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Correlation and path analysis in chilli (*Capsicum annuum* L.) genotypes

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Abstract

The present investigation was carried out in two seasons *i.e* during *Kharif*, 2019 and during *Rabi*, 2019-20. Thirty five chilli genotypes were evaluated in Randomized Block Design for seventeen yield and yield contributing characters. Correlation coefficient analysis indicated positive, though not significant association of fruit yield per plant with plant height, plant spread, number of primary branches per plant, days to last harvest, fruit length, fruit diameter, number of fruits per plant, fruit weight, fruit yield per plot, ascorbic acid, capsaicin content and capsanthin content. Path coefficient analysis showed that the number of fruits per plant and fruit yield per plot showed positive direct effect at both phenotypic and genotypic levels on fruit yield per plant. It clearly indicates that direct selection based on these characters would be effective for increasing the yield.

Keywords: Chilli, genotypes, correlation coefficient, path coefficient

Introduction

Chilli (*Capsicum annuum* L.) originated from tropical and humid zone of Central and Southern America and belongs to the Solanaceae family with diploid chromosome number $2n = 2x = 24$. It is a spice, a fruit vegetable widely cultivated in the world and its importance in human food is capital (Dias *et al.*, 2013) [4]. It is rich in proteins, lipids, carbohydrates, fibres, mineral salts (Ca, P, Fe) and in vitamins A, D₃, E, C, K, B₂ and B₁₂ (El-Ghoraba *et al.*, 2013) [6]. It is sometimes referred as capsule of vitamin C because of rich vitamin C content in the fruit (Durust *et al.*, 1997) [5]. It is mainly used for its pungency and pleasant flavor.

Since yield is a complex trait, governed by a large number of components traits. It is imperative to know the interrelationship between yield and its component traits to arrive at an optimal selection index for improvement of yield. Wright (1921) [13] was first to propose the correlation and path analysis to organize the relationship between the predictor and response variables. Correlation simply measures the association between yield and other traits, whereas path coefficient analysis permits the separation of correlation into direct effects (path coefficient) and indirect effects (effects exerted through other variables). This technique, which aims to improve a dependent character like yield when the independent characters have a significant relation in desirable direction and positive direct or indirect effect through other component traits on the dependent characters, became routine in plant breeding programme only after its use by Dewey and Lu (1959) [3].

Material and Methods

The experiment was conducted at the P.G research block, Sri Konda Laxman Telangana State Horticultural University, College of Horticulture, Rajendranagar, Hyderabad during *Kharif*, 2019 and at NBPG Regional station, Rajendranagar, Hyderabad during *Rabi*, 2019-20. Thirty five chilli genotypes were evaluated in Randomized Block Design with three replications. Each germplasm line was grown in a plot of 1.8 m × 4.2 m, 7 plants per row with spacing of 60×60 cm per replication. The mean data was recorded for 17 characters *viz.*, plant height (cm), plant spread (cm²), no. of primary branches per plant, days to first flowering, days to 50% flowering, days to first harvest, days to last harvest, fruit length (cm), fruit diameter (cm), number of fruits per plant, fruit weight (g), fruit yield per plant (kg/plant), fruit yield per plot (kg/ha), ascorbic acid content (mg/100g of fruit), chlorophyll content, capsaicin content (%) and capsanthin content (ASTA units). Both genotypic and phenotypic coefficients of correlation between two characters were determined by using the variance and covariance components as suggested by Al-Jibouri *et al.* (1958) [1]. Path coefficient analysis was carried out using phenotypic correlation values of yield components on yield as suggested by Wright (1921) [13] and illustrated by Dewey and Lu (1959) [3].

Results and discussions

Correlation coefficient analysis

The phenotypic (P) and genotypic correlation (G) coefficients were worked out for 17 characters and the results are presented in the table 1(a) for *Kharif*, 2019, Table 1(b) for *Rabi*, 2019-20 and Table 1(c) for pooled data. In general, it was observed that genotypic correlation coefficients were higher than that of phenotypic correlation coefficients. This could be interpreted on the basis, that there was a strong inherent genotypic relationship between the traits studied, but their phenotypic expression was impeded by influence of environmental factors.

In *Kharif*, 2019, fruit yield per plant showed positive but not significant correlation with plant height (0.3366 P, 0.3691 G), plant spread (0.2703 P, 0.2887 G), number of primary branches per plant (0.3698 P, 0.4703 G), days to last harvest (0.2833 P, 0.3443 G), fruit length (0.5599 P, 0.6087 G), fruit diameter (0.0572 P, 0.1314 G), number of fruits per plant (0.6474 P, 0.6525 G), fruit weight (0.3682 P, 0.3464 G), fruit yield per plot (0.9985 P, 1.0001 G), ascorbic acid (0.1347 P, 0.1446 G), capsaicin content (0.0428 P, 0.0673 G) and capsanthin content (0.0303 P, 0.383 G).

In *Rabi*, 2019-20, fruit yield per plant showed positive but not significant correlation with days to first flowering (0.0351 P, 0.0510 G), days to 50% flowering (0.0771 P, 0.663 G), fruit length (0.5030 P, 0.5362 G), number of fruits per plant (0.6032 P, 0.5932 G), fruit weight (0.4593 P, 0.4391 G), fruit yield per plot (0.9994 P, 1.0000 G), ascorbic acid (0.0952 P, 0.1009 G), capsaicin content (0.0148 P, 0.0307 G) and capsanthin content (0.0366 P, 0.0401 G).

In pooled data, the character fruit yield per plant showed positive but not significant correlation with plant height (0.1366 P, 0.1589 G), plant spread (0.1455 P, 0.1472 G), number of primary branches per plant (0.1967 P, 0.3270G), days to last harvest (0.1172 P, 0.1337 G), fruit length (0.5309 P, 0.6384 G), fruit diameter (0.0499 P, 0.0490 G), number of fruits per plant (0.6294 P, 0.6255 G), fruit weight (0.4085 P, 0.3913 G), fruit yield per plot (0.9989 P, 1.0000G), ascorbic acid (0.1160 P, 0.1248), capsaicin content (0.0304 P, 0.0517 G) and capsanthin content (0.0331 P, 0.0389 G) which indicates that the adequate knowledge of interrelationship between fruit yield per plant and its components creates ample scope in the improvement of yield by improving these characters as they are highly correlated.

Farhad *et al.* (2008) ^[7] and Amit *et al.* (2014) ^[2] reported parallel character association with plant height and number of primary branches per plant. Nazir *et al.* (2005) ^[10] showed similar association with plant height and fruit length. Hosamani and Shivkumar (2008) ^[8] showed similar association with plant height, fruit length and fruit diameter.

