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Correlation study of floral traits, yield and nutritional parameters in dolichos bean (*Lablab purpureus* L.) genotypes under Allahabad agro climatic zone

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Abstract
The present study was conducted to the estimation of correlation analysis for quantitative traits in Dolichos bean (*Lablab purpureus* L.) In the field of the department of Biological science, Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad during the crop season 2016-2017. The experiment was conducted in Randomized Block Design having thirty eight genotypes in three replications. Green pod yield per plant was significantly positive correlated with pod length, pod width, pod weight, seeds per pod, vine length, 100 seed weight, protein content, pod per inflorescence, while non-significant and positively correlated with carotenoids, moisture content, number of flower per inflorescence, chlorophyll 'a', total chlorophyll while non-significant and negative correlated with inflorescence length, days to 50% flowering, fiber content, days to first flowering, chlorophyll 'b', at genotypic and phenotypic level.

Keywords: Dolichos bean, correlation, significant, genotype.

Introduction

Dolichos bean or Hyacinth bean or Egyptian bean or Sem (*Lablab purpureus* L.) is an important legume vegetable crop throughout India and distributed in Madhya Pradesh, Uttar Pradesh, Maharastra, Chhattisgarh, Andhra Pradesh, Tamil Nadu and North Eastern states. It is known as poor's man bean (Ismunandji and Arsyad, 1990). It is commonly called as Hyacinth bean, bonavist bean, Indian bean, field bean, Egyptian bean, lablab bean, Avare in Kannada. It belongs to the family *Fabaceae*, sub family *Faboideae*, tribe *phaseoleae* and sub tribe *phaseolineae*. It is one of the most ancient crops known for its food and fodder value. Dolichos bean has chromosome number 2n=2x=22. It is grown on almost all types of soil of average fertility as in case of other beans (Nath, 1976). It cannot stand water logging condition, but can stand with drought situation.

The green pods are eaten after cooking and has very good nutritive value. The one hundred grams of edible portion contains carbohydrates: 6.7g; Protein: 3.8g; fat: 0.7g; fibre: 1.8 g; Calcium: 210mg; Magnesium: 34mg; Sodium: 55.4mg; Phosphorus: 68.0mg; Iron: 1.7mg; Potassium: 74mg; Sulphur: 40mg; Carotene: 3121 I.U.; Thiamin: 0.1 mg; Riboflavin: 0.06mg; Vitamin C: 9.0 mg and nicotinic acid: 0.7mg (Aykroyd, 1963). According to Venkatachalam *et al*. (2002) on dry weight basis, it contains 30% protein. Out of which albumin, globulin, prolamin and glutein respectively accounted for approximately 20%, 48%, 1% and 31% of the total proteins.

Dolichos bean is a perennial herbaceous plant often grown as an annual mainly grown for its young pod and green immature seeds for vegetable purpose. The dry seeds are also used for various vegetable preparations. The foliage of the crop provides hay, silage and green manure and cover crops (Bose *et al*., 1993**)**.

Dolichos bean can grown in different agro climatic conditions due to its wide adaptability. therefore, it is necessary to select variety having desired pod quality with high yielding potential. Genetic improvement of the bean depends on the nature, extent of genetic variability and also on magnitude and interrelationship of phenotypic and genotypic variation in yield and yield attributing characteristics. Thus the present study was aimed as to study mean performance and correlation among 38 genotypes and to identify suitable genotype of dolichos bean for further improvement and cultivation. (Sharma *et.al.* 2014).

