters. Yatung *et al*. (2014) also reported about the strong positive direct effect of capsaicin content with fruit yield per plant of chilli.

The results of the correlation study showed a highly significant positive correlation between the oleoresin content of fruit (%) and the percentage of fruit set, the length and diameter of the fruit (in cm), the number of seeds per fruit, the test weight of the seed (g), the number of fruits per plant, and the fruit yield per plant (g). The correlation coefficient results show a highly significant ($P<0.01$) positive correlation between percent fruit set and fruit length (cm), fruit diameter (cm), seed count per fruit, seed test weight (g), fruit yield per plant (g), and number of fruits per plant. These findings for the correlation between fruit length, number of fruits per plant, and fruit yield per plant are consistent with those of Jogi *et al*. (2013); Maurya *et al*. (2017). The results also corroborate the findings of Amit *et al*. (2014).

Additionally, the results showed a highly significant ($P<0.01$) positive correlation between fruit length (cm), fruit diameter (cm), seed count per fruit, seed weight at test (g), fruits per plant, and yield of fruit per plant (g). The results also revealed a highly significant positive correlation between fruit diameter (cm) and fruit weight per plant (g), number of fruits per plant, test weight of seed (g), and number of seeds per fruit (g).

The results showed a very strong positive correlation between the number of seeds per fruit and the test weight of the seed (g), the number of fruits per plant as well as the fruit yield per plant (g). The outcome also showed a very strong positive correlation between the test weight of the seed (g), number of fruits per plant (g) and fruit yield per plant (g). The study also showed a highly significant ($P< 0.01$) positive association between the yield of chilli per plant and the number of fruits per plant. The results corroborate the findings of Yatung *et al*. (2014), who reported positive correlation between number of fruits per plant, number of seeds per fruit and fruit yield per plant.

CONCLUSIONS

The morpho-physiological parameters, quality attributes and yield attributes of chilli were found to be significantly and positively correlated with fruit yield. Overall, as these traits showed strong correlation, it can be concluded that fruit yield of chilli is mostly influenced by the number of fruits per plant, CGR, total chlorophyll content, and dry matter accumulation. Selection of these traits with higher correlation should be a top priority for achieving higher fruit yield of chilli.

Table 1: Correlation matrix between morpho-physiological parameters and yield of chilli.

Sr. No.	Variables	1	2	3	4	5	6	7	8	9	10	11
1.	Plant height	1	0.957**	0.951**	0.928**	0.895**	0.900**	0.916**	0.892**	0.943**	0.939**	0.861**
2.	Branches/plant		1	0.951**	0.902**	0.903**	0.928**	0.903**	0.895**	0.937**	0.967**	0.839**
3.	Dry matter accumulation			1	0.913**	0.915**	0.921**	0.939**	0.917**	0.969**	0.959**	0.887**
4.	LAI (80 DAT)				1	0.831**	0.869**	0.919**	0.815**	0.908**	0.908**	0.793**
5.	CGR (80-120 DAT)					1	0.839**	0.883**	0.863**	0.911**	0.908**	0.893**
6.	RWC (90 DAT)						1	0.854**	0.940**	0.931**	0.928**	0.762**
7.	Chlorophyll a (90 DAT)							1	0.839**	0.965**	0.938**	0.868**
8.	Chlorophyll b (90 DAT)								1	0.952**	0.904**	0.839**
9.	Total chlorophyll (90DAT)									1	0.962**	0.891**
10.	Carotenoids (90 DAT)										1	0.830**
11.	Fruit yield/plant											1

** correlation is significant at the 0.01 level ; * correlation is significant at the 0.05 level

Table 2: Correlation matrix between quality parameters and yield attributes of chilli.

Sr. No.	Variables	1	2	3	4	5	6	7	8	9	10
1.	Ascorbic acid content of fruit (mg/100g)	1	0.870**	0.820**	0.879**	0.766**	0.791**	0.871**	0.937**	0.878**	0.881**
2.	Capsaicin content (%)		1	0.940**	0.855**	0.862**	0.879**	0.916**	0.849**	0.913**	0.880**
3.	Oleoresin content (%)			1	0.806**	0.853**	0.829**	0.882**	0.843**	0.817**	0.795**
4.	Percent fruit set (%)				1	0.867**	0.871**	0.857**	0.891**	0.894**	0.872**
5.	Fruit length (cm)					1	0.917**	0.851**	0.817**	0.824**	0.810**
6.	Fruit diameter (cm)						1	0.877**	0.816**	0.889**	0.857**
7.	No. of seeds per fruit							1	0.852**	0.907**	0.877**
8.	Test weight (g)								1	0.832**	0.843**
9.	No. of fruits per plant									1	0.978**
10.	Fruit yield per plant (g)										1

** correlation is significant at the 0.01 level * correlation is significant at the 0.05 level

FUTURE SCOPE

The important morphophysiological and biochemical parameters significantly contributing to fruit yield can identified through extensive correlation studies in chilli under different agro-climatic conditions.