Shiva *et al.* (2015) ^[12] showed similar results with fruit length, fruit diameter and ascorbic acid. Sharma *et al.* (2010) ^[11] reported similar results with number of primary branches per plant and ascorbic acid. Kaur and Singh (2009) ^[9] showed similar results with number of fruits per plant and capsanthin content.

Path coefficient analysis

Path analysis was carried out at phenotypic and genotypic level considering fruit yield per plant (kg) as dependent variable. The estimates of direct and indirect effects of the seventeen yield related characters on fruit yield per plant are presented in Table 2(a) for *Kharif*, 2019, Table 2(b) for *Rabi*, 2019-20 and Table 2(c) for pooled data.

In *Kharif*, 2019, days to first flowering (0.0175 P, 0.0105 G), fruit weight (0.0068 P, 0.0573 G) and fruit yield per plot (0.9917 P, 1.0696 G) showed positive direct effect at both phenotypic and genotypic levels on fruit yield per plant. Plant height (0.0011), number of primary branches per plant (0.0051), days at last harvest (0.0068), number of fruits per plant (0.0115), chlorophyll content (0.0099) and capsanthin content (0.0006) showed positive direct effect at phenotypic level and the trait plant spread (0.0648) showed positive direct effect at genotypic level on fresh fruit yield per plant.

In *Rabi*, 2019-20, days to 50% flowering (0.0165 P, 0.0784 G), fruit length (0.0014 P, 0.0064 G), fruit diameter (0.0107 P, 0.0029 G), number of fruits per plant (0.0243 P, 0.0182 G), fruit yield per plot (0.9801 P, 0.9840 G) and capsanthin content (0.0026 P, 0.0074 G) showed positive direct effect at both phenotypic and genotypic levels on fruit yield per plant. Days to first harvest (0.0108), fruit weight (0.0065) and capsaicin content (0.0006) showed positive direct effect at phenotypic level and the traits plant height (0.0132), days to last harvest (0.0341) and chlorophyll content (0.0023) showed positive direct effect at genotypic level on fresh fruit yield per plant.

In pooled data, path coefficient analysis showed that the number of fruits per plant (0.0158 P, 0.0043 G) and fruit yield per plot (0.9871 P, 1.0065 G) showed positive direct effect at both phenotypic and genotypic levels on fruit yield per plant. Plant height (0.0010), number of primary branches per plant (0.0047), days to first flowering (0.0029), days to last harvest (0.0059), fruit diameter (0.0034), fruit weight (0.0045) and chlorophyll content (0.0053) showed positive direct effect at phenotypic level and plant spread (0.0096) and days to 50 percent flowering (0.0523) showed positive direct effect at genotypic level on fresh fruit yield per plant. It clearly indicates that direct selection based on these characters would be effective for increasing the yield.

Table 1: (a) Phenotypic (P) and genotypic (G) correlation coefficients among yield and yield attributes in 35 chilli genotypes in *Kharif*, 2019

Character		PH	PS	NPB	DFF	D50%F	DFH	DLH	FL	FD	NFP	FW	FYPPL	AA	CHL	CAPSI	CAPSA	FYP
PH	P	1.0000	0.5306***	0.2065*	-0.2631**	-0.1640	-0.1120	0.2391*	0.0175	0.1221	0.4685***	0.0276	0.3385***	-0.0589	-0.2763**	0.1182	0.1028	0.3366
	G	1.0000	0.5376***	0.2787*	-0.2911**	-0.1944	-0.1519	0.3163*	0.0192	0.1312	0.4903***	0.0354	0.3730***	-0.0592	-0.3031**	0.1179	0.1032	0.3691
PS	P		1.0000	0.4223***	-0.0618	-0.0718	0.0768	0.5200***	-0.0965	-0.0620	0.5166***	-0.2678**	0.2729**	0.0969	-0.0949	0.0145	0.0007	0.2703
	G		1.0000	0.5445***	-0.0655	-0.0801	0.0980	0.6945***	-0.0972	-0.0681	0.5334***	-0.2783**	0.2910**	0.0969	-0.1047	0.0149	0.0007	0.2887
NPB	P			1.0000	-0.1348	-0.1414	-0.1281	0.3209***	0.0237	0.1990*	0.2429*	0.1354	0.3649***	-0.0901	-0.1091	0.0142	-0.0706	0.3698
	G			1.0000	-0.1299	-0.2012	-0.2816	0.1143***	0.0053	0.3066*	0.3608*	0.0825	0.4687***	-0.1312	-0.1710	0.0342	-0.0911	0.4703
DFF	P				1.0000	0.8171***	0.3965***	0.0555	0.1279	-0.1673	-0.1902	0.0590	-0.0688	-0.1419	0.0633	0.0292	-0.1340	-0.0774
	G				1.0000	0.8700***	0.4794***	0.1052	0.1461	-0.1764	-0.2096	0.0576	-0.0852	-0.1507	0.1364	0.0411	-0.1385	-0.0942
D50%F	P					1.0000	0.4524***	0.1006	-0.0326	0.0953	-0.3229***	0.1968*	-0.1079	-0.1381	0.1527	-0.1232	-0.0576	-0.1224
	G					1.0000	0.5363***	0.1598	-0.0252	0.1331	-0.3851***	0.2141*	-0.1508	-0.1550	0.2668	-0.1267	-0.0562	-0.1649
DFH	P						1.0000	0.2269*	-0.2099*	-0.2129*	0.0103	-0.2286*	-0.0941	-0.1507	-0.0135	-0.1416	-0.2589**	-0.1066
	G						1.0000	0.2087*	-0.2960*	-0.1041*	0.0046	-0.3379*	-0.1630	-0.1908	0.0299	-0.1613	-0.3188**	-0.1732
DLH	P							1.0000	0.0577	-0.0780	0.2809	-0.0150	0.2858**	0.1830	-0.1541	0.0560	-0.0505	0.2833
	G							1.0000	0.0573	-0.0534	0.4216	-0.1303	0.3575**	0.2316	-0.2443	0.0923	-0.0676	0.3443
FL	P								1.0000	-0.1857	0.2277*	0.4071***	0.5267***	0.2294*	-0.2587**	0.0958	-0.0595	0.5599
	G								1.0000	-0.1918	0.2488*	0.4180***	0.6098***	0.2300*	-0.3000**	0.0930	-0.0604	0.6087
FD	P									1.0000	-0.4041	0.6247***	0.0561	0.1483	0.2675**	-0.4139***	-0.1471	0.0572
	G									1.0000	-0.4459	0.7738***	0.1343	0.1638	0.2897**	-0.4714***	-0.1723	0.1314
NFP	P										1.0000	-0.3565***	0.6461***	-0.0905	-0.3258***	0.3260***	0.2089*	0.6474
	G										1.0000	-0.3775***	0.6509***	-0.0900	-0.3921***	0.3506***	0.2174*	0.6525
FW	P											1.0000	0.3705***	0.3494***	-0.0256	-0.2983**	-0.1832	0.3682
	G											1.0000	0.3495***	0.3592***	0.0069	-0.2974**	-0.1842	0.3464
FYPPL	P												1.0000	0.1365	-0.2489*	0.0432	0.0268	0.9985
	G												1.0000	0.1464	-0.2812*	0.0668	0.0350	1.0001
AA	P													1.0000	-0.1912	-0.2963**	-0.0824	0.1347
	G													1.0000	-0.2121	-0.2996**	-0.0829	0.1446
CHL	P														1.0000	-0.1333	0.1374	-0.2419
	G														1.0000	-0.1781	0.1379	-0.2767
CAPSI	P															1.0000	0.2013*	0.0428
	G															1.0000	0.1997*	0.0673
CAPSA	P																1.0000	0.0303
	G																1.0000	0.0383
FYP	P																	1.0000
	G																	1.0000