Materials and Methods

The experiment was carried out at the Research Farm, Sam Higginbottom University of Agriculture, Technology & Sciences, Allahabad. The experiment was conducted in

Randomized Block Design having thirty eight genotypes in three replications. The sowing of experimental material was done on 09/08/2016 during the year 2016-2017. The seeds were sown in lines 1.5 m apart @ 10-12 kg seeds per ha. A gap of 1 m was kept in between two genotypes sown in the bed. Recommended dose of fertilizers *i.e.* 40:60:60 N:P2O5:K2O kg/ha and other cultural package of practices along with bamboo staking were adopted for better crop growth. Five competitive plants were selected at randomly tagged from each plot to record observation on various phonological traits viz. Days to days to first flowering, days to 50% flowering, inflorescence length, flower per inflorescence yield and yield attributing traits viz. pods per inflorescence, vine length, pod length, pod width, pod weight, seed per pod, 100 seed weight, green pod yield per plant, green pod yield per plot, green pod yield per hectare quality traits viz. chlorophyll content, carotenoids content, moisture content, protein content and fiber content. The data were statistically analyzed for computation of mean performance and correlation coefficients were carried out according to the method suggested by Miller *et.al.*(1958).

Result and Discussion

The analysis of variance (ANOVA) revealed significant differences between genotypes indicating presence of sufficient amount of variability in all the characters studied The data on general mean and correlation analysis.

Earliest flowering was recorded in genotypes CG-14 (45.86 days) and maximum days to flowering was recorded in genotype CG-10 (116.40). Earliest 50% flowering was recorded in genotypes CG-14 (49.53 days) and maximum days to 50% flowering was noted in CG-10 (120.06 days). Highest inflorescence length was recorded in CG-26 (27.48 cm) and minimum length of inflorescence was recorded in CG-8 (7.25 cm). Number of flowers per inflorescence was recorded maximum in Pusa sem-2 (20.40) and minimum number of flower recorded in CG- 4 &CG-18 (10.13). Maximum number of pod per inflorescence was recorded in PUSA SEM-2 (11) and minimum number of pod per inflorescence was recorded in CG-20 (5.4) Maximum vine length was recorded in CG-12 (8.15 m) and minimum vine length was recorded in CG-31(4.30 m). Maximum pod length was recorded in Pusa sem-2 (12.83 cm) and minimum pod length recorded in CG-31 (3.77 cm). Maximum pod width was recorded in CG-20 (4.15 cm) and minimum pod width recorded in CG-1(1.32 cm). Maximum pod weight was recorded in PUSA SEM-2 (11.18g) and lowest weight was recorded in CG-31 (2.35 g). Maximum seed per pod was recorded in CG-16 (6.33) and minimum seed per pod was recorded in CG-36(3.33). Maximum 100 weight was recorded in CG-16 (50.66 g) and minimum 100 seed weight was recorded in CG-18 (21.20 g). Maximum green pod yield per plant was recorded in Pusa sem-2 (2.36 kg) and minimum green pod yield per plant recorded in CG-31 (0.925kg). Maximum green pod yield per plot was recorded in Pusa sem-2 (13.84 kg) and minimum green pod yield per plant recorded in CG-31 (5.74 kg).Maximum green pod yield per hectare was recorded in check Pusa sem-2 (153.76 q) minimum green pod yield per plant recorded in CG-31 (63.77 q).Maximum chlorophyll content was recorded in genotype CG-28 whereas minimum content of Chlorophyll was recorded in CG-5. Maximm moisture content was observed in Pusa sem-2 (89.33) and minimum moisture content was observed in the genotype CG-33(80.76).Maximum fiber content was recorded in genotype CG-34(6.80) and minimum fiber content was observed in the genotype CG-5 (3.71).Maximum protein content was recorded in genotype CG-35 (25.79) minimum Protein content was observed in the genotype CG-18(18.12).

Green pod yield per plant is no-significant positively correlated with number of seed per pod (0.545), pod length (0.520), pod width (0.519), pod weight (0.478), vine length (0.451) 100 seed weight (0.351), pod formation per inflorescence (0.275), number of flower per inflorescence (0.139), chl. ‘a’ (0.065), chl. ‘b’ (0.012), total chl. (0.050), carotenoids (0.143), moisture content (0.110), protein content (0.330), while non-significant and negative correlated with inflorescence length (-0.133), fiber content (-0.074), days to first flowering (-0.069), days to 50% flowering (-0.092), at genotypic level.