Acknowledgement. The research work was conducted in Ph.D. degree programme of A. Ghosh under the guidance of Dr. D. Panda (Supervisor) and Dr. S. Mondal (Co-Supervisor) during 2015-16 and 2016-17 at the Institute of Agriculture, Visva-Bharati, Sriniketan. West Bengal, India.
Conflict of Interest. None.

REFERENCES

Amit, K., Ahad, I., Kumar, V. and Thakur, S. (2014). Genetic variability and correlation studies for growth and yield characters in chilli (*Capsicum annuum* L.). *Journal of Spices and Aromatic Crops*, *23*(2), 170-177.

Anonymous (2019). FAOSTAT, http://www.fao.org/faostat/en.

Arnon, D. L. (1949). A copper enzyme is isolated chloroplast polyphenol oxidase in *Beta vulgaris*. *Plant Physiology*, *24*, 1-15.

Ashok Kumar, R., Verma, S., Samdarshi, B. and Kumar, A. (2000). Correlation studies on yield and yield attributes of wheat (*Triticum aestivum*). *Gujarat Agricultural University Research Journal*, *25*(8), 5-8.

Balasubramaniam, T., Raj, D., Kasthuri, R. and Rengaswami, P. (1982). Capsaicin and plant characters in chillies. *Indian Journal of Horticulture*, *39*(3-4), 239-242.

Bilgi, S. A. (2006). Physiological investigations in Dicoccum Wheat genotypes. M. Sc. Thesis submitted to the University of Agricultural Sciences Dharwad. July, 2006. pp. 1-76.

Chen, D., Shao, Q., Yin, L., Younis, A. and Zheng, B. (2019). Polyamine Function in Plants: Metabolism, Regulation on Development, and Roles in Abiotic Stress Responses. *Frontiers in Plant Science*, *9*, 1945.

Cochron, W. G. and Cox, G. M. (1977). Experimental design. Asia Publishing House, Calcutta, pp. 95-132 and 142−181.

Dixet, P. and Dubey, D. K. (1984). Path analysis in lentil (*Lens culinaris* Med.). *Lens Newsletter*, *11*, 1517.

Esmail, RM. (2003). Correlation and path-coefficient analysis of some quantitative traits with grain yield in bread wheat (*Triticum aestivum* L.). *Bulletin of the National Research Centre*, *26*(3), 395-408.

Ghosh, A., Mondal, S. and Panda, D. (2020). Morpho-physiological responses of chilli (*Capsicum annuum* L.) to foliar application of micronutrients and growth regulators. *International Journal of Bio-resource and Stress Management*, *11*(1), 95-102.

Gudesblat, G. E. and Russinova, E. (2011). Plants grow on brassinosteroids. *Current Opinion in Plant Biology*, *14*, 530–537.

Handa, A.K., Fatima, T. and Mattoo, A. K. (2018). Polyamines: Bio-Molecules with Diverse Functions in Plant and Human Health and Disease. *Frontiers in Chemistry*, *6,* 10.

Hiscox, J. D. and Isrealstam, G. F. (1979). A method for the extraction of chlorophyll from leaf tissue without maceration. *Canadian Journal of Botany*, *57*, 1332-1334.

Jogi, M., Madalageri, M. B., Ganiger, V. M., Bhuvaneswari, G., Patil, H. B. and Kotikal, Y. K. (2013). Character association and path analysis studies in green chilli (*Capsicum annuum* L.). *International Journal of Agricultural Sciences*, *9*(2), 547-550.

Linchtenthaler, H. K. and Wellburn, W. R. (1983). Determination of carotenoids and chlorophylls 'a' and 'b' of leaf extracts in different solvents. *Biochemical Society Transactions*, *11*, 591-592.

Mapodzeke, J. M., Adil, M. F., Sehar, S., Karim, M.F., Saddique, M. A. B. and Ouyang, Y. N. (2021). Myriad of physio-genetic factors determining the fate of plant under zinc nutrient management. *Environmental and Experimental Botany*, *189*, 104559.

Mathew, A. G. (2002). Why chilli is charmingly red. *Indian Spices*, *39*, 12−15.

Maurya, A. K., Kushwaha, M. L., Jain, S. K. and Kumar, S. (2017). Character Association and Path analysis studies for Yield and Yield attributes in Green Chilli (*Capsicum annuum* L.). *Vegetos*, 30 (Special), 369-373.

Mondal, S. S., Patra, B. C. and Banerjee H. (2015). Micronutrient management. In Advances in Potato Cultivation Technology. Kalyani Publishers, New Delhi, pp.115−121.