*, ** and *** = significant at 5%, 1% and 0.5% LOS

PH - Plant height (cm), PS- Plant spread (cm²), NPB - Number of primary branches per plant, DFF- Days to first flowering, D50%F- Days to 50 percent flowering, DFH – Days to first harvest, DLH – Days to last harvest, FL - Fruit length (cm), FD - Fruit diameter (cm), NFP- Number of fruits per plant, FW - Fruit weight (g), FYPPL- Fruit yield per plot(kg), AA-Ascorbic acid(mg/100g), CHL – Chlorophyll content, CAPSI-Capsaicin (%), CAPSA-Capsanthin(ASTA unit),FYP- Fruit yield per plant (Kg)

Table 1(b): Phenotypic (P) and genotypic (G) correlation coefficients among yield and yield attributes in 35 chilli genotypes in *Rabi*, 2019-20

Character		PH	PS	NPB	DFF	D50%F	DFH	DLH	FL	FD	NFP	FW	FYPPL	AA	CHL	CAPSI	CAPSA	FYP
PH	P	1.0000	0.5145***	0.2627**	0.1795	0.1779	0.2847**	0.2397*	-0.4132***	-0.0093	0.2286*	-0.2755**	-0.0894	-0.2469*	0.0461	0.2479*	-0.1016	-0.0854
	G	1.0000	0.5225***	0.3066**	0.1953	0.1448	0.3194**	0.3092*	-0.4241***	-0.0392	0.2246*	-0.2871**	-0.1020	-0.2520*	0.0304	0.2612*	-0.1027	-0.1004
PS	P		1.0000	0.2250*	0.1848	0.2489*	0.2952**	0.2416*	-0.2090*	-0.1217	0.0795	-0.1266	-0.0220	0.0461	0.2531**	0.0546	0.1541	-0.0223
	G		1.0000	0.2839*	0.1986	0.2642*	0.3164**	0.2883*	-0.2115*	-0.1388	0.0810	-0.1292	-0.0230	0.0461	0.2918**	0.0549	0.1541	-0.0233
NPB	P			1.0000	0.0020	0.1739	0.1128	0.0849	-0.1999*	-0.1025	0.0967	-0.1637	-0.0126	0.1642	0.0569	-0.0501	-0.0326	-0.0113
	G			1.0000	0.2282	0.1734	0.3462	0.4921	-0.1927*	-0.2404	0.0671	-0.2204	-0.0652	0.2113	-0.1373	0.0370	-0.0204	-0.0696
DFF	P				1.0000	0.8619***	0.6334***	0.6462***	-0.0746	0.1451	-0.1814	0.3276***	0.0373	0.3160**	0.0387	-0.2998**	-0.1856	0.0351
	G				1.0000	0.9947***	0.6084***	0.6039***	-0.1295	0.2014	-0.1847	0.3652***	0.0513	0.3368**	0.1616	-0.3942**	-0.2151	0.0510
D50%F	P					1.0000	0.5038***	0.4854***	-0.0921	0.2126*	-0.1919*	0.3915***	0.0754	0.3296***	0.0879	-0.3220***	-0.2566**	0.0771
	G					1.0000	0.6097***	0.6508***	-0.0992	0.1566*	-0.2306*	0.4218***	0.0680	0.3476***	0.0558	-0.3349***	-0.2709**	0.0663
DFH	P						1.0000	0.9327***	-0.1574	0.1018	-0.1777	0.0514	-0.0942	0.0846	0.1488	-0.3123**	-0.0937	-0.0966
	G						1.0000	1.0103***	-0.2093	0.1772	-0.1929	0.0489	-0.1243	0.0891	0.2774	-0.3973**	-0.1131	-0.1257
DLH	P							1.0000	-0.1033	0.0769	-0.1443	0.0507	-0.0568	0.0858	0.0322	-0.2437*	-0.0454	-0.0607
	G							1.0000	-0.2008	0.1534	-0.1469	0.0757	-0.0459	0.0978	0.2903	-0.4067*	-0.0778	-0.0453
FL	P								1.0000	-0.0245	0.1053	0.4393***	0.5072***	0.3128**	-0.1370	0.0323	0.1097	0.5030
	G								1.0000	-0.0323	0.1118	0.4536***	0.5378***	0.3145**	-0.1198	0.0116	0.1062	0.5362
FD	P									1.0000	-0.3920***	0.4184***	0.0415	0.1320	0.2915**	-0.4351***	-0.2744**	0.0445
	G									1.0000	-0.5189***	0.4398***	-0.0262	0.1490	0.2592**	-0.4863***	-0.3111**	-0.0324
NFP	P										1.0000	-0.3221***	0.5971***	-0.1279	-0.1751	0.3875***	0.2067*	0.6032
	G										1.0000	-0.3546***	0.5876***	-0.1301	-0.2631	0.4134***	0.2120*	0.5932
FW	P											1.0000	0.4632***	0.2951**	0.0158	-0.3375***	-0.1421	0.4593
	G											1.0000	0.4437***	0.3021**	-0.0464	-0.3439***	-0.1439	0.4391
FYPPL	P												1.0000	0.0985	-0.0985	0.0122	0.0356	0.9994
	G												1.0000	0.1038	-0.2134	0.0267	0.0387	1.0000
AA	P													1.0000	-0.1206	-0.3208***	-0.0772	0.0952
	G													1.0000	-0.1353	-0.3281***	-0.0777	0.1009
CHL	P														1.0000	-0.2561**	0.0663	-0.0977
	G														1.0000	-0.2292**	0.0897	-0.2193
CAPSI	P															1.0000	0.2424*	0.0148
	G															1.0000	0.2403*	0.0307
CAPSA	P																1.0000	0.0366
	G																1.0000	0.0401
FYP	P																	1.0000
	G																	1.0000