Green pod yield per plant was significantly positive correlated with pod length (0.477), pod width (0.467), pod weight (0.447), seeds per pod (0.434), vine length (0.400), 100 seed weight (0.326), protein content (0.274), pod per inflorescence (0.210), while non-significant and positively correlated with carotenoids (0.136), moisture content (0.119), number of flower per inflorescence (0.114), chl. ‘a’ (0.058), total chl. (0.042) while non-significant and negative correlated with inflorescence length (-0.125), days to 50% flowering (-0.076), fiber content (-0.073) days to first flowering (-0.071), chl. ‘b’ (-0.006), at phenotypic level.

Table 1: Analysis of variance for green pod yield and its components in dolichos bean

S.N.	Characters	Mean sum of square		
		Replication	Genotype	Error
1	Days of First Flowering	6.6286*	671.16882***	1.9279
2	Days of 50% Flowering	0.9151	655.4716***	4.0862
3	Inflorescence Length (cm.)	0.7226	87.4058***	0.2940
4	Flowers/ Inflorescence	0.3916	24.1593***	0.3469
5	Pod Formations/ Inflorescence	0.0235	4.6400***	0.2253
6	Pod Length (cm.)	0.0301	12.9067***	0.0797
7	Pod Width(cm)	0.0019	0.7630***	0.0072
8	Pod Weight (g)	0.0880	9.7266***	0.1330
9	Seeds/ Pod	0.0910	1.2570***	0.1015
10	Vine Length (m)	0.0055	2.6355***	0.0728
11	Seed Index (g)	1.2135	218.0434***	0.4007
12	Green Pod Yield Per Plant(kg)	0.0017	0.2950***	0.0135
13	Green Pod Yield Per Plot(kg)	1.3822	10.2531***	0.4481
14	Pod Yield (q/ha)	170.6116	1265.5855***	55.3141
15	Chlorophyll 'a' (mg/g F. Wt.)	0.0117	0.8880***	0.0166
16	Chlorophyll 'b' (mg/g F. Wt.)	0.0020	0.11832***	0.0014
17	Total Chlorophyll (mg/g F. Wt.)	0.0131	1.6234***	0.0235
18	Total Carotenoids (mg/g F. Wt.)	0.0034	14.1711***	0.0043
19	Moisture conteent (%)	0.0643	16.6329***	1.6738
20	Fiber content/100 gm	0.0225	1.9369***	0.0187
21	Protein content (%)	0.0951	10.9072***	0.3184

Table 2: Mean performance of floral parameters of 38 Dolichos bean genotypes.

Character	Days of first flowering	Days of 50% flowering	Infloroscence length (cm)	Flower infloroscences
CG-1	90.0000	95.0000	17.3067	12.1333
CG-2	77.9333	81.6667	20.4667	13.1333
CG-3	98.8000	102.6667	9.2333	10.3333
CG-4	83.0667	86.4667	22.3200	10.1333
CG-5	93.0000	96.1333	20.7467	19.8000
CG-6	73.9333	78.1333	20.1000	11.0000
CG-7	93.8667	96.4000	10.2667	10.2667
CG-8	83.0667	86.7333	7.2533	12.3333
CG-9	103.0000	106.0667	13.2000	14.2000
CG-10	116.4000	118.3333	14.1067	16.4667
CG-11	101.9333	106.2000	26.5467	12.6000
CG-12	93.8000	98.6667	19.1467	10.2667
CG-13	73.9333	76.3333	24.5800	12.2000
CG-14	45.8667	49.5334	16.5600	11.6000
CG-15	109.9333	113.2667	16.2667	14.9333
CG-16	114.0667	116.7333	15.9867	10.5333
CG-17	97.7333	101.5333	27.4067	14.8000
CG-18	108.0000	115.1333	13.9600	10.1333
CG-19	91.9333	95.6667	14.8467	10.7333
CG-20	114.8000	115.8000	15.3467	10.2667
CG-21	72.4667	76.3333	14.7333	17.3333
CG-22	80.7333	86.2667	25.9400	14.2667
CG-23	95.0000	99.2000	14.2000	12.7333
CG-24	84.9333	88.8667	25.2667	15.0000
CG-25	103.0667	106.3333	24.2667	13.8000
CG-26	115.2000	116.7333	27.4800	16.8667
CG-27	89.0000	92.2667	13.9067	12.8000
CG-28	93.0000	97.1333	19.8800	14.2000
CG-29	78.8000	81.7333	23.1933	14.1333
CG-30	78.8667	82.9333	20.0100	10.7333
CG-31	92.0000	97.8000	25.2533	15.4667
CG-32	97.8000	102.2667	16.9600	10.8667
CG-33	103.2667	107.5333	16.1333	10.6000
CG-34	78.4000	82.6000	27.4400	14.0667
CG-35	100.3333	105.0000	20.7000	16.0000
CG-36	116.2667	120.0667	19.7267	19.6000
VRSEM 186	102.0000	105.9333	12.6000	13.2667
PUSA SEM 2	96.0667	100.2000	22.6600	20.4000
Mean	93.2175	96.9912	18.8420	13.4211
C.V.	1.4895	2.0842	2.8778	4.3885
S.E.m.	0.8016	1.1671	0.3131	0.3400
C.D. 5%	2.2589	3.2887	0.8821	0.9582