Olatunji, T. L. and Afolayan, A. J. (2018). The suitability of chili pepper (*Capsicum annuum* L.) for alleviating human micronutrient dietary deficiencies: A review. *Food Science & Nutrition*, *6*(8), 2239-2251.

Panda, D. and Mondal, S. (2020). Effect of boronated sulphur on the growth and yield of Cauliflower. *Ecology, Environment and Conservation*, *26* (February Suppl. Issue), S101−S107.

Panda, D., Sen, A., Dhakre, D. S. and Mondal, S. (2015). Correlation Analysis of Some Growth, Physiological Parameters, Yield and Yield Attributes of Chickpea (*Cicer arietinum* L.). *International Journal of Bio-resource, Environment and Agricultural Sciences*, *1*(3), 90-95.

Panse, V. G. and Sukhatme, P. V. (1978). Statistical methods for Agricultural workers. ICAR. New Delhi, pp. 97−123.

Prathibha, V. H., Mohan Rao, A., Ramesh, S. and Nanda, C. (2013). Estimation of Fruit Quality Parameters in Anthracnose Infected Chilli Fruits. *International Journal of Food Science & Technology*, *4*(2), 57−60.

Rafique, E., Mahmood-ul-Hassan, M., Khokhar, K. M., Ishaq, M., Yousra, M. and Tabassam, T. (2012). Boron Requirement of Chili (*Capsicum annuum* L.): Proposed Diagnostic Criteria. *Journal of Plant Nutrition*, *35*, 739−749.

Ranganna, S. (1977). Manual Analysis of Fruit and Vegetable Products, 2nd edn. Tata McGraw Hill Publishing Co. Ltd., New Delhi, pp. 81–85.

Sabagh, A. E., Mbarki, S., Hossain, A., Iqbal, M. A., Islam, M. S., Raza, A., Llanes, A., Reginato, M., Rahman, M.A., Mahboob, W. and Singhal, R. K. (2021). Potential role of plant growth regulators in administering crucial processes against abiotic stresses. *Frontiers in Agronomy*, *3*, 648694.

Sadasivam, S. and Balasubraminan, T. (1987). Practical Manual in Biochemistry. Tamil Nadu Agricultural University, Coimbatore, p.14.

Saktipada, M., Bakshi, A., Barai, B. K. and Murmu, K. (2008). Character association for grain yield components in wheat (*Triticum aestivum* L.). *Environment and Ecology*, *26*(1), 145-147.

Shil, K., Naser, H., Brahma, S., Yousuf, M., Rashid, M. (2013). Response of Chilli (*Capsicum annuum* L.) to Zinc and Boron Application. *Bangladesh Journal of Agricultural Research*, *38*(1), 49−59.

Shireen, F., Nawaz, M. A., Chen, C., Zhang, Q., Zheng, Z., Sohail, H. Sun, J., Cao, H., Huang, Y. and Bie, Z. (2018). Boron: Functions and Approaches to Enhance Its Availability in Plants for Sustainable Agriculture. *International Journal of Molecular Sciences*, *19*(7), 1856.

Singh, K. N., Kulshreshtha, N., Kumar, V., Kumar, V. and Tim, S. (2006). Genetic variability of wheat (*Triticum aestivum* L.) lines for grain yield and components characters grown under sodic and waterlogged condition. *Indian Journal of Agricultural Sciences*, *76*(7), 414-419.

Sokoto, M. B., Abubakar, I. U. and Dikko, A. U. (2012). Correlation Analysis of some Growth, Yield, Yield Components and Grain Quality of Wheat (*Triticum aestivum* L.). *Nigerian Journal of Basic and Applied Sciences*, *20*(4), 349-356.

Subhani, G. M. (2000). Correlation and path coefficient analysis in bread wheat under drought stress and normal conditions. *Pakistan Journal of Biological Sciences*, *3*(1), 72-77.

Watson, D. T. (1952). The physiological basis of variation in yield. *Advances in Agronomy*, *4*, 101-145.

Weatherley, P. E. (1950). Studies in water relations of cotton plants I, the field measurement of water deficit in leaves. *New Phytologist*, *49*, 81-87.

Wei, Z. and Li, J. (2016). Brassinosteroids regulate root growth, development and symbiosis. *Molecular Plant*, *9*, 86−100.

Yatung, T., Dubey, R. K., Singh, V., Upadhyay, G. and Pandey, A. K. (2014). Selection parameters for fruit yield and related traits in chilli (*Capsicum annuum* L.). *Bangladesh Journal of Botany*, *43*(3), 283-291.

How to cite this article: A. Ghosh, D. Panda and S. Mondal (2023). Correlation Analysis of Some Morpho-Physiological Parameters, Yield and Quality attributes of Chilli (*Capsicum annuum* L.). *Biological Forum – An International Journal*, *15*(1): 732-736.