*, ** and *** = significant at 5%, 1% and 0.5% LOS

PH - Plant height (cm), PS- Plant spread (cm²), NPB - Number of primary branches per plant, DFF- Days to first flowering, D50%F- Days to 50 percent flowering, DFH – Days to first harvest, DLH – Days to last harvest, FL - Fruit length (cm), FD - Fruit diameter (cm), NFP- Number of fruits per plant, FW - Fruit weight (g), FYPPL- Fruit yield per plot (kg), AA-Ascorbic acid(mg/100g), CHL – Chlorophyll content, CAPSI-Capsaicin (%), CAPSA-Capsanthin(ASTA unit), FYP- Fruit yield per plant (Kg)

Table 1(c): Phenotypic (P) and genotypic (G) correlation coefficients among yield and yield attributes in 35 chilli genotypes in pooled data

Character		PH	PS	NPB	DFH	D50%F	DFH	DLH	FL	FD	NFP	FW	FYPPL	AA	CHL	CAPSI	CAPSA	FYP
PH	P	1.0000	0.5207***	0.2350***	-0.0226	0.0461	0.1051	0.2394***	-0.2069**	0.0478	0.3559***	-0.1292	0.1343	-0.1561*	-0.0935	0.1826**	-0.0018	0.1366
	G	1.0000	0.5877***	0.1967***	0.0299	0.0362	0.1894	0.1865***	-0.3784**	0.0207	0.4600***	-0.1702	0.1600	-0.2145*	-0.1844	0.3060**	-0.0014	0.1589
PS	P		1.0000	0.3304***	0.0605	0.1078	0.1848**	0.3811***	-0.1495*	-0.0918	0.3380***	-0.2008**	0.1461*	0.0728	0.0851	0.0327	0.0721	0.1455
	G		1.0000	0.6360***	0.0997	0.0792	0.2627**	0.3918***	-0.2744*	-0.0739	0.4529***	-0.3402**	0.1462*	0.1112	0.1022	0.1234	0.1097	0.1472
NPB	P			1.0000	-0.0630	0.0462	-0.0008	0.1984**	-0.0885	0.0343	0.1784**	-0.0136	0.1922**	0.0365	-0.0181	-0.0166	-0.0518	0.1967
	G			1.0000	0.2659	0.2036	0.1803	0.2935**	0.0602	-0.0617	0.3012**	-0.0488	0.3303**	0.0670	-0.1808	0.0357	-0.0827	0.3270
DFH	P				1.0000	0.8365***	0.5297***	0.3813***	0.0194	0.0136	-0.1830**	0.2016**	-0.0166	0.1015	0.0490	-0.1393*	-0.1609*	-0.0224
	G				1.0000	0.9964***	0.5557***	0.5789***	-0.0601	0.0344	-0.2248**	0.2428**	-0.0316	0.1257	0.1272	-0.1990*	-0.2082*	-0.0346
D50%F	P					1.0000	0.4805***	0.3366***	-0.0676	0.1707*	-0.2386***	0.3087***	-0.0041	0.1423*	0.1099	-0.2336***	-0.1733*	-0.0099
	G					1.0000	0.5665***	0.5803***	-0.0478	0.2375*	-0.3473***	0.4139***	-0.0230	0.1930*	0.1506	-0.2720***	-0.2387*	-0.0292
DFH	P						1.0000	0.6189***	-0.1813**	-0.0294	-0.0769	-0.0783	-0.0932	-0.0245	0.0813	-0.2289***	-0.1707*	-0.1005
	G						1.0000	0.7293***	-0.3714**	0.1178	-0.1482	-0.1583	-0.2039	-0.0370	0.2300	-0.3106***	-0.2573*	-0.2090
DLH	P							1.0000	-0.0275	0.0107	0.0839	0.0195	0.1192	0.1318	-0.0470	-0.0957	-0.0478	0.1172
	G							1.0000	-0.0227	0.0772	0.1116	-0.0288	0.1401	0.2401	0.0651	-0.1786	-0.1041	0.1337
FL	P								1.0000	-0.0956	0.1717*	0.4235***	0.5345***	0.2719***	-0.1899**	0.0646	0.0259	0.5309
	G								1.0000	-0.1253	0.2074*	0.4885***	0.6391***	0.3094***	-0.2544**	0.0650	0.0286	0.6384
FD	P									1.0000	-0.3883***	0.5083***	0.0479	0.1387*	0.2819***	-0.4216***	-0.2157**	0.0499
	G									1.0000	-0.5051***	0.6253***	0.0530	0.1671*	0.3012***	-0.5221***	-0.2592**	0.0490
NFP	P										1.0000	-0.3385***	0.6259***	-0.1061	-0.2454***	0.3505***	0.2065**	0.6294
	G										1.0000	-0.3650***	0.6223***	-0.1077	-0.3190***	0.3858***	0.2149**	0.6255
FW	P											1.0000	0.4121***	0.3219***	-0.0026	-0.3172***	-0.1626*	0.4085
	G											1.0000	0.3950***	0.3306***	-0.0171	-0.3255***	-0.1641*	0.3913
FYPPL	P												1.0000	0.1185	-0.1688*	0.0294	0.0307	0.9989
	G												1.0000	0.1270	-0.2346*	0.0507	0.0364	1.0000
AA	P													1.0000	-0.1513*	-0.3080***	-0.0798	0.1160
	G													1.0000	-0.1697*	-0.3171***	-0.0803	0.1248
CHL	P														1.0000	-0.1974**	0.0977	-0.1653
	G														1.0000	-0.2070**	0.1100	-0.2340
CAPSI	P															1.0000	0.2211**	0.0304
	G															1.0000	0.2248**	0.0517
CAPSA	P																1.0000	0.0331
	G																1.0000	0.0389
FYP	P																	1.0000
	G																	1.0000

*, ** and *** = significant at 5%, 1% and 0.5% LOS

PH - Plant height (cm), PS- Plant spread (cm²), NPB - Number of primary branches per plant, DFF- Days to first flowering, D50%F- Days to 50 percent flowering, DFH – Days to first harvest, DLH – Days to last harvest, FL - Fruit length (cm), FD - Fruit diameter (cm), NFP- Number of fruits per plant, FW - Fruit weight (g), FYPPL- Fruit yield per plot (kg), AA-Ascorbic acid(mg/100g), CHL – Chlorophyll content, CAPSI-Capsaicin (%), CAPSA-Capsanthin(ASTA unit), FYP- Fruit yield per plant (Kg)