Table 3: Mean performance of yield parameters of 38 Dolichos bean genotypes.

Character	Pod formation/ Infloroscence	Pod length (cm)	Pod width(cm)	Pod weight(gm)	seeds /pod	Vine length (m)	Seed index (gm)	Green pood yield/ plant (kg)
CG-1	6.6667	9.6967	1.3267	5.7433	4.5300	5.5333	29.4333	1.4533
CG-2	7.5333	11.3433	1.9033	7.0500	5.7700	6.4667	26.2000	2.1533
CG-3	6.0667	8.5333	1.7667	6.8467	4.8467	4.9333	21.2333	1.5333
CG-4	6.2667	8.9267	2.1933	6.6633	4.6233	6.0333	21.8667	1.6500
CG-5	8.6000	8.3733	2.2400	6.9333	4.9967	5.0667	28.3667	1.7833
CG-6	6.8667	10.3567	2.2867	9.9967	5.2567	6.2333	30.4167	1.6500
CG-7	6.0667	9.0767	1.4167	6.4933	5.7000	4.3333	25.2667	1.4533
CG-8	7.3333	9.1567	1.6633	7.2000	3.9200	5.1000	31.1367	1.4800
CG-9	7.2667	10.3333	1.9933	7.8267	5.1067	5.9667	27.4333	2.0700
CG-10	10.0667	6.1033	1.6200	5.7167	4.3300	6.3667	38.0000	1.7267
CG-11	6.6667	9.0733	1.4767	6.2400	5.8467	6.6667	24.5333	1.7100
CG-12	6.5333	8.8900	1.6300	6.9500	5.1467	8.1500	29.9333	1.8233
CG-13	6.8667	9.0967	2.5100	10.4200	5.2167	5.9333	25.5667	1.8367
CG-14	6.6667	9.8000	1.8133	8.5633	5.1067	5.7000	39.0433	2.0133
CG-15	7.8000	9.9800	1.6967	6.6133	5.7000	4.9333	21.8667	1.4067
CG-16	6.2667	10.8433	1.7300	7.6267	6.3300	7.3333	50.6667	2.0667
CG-17	7.8000	9.4767	1.7067	6.8467	5.4033	4.5667	37.0000	1.7333
CG-18	6.3333	7.8667	1.4500	6.6000	4.6633	5.4000	21.2000	1.4333
CG-19	7.0667	11.7433	2.2833	6.1933	5.9967	5.8667	45.1667	2.2233
CG-20	5.4000	5.4667	4.1533	10.6633	4.8467	4.5333	23.1000	2.1933
CG-21	10.0000	11.6600	1.5600	7.5300	5.9600	6.2633	46.2333	2.3067
CG-22	7.1333	9.0767	2.0300	6.5933	4.8100	6.0600	26.6000	1.7600
CG-23	7.7333	8.6833	1.5300	7.2233	5.0700	5.1333	30.6667	1.6933
CG-24	8.2000	9.3233	2.4067	7.5767	5.0333	5.0000	22.4667	2.0600
CG-25	7.7333	8.2300	1.8533	6.7300	5.5133	6.6667	28.4667	1.8133
CG-26	8.8000	9.5167	1.8667	7.5833	4.6233	6.3333	34.1000	1.3267
CG-27	6.2667	12.6867	2.3900	10.4400	5.9600	4.9667	41.8000	1.8900
CG-28	5.7333	12.5767	2.6867	7.7167	5.2933	5.3333	33.4333	2.1433
CG-29	7.2667	9.1400	1.7167	7.4367	4.8100	4.7333	45.7333	1.4300
CG-30	6.9333	11.3400	1.7967	5.9967	5.0333	4.5000	43.0000	1.5500
CG-31	6.8000	3.7700	1.4867	2.3533	3.5500	4.3000	21.8000	0.9567
CG-32	6.7333	5.8633	1.7233	5.3567	4.9200	4.8333	24.8000	1.7933
CG-33	6.2000	9.1533	1.6300	7.8567	4.8467	4.6667	42.5000	1.6800
CG-34	7.0667	8.6500	1.8133	7.0967	5.7367	6.1333	42.3000	1.5467
CG-35	8.0667	12.4000	1.8367	10.3000	5.3333	6.7000	31.6333	1.9167
CG-36	9.2000	5.8867	1.4933	3.7333	3.3333	5.1667	32.2667	1.7867
VRSEM 186	8.4667	11.4867	2.0633	6.0900	5.3300	6.8667	39.3667	2.2733
PUSA SEM 2	11.0000	12.8300	2.4333	11.1867	5.5867	7.2833	43.9933	2.3667
Mean	7.3544	9.3792	1.9257	7.2628	5.1074	5.6857	32.3313	1.7812
C.V.	6.4542	3.0091	4.3962	5.0216	6.2382	4.7456	1.9579	6.5162
S.E.m.	0.2741	0.1629	0.0489	0.2106	0.1839	0.1558	0.3655	0.0670
C.D. 5%	0.7722	0.4592	0.1377	0.5933	0.5183	0.4390	1.0298	0.1888