Table 2(a): Phenotypic (P) and genotypic (G) path coefficients indicating direct and indirect effects of components characters on fruit yield in 35 chilli genotypes in *Kharif*, 2019

Character		Plant height (cm)	Plant spread (cm ²)	No. of primary branches	Days to first flowering	Days to 50% flowering	Days to first harvest	Days to last harvest	Fruit length (cm)	Fruit diameter (cm)	No. of fruits per plant	Fruit weight (g)	Fruit yield per plot (Kg)	Ascorbic acid (mg/100g)	Chlorophyll (%)	Capsaicin (%)	Capsanthin (ASTA units)
Plant height (cm)	P	0.0011	0.0006	0.0002	-0.0003	-0.0002	-0.0001	0.0003	0.0000	0.0001	0.0005	0.0000	0.0004	-0.0001	-0.0003	0.0001	0.0001
	G	-0.0227	-0.0122	-0.0063	0.0066	0.0044	0.0035	-0.0072	-0.0004	-0.0030	-0.0111	-0.0008	-0.0085	0.0013	0.0069	-0.0027	-0.0023
Plant spread (cm ²)	P	-0.0054	-0.0102	-0.0043	0.0006	0.0007	-0.0008	-0.0053	0.0010	0.0006	-0.0053	0.0027	-0.0028	-0.0010	0.0010	-0.0001	0.0000
	G	0.0349	0.0648	0.0353	-0.0042	-0.0052	0.0064	0.0450	-0.0063	-0.0044	0.0346	-0.0180	0.0189	0.0063	-0.0068	0.0010	0.0000
No. of primary branches	P	0.0010	0.0021	0.0051	-0.0007	-0.0007	-0.0006	0.0016	0.0001	0.0010	0.0012	0.0007	0.0018	-0.0005	-0.0006	0.0001	-0.0004
	G	-0.0108	-0.0212	-0.0389	0.0051	0.0078	0.0110	-0.0044	-0.0002	-0.0119	-0.0140	-0.0032	-0.0182	0.0051	0.0067	-0.0013	0.0035
Days to first flowering	P	-0.0046	-0.0011	-0.0024	0.0175	0.0143	0.0069	0.0010	0.0022	-0.0029	-0.0033	0.0010	-0.0012	-0.0025	0.0011	0.0005	-0.0023
	G	-0.0031	-0.0007	-0.0014	0.0105	0.0092	0.0050	0.0011	0.0015	-0.0019	-0.0022	0.0006	-0.0009	-0.0016	0.0014	0.0004	-0.0015
Days to 50% flowering	P	0.0043	0.0019	0.0037	-0.0212	-0.0260	-0.0117	-0.0026	0.0008	-0.0025	0.0084	-0.0051	0.0028	0.0036	-0.0040	0.0032	0.0015
	G	0.0068	0.0028	0.0070	-0.0304	-0.0349	-0.0187	-0.0056	0.0009	-0.0046	0.0134	-0.0075	0.0053	0.0054	-0.0093	0.0044	0.0020
Days to first harvest	P	0.0011	-0.0008	0.0013	-0.0040	-0.0046	-0.0101	-0.0023	0.0021	0.0022	-0.0001	0.0023	0.0010	0.0015	0.0001	0.0014	0.0026
	G	0.0013	-0.0008	0.0023	-0.0040	-0.0045	-0.0083	-0.0017	0.0025	0.0009	0.0000	0.0028	0.0014	0.0016	-0.0002	0.0013	0.0027
Days to last harvest	P	0.0016	0.0035	0.0022	0.0004	0.0007	0.0015	0.0068	0.0004	-0.0005	0.0019	-0.0001	0.0019	0.0012	-0.0010	0.0004	-0.0003
	G	-0.0110	-0.0241	-0.0040	-0.0036	-0.0055	-0.0072	-0.0347	-0.0020	0.0019	-0.0146	0.0045	-0.0124	-0.0080	0.0085	-0.0032	0.0023
Fruit length (cm)	P	-0.0001	0.0006	-0.0002	-0.0009	0.0002	0.0014	-0.0004	-0.0067	0.0012	-0.0015	-0.0027	-0.0038	-0.0015	0.0017	-0.0006	0.0004
	G	-0.0012	0.0058	-0.0003	-0.0088	0.0015	0.0178	-0.0034	-0.0601	0.0115	-0.0149	-0.0251	-0.0366	-0.0138	0.0180	-0.0056	0.0036
Fruit diameter (cm)	P	-0.0003	0.0002	-0.0005	0.0004	-0.0002	0.0005	0.0002	0.0005	-0.0024	0.0010	-0.0015	-0.0001	-0.0004	-0.0006	0.0010	0.0004
	G	-0.0078	0.0041	-0.0183	0.0105	-0.0080	0.0062	0.0032	0.0115	-0.0598	0.0267	-0.0463	-0.0080	-0.0098	-0.0173	0.0282	0.0103
No. of fruits per plant	P	0.0054	0.0060	0.0028	-0.0022	-0.0037	0.0001	0.0032	0.0026	-0.0047	0.0115	-0.0041	0.0074	-0.0010	-0.0038	0.0038	0.0024
	G	-0.0214	-0.0233	-0.0158	-0.0092	0.0168	-0.0002	-0.0184	-0.0109	0.0195	-0.0437	0.0165	-0.0284	0.0039	0.0171	-0.0153	-0.0095
Fruit weight (g)	P	0.0002	-0.0018	0.0009	0.0004	0.0013	-0.0015	-0.0001	0.0028	0.0042	-0.0024	0.0068	0.0025	0.0024	-0.0002	-0.0020	-0.0012
	G	0.0020	-0.0160	0.0047	0.0033	0.0123	-0.0193	-0.0075	0.0240	0.0444	-0.0217	0.0573	0.0200	0.0206	0.0004	-0.0171	-0.0106
Fruit yield per plot (Kg)	P	0.3357	0.2706	0.3619	-0.0682	-0.1070	-0.0933	0.2834	0.5580	0.0556	0.6408	0.3674	0.9917	0.1354	-0.2468	0.0428	0.0265
	G	0.3989	0.3112	0.5013	-0.0912	-0.1613	-0.1744	0.3823	0.6522	0.1437	0.6962	0.3738	1.0696	0.1566	-0.3008	0.0714	0.0374
Ascorbic acid (mg/100g)	P	0.0002	-0.0003	0.0002	0.0004	0.0004	0.0004	-0.0005	-0.0006	-0.0004	0.0002	-0.0009	-0.0004	-0.0027	0.0005	0.0008	0.0002
	G	0.0015	-0.0025	0.0034	0.0039	0.0040	0.0049	-0.0059	-0.0059	-0.0042	0.0023	-0.0092	-0.0037	-0.0256	0.0054	0.0077	0.0021
Chlorophyll (%)	P	-0.0027	-0.0009	-0.0011	0.0006	0.0015	-0.0001	-0.0015	-0.0026	0.0026	-0.0032	-0.0003	-0.0025	-0.0019	0.0099	-0.0013	0.0014
	G	0.0022	0.0008	0.0012	-0.0010	-0.0019	-0.0002	0.0018	0.0022	-0.0021	0.0028	0.0000	0.0020	0.0015	-0.0073	0.0013	-0.0010
Capsaicin (%)	P	-0.0009	-0.0001	-0.0001	-0.0002	0.0009	0.0010	-0.0004	-0.0007	0.0030	-0.0024	0.0022	-0.0003	0.0022	0.0010	-0.0073	-0.0015
	G	-0.0004	0.0000	-0.0001	-0.0001	0.0004	0.0005	-0.0003	-0.0003	0.0015	-0.0011	0.0010	-0.0002	0.0010	0.0006	-0.0032	-0.0006
Capsanthin (ASTA units)	P	0.0001	0.0000	0.0000	-0.0001	0.0000	-0.0001	0.0000	0.0000	-0.0001	0.0001	-0.0001	0.0000	0.0000	0.0001	0.0001	0.0006
	G	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0002
Correlation coefficient	P	0.3366	0.2703	0.3698	-0.0774	-0.1224	-0.1066	0.2833	0.5599	0.0572	0.6474	0.3682	0.9985	0.1347	-0.2419	0.0428	0.0303
	G	0.3691	0.2887	0.4703	-0.0942	-0.1649	-0.1732	0.3443	0.6087	0.1314	0.6525	0.3464	1.0001	0.1446	-0.2767	0.0673	0.0383