Table 4: Mean performance of Biochemical parameters of 38 Dolichos bean genotypes.

Character	Chlorophyll 'a' (mg/g F. Wt.)	Chlorophyll 'b' (mg/g F. Wt.)	Total Chlorophyll (mg/g F. Wt.)	Moisture conteent (%)	Fiber content/100 gm	Protein content (%)
CG-1	1.7300	0.5267	2.2533	84.3667	5.4333	21.5800
CG-2	2.3467	0.6300	2.9767	82.3600	5.6333	24.0433
CG-3	1.6433	0.4333	2.0767	88.6000	5.7800	21.1100
CG-4	1.0300	0.2867	1.3167	83.6333	6.4867	23.1200
CG-5	0.8267	0.1900	1.0133	82.8667	3.7133	24.1833
CG-6	1.8367	0.5333	2.3700	82.2333	6.3967	22.7200
CG-7	1.8900	0.5033	2.4000	87.3333	5.8500	24.4200
CG-8	2.0633	0.5067	2.5733	82.2667	4.0933	18.6667
CG-9	2.5300	0.6300	3.1667	86.7667	4.9400	20.1433
CG-10	1.1867	0.3100	1.4933	83.6000	5.1267	21.7900
CG-11	1.9300	0.5967	2.5300	86.9667	6.4567	19.3933
CG-12	2.5733	0.8667	3.4400	84.9667	4.0400	20.4600
CG-13	2.3100	0.6267	2.9333	81.8333	4.1333	21.9500
CG-14	1.6333	0.3733	2.0067	84.5667	5.4133	23.9333
CG-15	1.9433	0.6033	2.5467	85.2667	5.6467	23.6733
CG-16	2.0933	0.6100	2.7067	84.4667	5.9333	21.9567
CG-17	2.5367	0.8200	3.3567	86.1667	5.6200	19.8400
CG-18	1.5200	0.3467	1.8633	81.1667	4.3867	18.1267
CG-19	2.2600	0.6533	2.9100	81.6333	5.4533	21.2633
CG-20	1.9367	0.5467	2.4800	82.0333	5.6867	20.3700
CG-21	1.9500	0.4667	2.4167	83.6333	4.1667	24.1767
CG-22	1.6133	0.4567	2.0700	85.5667	4.6467	24.0133
CG-23	1.5933	0.4667	2.0667	86.1333	6.0533	20.5467
CG-24	2.3800	0.6867	3.0667	84.8667	4.7400	19.4533
CG-25	2.4900	0.6833	3.1700	83.2000	4.3667	23.1900
CG-26	2.0467	0.5800	2.6300	82.3667	4.2267	22.0267
CG-27	1.0033	0.2433	1.2467	88.8333	4.1733	22.4633
CG-28	3.2500	1.0633	4.3133	83.3667	5.8800	21.0933
CG-29	1.3333	0.4067	1.7400	88.5000	4.8200	20.8533
CG-30	1.4133	0.3433	1.7567	83.6333	4.5533	18.9733
CG-31	3.1600	1.0200	4.1767	81.4000	5.1100	19.4133
CG-32	1.5267	0.3567	1.8767	81.5333	5.7067	23.3967
CG-33	2.3200	0.7100	3.0333	80.7667	5.1467	22.9833
CG-34	2.0900	0.5200	2.6133	86.3000	6.8000	22.7333
CG-35	2.3767	0.7967	3.1700	85.2667	4.7233	25.7967
CG-36	1.9800	0.7533	2.7300	83.0667	5.2700	22.1000
VRSEM 186	1.3400	0.3700	1.7067	86.9333	5.3867	22.9800
PUSA SEM 2	1.9067	0.5200	2.4233	89.2333	4.0867	24.8433
Mean	1.9367	0.5536	2.4900	84.4130	5.1600	21.9416
C.V.	6.6566	6.6877	6.1577	1.5327	2.6524	2.5718
S.E.m.	0.0744	0.0214	0.0885	0.7470	0.0790	0.3258
C.D. 5%	0.2097	0.0602	0.2494	2.1048	0.2227	0.9181

Table 5: Genotypic correlation of coefficient of pod yield and its contributing traits of dolichos bean

S.N.	Character	Days of first flowering	Days of 50% flowering	Inflorescence length (cm)	Flower inflorescences	Pod formation/ Inflorescence	Pod length (cm)	Pod width(cm)	Pod weight (gm)	seeds /pod	Vine length (m)	Seed index (gm)	Chlorophyll 'a' (mg/g F. Wt.)	Chlorophyll 'b' (mg/g F. Wt.)	Total Chlorophyll (mg/g F. Wt.)	Moisture conteent (%)	Fiber content/ 100 gm	Protein content (%)	Green pood yield/ plant (kg)
1	Days of first flowering	1.000	1.002	-0.131	0.160	0.130	-0.283	0.006	-0.194	-0.151	0.045	-0.135	0.076	0.180	0.104	-0.048	0.020	-0.157	-0.069
2	Days of 50% flowering		1.000	-0.126	0.153	0.119	-0.288	-0.026	-0.221	-0.160	0.048	-0.149	0.088	0.195	0.118	-0.054	0.019	-0.170	-0.092
3	Infloroscence length (cm)			1.000	0.359	0.163	-0.079	0.069	-0.022	0.007	0.170	-0.038	0.262	0.320	0.279	-0.043	0.008	0.047	-0.133
4	Flower infloroscences				1.000	0.844	0.033	-0.044	-0.038	-0.192	0.110	0.155	0.038	0.101	0.055	0.164	-0.393	0.310	0.139
5	Pod formation/ Infloroscence					1.000	0.122	-0.176	-0.011	-0.081	0.324	0.301	-0.127	-0.116	-0.126	0.143	-0.407	0.325	0.275
6	Pod length (cm)						1.000	0.089	0.524	0.693	0.368	0.486	0.016	-0.026	0.006	0.388	-0.122	0.308	0.520
7	Pod width(cm)							1.000	0.602	0.152	-0.054	-0.078	0.027	-0.002	0.019	-0.097	-0.020	0.031	0.519
8	Pod weight(gm)								1.000	0.476	0.235	0.193	-0.064	-0.132	-0.083	0.237	-0.184	0.289	0.478
9	seeds /pod									1.000	0.380	0.369	0.021	-0.077	-0.004	0.377	0.170	0.354	0.545
10	Vine length (m)										1.000	0.233	0.095	0.085	0.093	0.137	-0.098	0.298	0.451
11	Seed index (gm)											1.000	-0.100	-0.103	-0.102	0.202	-0.111	0.166	0.351
12	Chlorophyll 'a' (mg/g F. Wt.)												1.000	0.957	0.997	-0.251	0.047	-0.205	0.065
13	Chlorophyll 'b' (mg/g F. Wt.)													1.000	0.977	-0.204	0.087	-0.192	0.012
14	Total Chlorophyll (mg/g F. Wt.)														1.000	-0.239	0.059	-0.203	0.050
15	Moisture conteent (%)															1.000	0.095	0.156	0.110
16	Fiber content/100 gm																1.000	-0.003	-0.074
17	Protein content (%)																	1.000	0.330
18	Green pood yield/ plant (kg)																		1.000