Table 2(b): Phenotypic (P) and genotypic (G) path coefficients indicating direct and indirect effects of components characters on fruit yield in 35 chilli genotypes in *Rabi*, 2019-20

Character		Plant height (cm)	Plant spread (cm ²)	No. of primary branches	Days to first flowering	Days to 50% flowering	Days to first harvest	Days to last harvest	Fruit length (cm)	Fruit diameter (cm)	No. of fruits per plant	Fruit weight (g)	Fruit yield per plot (Kg)	Ascorbic acid (mg/100g)	Chlorophyll (%)	Capsaicin (%)	Capsanthin (ASTA units)
Plant height (cm)	P	-0.0022	-0.0011	-0.0006	-0.0004	-0.0004	-0.0006	-0.0005	0.0009	0.0000	-0.0005	0.0006	0.0002	0.0005	-0.0001	-0.0005	0.0002
	G	0.0132	0.0069	0.0040	0.0026	0.0019	0.0042	0.0041	-0.0056	-0.0005	0.0030	-0.0038	-0.0013	-0.0033	0.0004	0.0034	-0.0014
Plant spread (cm ²)	P	-0.0005	-0.0010	-0.0002	-0.0002	-0.0003	-0.0003	-0.0002	0.0002	0.0001	-0.0001	0.0001	0.0000	0.0000	-0.0003	-0.0001	-0.0002
	G	-0.0057	-0.0110	-0.0031	-0.0022	-0.0029	-0.0035	-0.0032	0.0023	0.0015	-0.0009	0.0014	0.0003	-0.0005	-0.0032	-0.0006	-0.0017
No. of primary branches	P	-0.0001	-0.0001	-0.0003	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	G	-0.0017	-0.0016	-0.0056	-0.0013	-0.0010	-0.0019	-0.0028	0.0011	0.0013	-0.0004	0.0012	0.0004	-0.0012	0.0008	-0.0002	0.0001
Days to first flowering	P	-0.0021	-0.0022	0.0000	-0.0117	-0.0101	-0.0074	-0.0076	0.0009	-0.0017	0.0021	-0.0038	-0.0004	-0.0037	-0.0005	0.0035	0.0022
	G	-0.0135	-0.0137	-0.0158	-0.0690	-0.0687	-0.0420	-0.0417	0.0089	-0.0139	0.0127	-0.0252	-0.0035	-0.0233	-0.0112	0.0272	0.0148
Days to 50% flowering	P	0.0029	0.0041	0.0029	0.0143	0.0165	0.0083	0.0080	-0.0015	0.0035	-0.0032	0.0065	0.0012	0.0055	0.0015	-0.0053	-0.0042
	G	0.0113	0.0207	0.0136	0.0780	0.0784	0.0478	0.0510	-0.0078	0.0123	-0.0181	0.0331	0.0053	0.0272	0.0044	-0.0262	-0.0212
Days to first harvest	P	0.0031	0.0032	0.0012	0.0068	0.0054	0.0108	0.0100	-0.0017	0.0011	-0.0019	0.0006	-0.0010	0.0009	0.0016	-0.0034	-0.0010
	G	-0.0134	-0.0133	-0.0146	-0.0256	-0.0256	-0.0420	-0.0425	0.0088	-0.0075	0.0081	-0.0021	0.0052	-0.0037	-0.0117	0.0167	0.0048
Days to last harvest	P	-0.0028	-0.0028	-0.0010	-0.0074	-0.0056	-0.0108	-0.0115	0.0012	-0.0009	0.0017	-0.0006	0.0007	-0.0010	-0.0004	0.0028	0.0005
	G	0.0105	0.0098	0.0168	0.0206	0.0222	0.0344	0.0341	-0.0068	0.0052	-0.0050	0.0026	-0.0016	0.0033	0.0099	-0.0139	-0.0026
Fruit length (cm)	P	-0.0006	-0.0003	-0.0003	-0.0001	-0.0001	-0.0002	-0.0001	0.0014	0.0000	0.0001	0.0006	0.0007	0.0004	-0.0002	0.0000	0.0002
	G	-0.0027	-0.0014	-0.0012	-0.0008	-0.0006	-0.0013	-0.0013	0.0064	-0.0002	0.0007	0.0029	0.0035	0.0020	-0.0008	0.0001	0.0007
Fruit diameter (cm)	P	-0.0001	-0.0013	-0.0011	0.0015	0.0023	0.0011	0.0008	-0.0003	0.0107	-0.0042	0.0045	0.0004	0.0014	0.0031	-0.0046	-0.0029
	G	-0.0001	-0.0004	-0.0007	0.0006	0.0004	0.0005	0.0004	-0.0001	0.0029	-0.0015	0.0013	-0.0001	0.0004	0.0007	-0.0014	-0.0009
No. of fruits per plant	P	0.0056	0.0019	0.0024	-0.0044	-0.0047	-0.0043	-0.0035	0.0026	-0.0095	0.0243	-0.0078	0.0145	-0.0031	-0.0043	0.0094	0.0050
	G	0.0041	0.0015	0.0012	-0.0034	-0.0042	-0.0035	-0.0027	0.0020	-0.0094	0.0182	-0.0065	0.0107	-0.0024	-0.0048	0.0075	0.0039
Fruit weight (g)	P	-0.0018	-0.0008	-0.0011	0.0021	0.0026	0.0003	0.0003	0.0029	0.0027	-0.0021	0.0065	0.0030	0.0019	0.0001	-0.0022	-0.0009
	G	0.0014	0.0006	0.0011	-0.0018	-0.0021	-0.0002	-0.0004	-0.0022	-0.0021	0.0017	-0.0049	-0.0022	-0.0015	0.0002	0.0017	0.0007
Fruit yield per plot (Kg)	P	-0.0877	-0.0216	-0.0123	0.0366	0.0739	-0.0923	-0.0557	0.4971	0.0406	0.5852	0.4540	0.9801	0.0965	-0.0965	0.0120	0.0348
	G	-0.0103	-0.0226	-0.0642	0.0505	0.0669	-0.1223	-0.0451	0.5292	-0.0257	0.5782	0.4366	0.9840	0.1021	-0.2099	0.0263	0.0381
Ascorbic acid (mg/100g)	P	0.0010	-0.0002	-0.0007	-0.0013	-0.0013	-0.0003	-0.0003	-0.0013	-0.0005	0.0005	-0.0012	-0.0004	-0.0040	0.0005	0.0013	0.0003
	G	0.0003	-0.0001	-0.0003	-0.0004	-0.0005	-0.0001	-0.0001	-0.0004	-0.0002	0.0002	-0.0004	-0.0001	-0.0013	0.0002	0.0004	0.0001
Chlorophyll (%)	P	-0.0001	-0.0006	-0.0001	-0.0001	-0.0002	-0.0003	-0.0001	0.0003	-0.0007	0.0004	0.0000	0.0002	0.0003	-0.0023	0.0006	-0.0001
	G	0.0001	0.0007	-0.0003	0.0004	0.0001	0.0006	0.0007	-0.0003	0.0006	-0.0006	-0.0001	-0.0005	-0.0003	0.0023	-0.0005	-0.0002
Capsaicin (%)	P	0.0002	0.0000	0.0000	-0.0002	-0.0002	-0.0002	-0.0001	0.0000	-0.0003	0.0002	-0.0002	0.0000	-0.0002	-0.0002	0.0006	0.0001
	G	-0.0030	-0.0006	-0.0004	0.0046	0.0039	0.046	0.0047	-0.0001	0.0056	-0.0048	0.0040	-0.0003	0.0038	0.0027	-0.0116	-0.0028
Capsanthin (ASTA units)	P	-0.0003	0.0004	-0.0001	-0.0005	-0.0007	-0.0002	-0.0001	0.0003	-0.0007	0.0005	-0.0004	0.0001	-0.0002	0.0002	0.0006	0.0026
	G	-0.0008	0.0011	-0.0002	-0.0016	-0.0020	-0.0008	-0.0006	0.0008	-0.0023	0.0016	-0.0011	0.0003	-0.0006	0.0007	0.0018	0.0074
Correlation coefficient	P	-0.0854	-0.0223	-0.0113	0.0351	0.0771	-0.0966	-0.0607	0.5030	0.0445	0.6032	0.4593	0.9994	0.0952	-0.0977	0.0148	0.0366
	G	-0.1004	-0.0233	-0.0696	0.0510	0.0663	-0.1257	-0.0453	0.5362	-0.0324	0.5932	0.4391	1.0000	0.1009	-0.2193	0.0307	0.0401