Table 6: Phenotypic correlation of coefficient of pod yield and its contributing traits of dolichos bean.

S.N.	Character	Days of first flowering	Days of 50% flowering	Inflorescence length (cm)	Flower inflorescences	Pod formation / Inflorescence	Pod length (cm)	Pod width(cm)	Pod weight(gm)	seeds /pod	Vine length (m)	Seed index (gm)	Chlorophyll 'a' (mg/g F. Wt.)	Chlorophyll 'b' (mg/g F. Wt.)	Total Chlorophyll (mg/g F. Wt.)	Moisture conteent (%)	Fiber content/ 100 gm	Protein content (%)	Green pood yield/ plant (kg)
1	Days of first flowering	1.00	0.99**	-0.13**	0.15**	0.12	-0.28**	0.01	-0.19*	-0.13	0.04	-0.13	0.07	0.18	0.10	-0.04	0.02	-0.15	-0.07
2	Days of 50% flowering		1.00	-0.13	0.15	0.12	-0.28**	-0.03	-0.22*	-0.15	0.04	-0.15	0.08	0.19*	0.11	-0.05	0.02	-0.17	-0.08
3	Infloroscence length (cm)			1.00	0.35**	0.15	-0.08	0.07	-0.02	0.01	0.17	-0.04	0.25**	0.31**	0.27**	-0.03	0.01	0.04	-0.13
4	Flower infloroscences				1.00	0.80**	0.03	-0.04	-0.04	-0.14	0.11	0.15	0.04	0.11	0.05	0.13	-0.38**	0.30**	0.11
5	Pod formation/ Infloroscence					1.00	0.12	-0.15	-0.02	-0.04	0.30**	0.28**	-0.13	-0.10	-0.13	0.13	-0.37**	0.29**	0.21*
6	Pod length (cm)						1.00	0.09**	0.51**	0.62**	0.35**	0.48**	0.02	-0.02	0.01	0.34**	-0.12	0.29**	0.48**
7	Pod width(cm)							1.00	0.58**	0.13	-0.04	-0.07	0.03	0.00	0.02	-0.08	-0.02	0.03	0.47**
8	Pod weight(gm)								1.00	0.41**	0.23*	0.19*	-0.05	-0.12	-0.07	0.20*	-0.18	0.28**	0.45**
9	seeds /pod									1.00	0.33**	0.33**	0.03	-0.06	0.00	0.31**	0.16*	0.32**	0.43**
10	Vine length (m)										1.00	0.22*	0.09	0.08	0.08	0.10	-0.09	0.27**	0.40**
11	Seed index (gm)											1.00	-0.10	-0.10	-0.10	0.17	-0.11	0.16	0.33**
12	Chlorophyll 'a' (mg/g F. Wt.)												1.00	0.94**	1.00**	-0.21*	0.05	-0.18	0.06
13	Chlorophyll 'b' (mg/g F. Wt.)													1.00	0.96**	-0.18	0.09	-0.16	-0.01
14	Total Chlorophyll (mg/g F. Wt.)														1.00	-0.20*	0.06	-0.17	0.04
15	Moisture conteent (%)															1.00	0.07	0.10	0.12
16	Fiber content/100 gm																1.00	0.01	-0.07
17	Protein content (%)																	1.00	0.27**
18	Green pood yield/ plant (kg)																		1.00