Table 2(c): Phenotypic (P) and genotypic (G) path coefficients indicating direct and indirect effects of components characters on fruit yield in 35 chilli genotypes in pooled data

Character		Plant height (cm)	Plant spread (cm ²)	No. of primary branches	Days to first flowering	Days to 50% flowering	Days to first harvest	Days to last harvest	Fruit length (cm)	Fruit diameter (cm)	No. of fruits per plant	Fruit weight (g)	Fruit yield per plot (Kg)	Ascorbic acid (mg/100g)	Chlorophyll (%)	Capsaicin (%)	Capsanthin (ASTA units)
Plant height (cm)	P	0.0010	0.0005	0.0002	0.0000	0.0000	0.0001	0.0002	-0.0002	0.0000	0.0003	-0.0001	0.0001	-0.0002	-0.0001	0.0002	0.0000
	G	-0.0080	-0.0047	-0.0016	-0.0002	-0.0003	-0.0015	-0.0015	0.0030	-0.0002	-0.0037	0.0014	-0.0013	0.0017	0.0015	-0.0025	0.0000
Plant spread (cm ²)	P	-0.0028	-0.0054	-0.0018	-0.0003	-0.0006	-0.0010	-0.0021	0.0008	0.0005	-0.0018	0.0011	-0.0008	-0.0004	-0.0005	-0.0002	-0.0004
	G	0.0056	0.0096	0.0061	0.0010	0.0008	0.0025	0.0038	-0.0026	-0.0007	0.0043	-0.0033	0.0014	0.0011	0.0010	0.0012	0.0011
No. of primary branches	P	0.0011	0.0016	0.0047	-0.0003	0.0002	0.0000	0.0009	-0.0004	0.0002	0.0008	-0.0001	0.0009	0.0002	-0.0001	-0.0001	-0.0002
	G	-0.0015	-0.0049	-0.0078	-0.0021	-0.0016	-0.0014	-0.0023	-0.0005	0.0005	-0.0023	0.0004	-0.0026	-0.0005	0.0014	-0.0003	0.0006
Days to first flowering	P	-0.0001	0.0002	-0.0002	0.0029	0.0024	0.0015	0.0011	0.0001	0.0000	-0.0005	0.0006	0.0000	0.0003	0.0001	-0.0004	-0.0005
	G	-0.0012	-0.0041	-0.0109	-0.0410	-0.0409	-0.0228	-0.0237	0.0025	-0.0014	0.0092	-0.0100	0.0013	-0.0052	-0.0052	0.0082	0.0085
Days to 50% flowering	P	-0.0002	-0.0005	-0.0002	-0.0035	-0.0042	-0.0020	-0.0014	0.0003	-0.0007	0.0010	-0.0013	0.0000	-0.0006	-0.0005	0.0010	0.0007
	G	0.0019	0.0041	0.0107	0.0522	0.0523	0.0297	0.0304	-0.0025	0.0124	-0.0182	0.0217	-0.0012	0.0101	0.0079	-0.0142	-0.0125
Days to first harvest	P	-0.0011	-0.0020	0.0000	-0.0056	-0.0051	-0.0106	-0.0066	0.0019	0.0003	0.0008	0.0008	0.0010	0.0003	-0.0009	0.0024	0.0018
	G	-0.0012	-0.0016	-0.0011	-0.0034	-0.0035	-0.0061	-0.0045	0.0023	-0.0007	0.0009	0.0010	0.0012	0.0002	-0.0014	0.0019	0.0016
Days to last harvest	P	0.0014	0.0023	0.0012	0.0023	0.0020	0.0037	0.0059	-0.0002	0.0001	0.0005	0.0001	0.0007	0.0008	-0.0003	-0.0006	-0.0003
	G	-0.0018	-0.0039	-0.0029	-0.0057	-0.0057	-0.0072	-0.0099	0.0002	-0.0008	-0.0011	0.0003	-0.0014	-0.0024	-0.0006	0.0018	0.0010
Fruit length (cm)	P	0.0004	0.0003	0.0002	0.0000	0.0001	0.0003	0.0000	-0.0017	0.0002	-0.0003	-0.0007	-0.0009	-0.0005	0.0003	-0.0001	0.0000
	G	0.0006	0.0004	-0.0001	0.0001	0.0001	0.0006	0.0000	-0.0015	0.0002	-0.0003	-0.0007	-0.0010	-0.0005	0.0004	-0.0001	0.0000
Fruit diameter (cm)	P	0.0002	-0.0003	0.0001	0.0000	0.0006	-0.0001	0.0000	-0.0003	0.0034	-0.0013	0.0017	0.0002	0.0005	0.0010	-0.0014	-0.0007
	G	-0.0001	0.0004	0.0004	-0.0002	-0.0014	-0.0007	-0.0004	0.0007	-0.0057	0.0029	-0.0036	-0.0003	-0.0010	-0.0017	0.0030	0.0015