Conclusion

On the basis of mean performance of all thirty eight genotype on their yield contributing character for Allahabad Agro climatic condition mean performance of PUSA SEM-2 was superior among all the genotypes followed by CG-21.

correlated coefficient analysis revealed that pod length, pod width, pod weight, number of seeds per pod, vine length, 100 seed weight, protein content, number of pods per inflorescence, exhibited the positively correlated with green pod yield per plant at both genotypic and phenotypic level. Hence direct selection for these traits may lead to the development of high green pod yield in dolichos bean.

Reference

1. Das, *et al*. Morphological, growth and biochemical features of *Dipogon lignosus* (L.) Verdc. Bean, J. Bangladesh Agril. Univ. 2012; 10(1):43-48.
2. Kamatchi Kala B, Tresina Soris P, Mohan VR, Vadivel V. Nutrient and Chemical Evaluation of Raw Seeds of Five Varieties of Lablab purpureus (L.) Sweet. Advances in Bio Research. 2010; 1(1):44-53.
3. Kathirvel P, Kumudha P. Comparative Analysis and Nutritional Assessment of Raw Seeds of Crotalaria Species, International journal of plant, animal and Environmental science, 2012; 2(1).
4. Magalingam V, Yassin M, Kumar SR. Genetic diversity in Dolichos bean Canadian Journal of Plant Breeding. 2013; 1:80-86.
5. Parmar, *et al*. Genetic Variability Studies for Morphological and Yield Traits in Dolichos Bean (*Lablab purpureus* L.) World Journal of Agricultural Sciences. 2013; 9(1):24-28.
6. Ravinaik, *et al*. Evaluation of dolichos genotypes (*Dolichos lablab* L.) under north eastern dry zone of Karnataka, The Asian Journal of Horticulture. 2015; 10(1):49-52.
7. Sarma, *et al*. Evaluation of Country Bean (*Dolichos lablab*) Land Races of North East India For Nutritive Values and Characterization Through Seed Protein Profiling, Legume Res. 2010; 33(3):84-189.
8. Shaahu DT, Kaankuka FG, Okpanachi U. Proximate, Amino Acid, Anti-Nutritional Factor And Mineral Composition Of Different Varieties Of Raw Lablab Purpureus Seeds, International Journal of Scientific & Technology Research. 2015; 4(04).
9. Singh PK, Rai N, Lal H, Bhardwaj DR, Singh R, Singh AP. Correlation, path and cluster analysis in hyacinth bean (Lablab purpureus L. Sweet). Journal of Agricultural Technology. 2011; 7(4):1117-1124.
10. Singh S, Singh PK, Singh DR, Pandey VB, Srivastava RC. Genetic variability and character association study in dolichos bean. Indian J. Hort. 2015; 72(3):343-346.
11. Zinzala VN, Narwade AV, Ahir NB, Karmakar N, Sree Ganesh S, Kudach AN. Effect of Water Regimes on Physiological Parameters of Indian Bean (Lablab purpureus L.). International Journal of Tropical Agriculture. 2016; 34(2):392-398.