No. of fruits per plant	P	0.0056	0.0053	0.0028	-0.0029	-0.0038	-0.0012	0.0013	0.0027	-0.0061	0.0158	-0.0053	0.0099	-0.0017	-0.0039	0.0055	0.0033
	G	0.0020	0.0019	0.0013	-0.0010	-0.0015	-0.0006	0.0005	0.0009	-0.0022	0.0043	-0.0016	0.0027	-0.0005	-0.0014	0.0017	0.0009
Fruit weight (g)	P	-0.0006	-0.0009	-0.0001	0.0009	0.0014	-0.0003	0.0001	0.0019	0.0023	-0.0015	0.0045	0.0018	0.0014	0.0000	-0.0014	-0.0007
	G	0.0021	0.0042	0.0006	-0.0030	-0.0051	0.0020	0.0004	-0.0061	-0.0078	0.0045	-0.0124	-0.0049	-0.0041	0.0002	0.0040	0.0020
Fruit yield per plot (Kg)	P	0.1326	0.1442	0.1898	-0.0164	-0.0041	-0.0920	0.1177	0.5276	0.0472	0.6178	0.4067	0.9871	0.1170	-0.1666	0.0290	0.0303
	G	0.1611	0.1471	0.3325	-0.0138	-0.0231	-0.2052	0.1410	0.6432	0.0534	0.6263	0.3976	1.0065	0.1278	-0.2361	0.0510	0.0367
Ascorbic acid (mg/100g)	P	0.0002	-0.0001	0.0000	-0.0001	-0.0002	0.0000	-0.0001	-0.0003	-0.0002	0.0001	-0.0004	-0.0001	-0.0011	0.0002	0.0003	0.0001
	G	0.0009	-0.0005	-0.0003	-0.0005	-0.0008	0.0002	-0.0010	-0.0013	-0.0007	0.0004	-0.0014	-0.0005	-0.0041	0.0007	0.0013	0.0003
Chlorophyll (%)	P	-0.0005	0.0005	-0.0001	0.0003	0.0006	0.0004	-0.0002	-0.0010	0.0015	-0.0013	0.0000	-0.0009	-0.0008	0.0053	-0.0010	0.0005
	G	0.0003	-0.0002	0.0003	-0.0002	-0.0002	-0.0003	-0.0001	0.0004	-0.0005	0.0005	0.0000	0.0004	0.0003	-0.0015	0.0003	-0.0002
Capsaicin (%)	P	-0.0005	-0.0001	0.0000	0.0004	0.0007	0.0006	0.0003	-0.0002	0.0012	-0.0010	0.0009	-0.0001	0.0009	0.0006	-0.0028	-0.0006
	G	-0.0016	-0.0006	-0.0002	0.0010	0.0014	0.0016	0.0009	-0.0003	0.0027	-0.0020	0.0017	-0.0003	0.0016	0.0011	-0.0052	-0.0012
Capsanthin (ASTA units)	P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0002
	G	0.0000	-0.0002	0.0001	0.0003	0.0004	0.0004	0.0002	0.0000	0.0004	-0.0003	0.0002	-0.0001	0.0001	-0.0002	-0.0003	-0.0015
Correlation coefficient	P	0.1366	0.1455	0.1967	-0.0224	-0.0099	-0.1005	0.1172	0.5309	0.0499	0.6294	0.4085	0.9989	0.1160	-0.1653	0.0304	0.0331
	G	0.1589	0.1472	0.3270	-0.0346	-0.0292	-0.2090	0.1337	0.6384	0.0490	0.6255	0.3913	1.0000	0.1248	-0.2340	0.0517	0.0389

Conclusion

The results obtained in this investigation revealed the occurrence of considerable positive direct effect of number of fruits per plant and fruit yield per plot on fruit yield per plant at both phenotypic and genotypic levels. Plant height, number of primary branches per plant, days to first flowering, days to last harvest, fruit diameter, fruit weight and chlorophyll content showed positive direct effect at phenotypic level and plant spread and days to 50 percent flowering showed positive direct effect at genotypic level on fresh fruit yield per plant. Thus, it can be concluded that the all these traits should be duly considered at the time of formulation of selection strategy to develop high yielding varieties in chilli.

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