RESEARCH PAPER International Journal of Agricultural Sciences, January to June, 2010, Vol. 6 Issue 1 : 305-310

Character association and path coefficient analysis in F_2 generation of groundnut (*Arachis hypogaea* L.)

R.D. RAUT, L.K. DHADUK[1]*, AND J.H. VACHHANI[1]
Department of Agricultural Botany, Junagadh Agricultural University, JUNAGADH (GUJARAT), INDIA

ABSTRACT

The correlation coefficients among eleven yield and yield contributing traits with their path effects towards pod yield were investigated in F_2 generation for six crosses of groundnut during *Kharif*-2007. The correlation coefficients of pod yield per plant were found positive and highly significant with kernel yield per plant, number of mature pods per plant and shelling out-turn. Kernel yield per plant had the highest positive direct effect on pod yield per plant followed by mature pods per plant. While, shelling out-turn showed high negative direct effect towards pod yield per plant but it expressed high indirect effect via kernel yield per plant. Thus, on the basis of correlations and direct and indirect effects, kernel yield per plant, number of mature pods per plant and shelling out-turn were proved to be the outstanding characters influencing pod yield in groundnut and need to be given importance in selection to achieve higher pod yield.

Key words : Character association, Path coefficient analysis, Groundnut

INTRODUCTION

Groundnut (*Arachis hypogaea* L.) is the important oilseed crop of the India. Though, it leads in area and production in the world, its productivity is low as compared to other countries. Yield is a complex and polygenically controlled highly environmental influenced trait governed by the interaction of many variables and selection if based merely on yield is not effective. Correlation analysis is a biometrical technique to find out the nature and degree of association between various physico-chemical traits including yield, while path analysis splits the correlation coefficient into direct and indirect effect so as to measure the relative contribution of each variable towards yield. Hence, keeping the above aspects in mind, efforts were made to establish interrelationship among various yield contributing traits and also their contribution towards pod yield in the segregating population of groundnut. This will be facilitating the breeder to design appropriate selection strategies to increase pod yield in groundnut.

MATERIALS AND METHODS

The experimental material for the present study involved F_2 generation of six crosses derived from crossing among nine parents. The F_2 generation was sown with their parents in a Randomized Block Design with three replications at the Main Oilseeds Research Station, Junagadh Agricultural University, Junagadh, during *Kharif,* 2007. Each F_2 generation was planted in 10 rows of 4 m length and parent was planted in a single row of same length at the spacing of 60 cm between rows and 15 cm between the plants. Observations on 11 characters (Table 1) were recorded on randomly selected five plants from each parent and fifty plants from each F_2 generation per replication. The correlation coefficients were calculated as per Al-Jibouri *et al*. (1958). The path analysis was done as per the method suggested by Dewey and Lu (1959).

RESULTS AND DISCUSSION

In F_2 segregating generation, the phenotypic association of pod yield per plant was found positive and highly significant with number of mature pods per plant, kernel yield per plant and shelling out-turn (Table 1). These characters can be considered as criteria for selection for higher pod yield as they were mutually and directly associated with pod yield per plant except mature pods per plant and shelling out-turn negatively associated with each other. Sharma and Gupta (2008) observed positive and highly significant correlations of number of pods per plant and kernel yield per plant towards pod yield per plant. Mane *et al*. (2008) and Parameshwarappa *et al*. (2008) reported similar results for shelling out-turn whereas, Savaliya *et al*. (2008) for number of pods per plant and John *et al*. (2007) for kernel yield per plant. Days to flowering had positive and significant association with pod yield per plant in cross-2 and cross-3 only, indicating association of genotypes having longer duration of flowering was essential in increasing the pod yield per plant. Parmeshwarappa *et al*. (2008) and Ladole *et al*. (2009) also observed same correlation of days to flowering

*** Author for correspondence.**
[1] Main Oilseeds Research Station, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

Table 1: Correlation coefficients between different characters for six crosses of F_2 generation of groundnut

Correlated Trait/ Character	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9	Ch10	Ch11
Days to first flowering (Ch1) with										
Cross 1	0.087	0.069	0.170*	0.108	-0.156	-0.099	0.045	0.113	-0.028	-0.069
Cross 2	0.312**	-0.031	0.022	-0.062	0.121	0.211**	0.058	-0.026	0.048	0.201*
Cross 3	-0.180*	-0.105	0.080	0.155	0.210**	0.138	-0.101	0.021	-0.051	0.177*
Cross 4	-0.143	-0.054	0.066	-0.078	-0.131	-0.055	-0.027	-0.089	-0.246**	-0.043
Cross 5	0.003	0.206*	-0.027	-0.014	0.017	-0.026	-0.110	0.072	0.204*	-0.006
Cross 6	0.334**	0.065	-0.009	-0.021	0.011	0.055	0.046	-0.131	-0.085	0.036
Days to maturity (Ch2) with										
Cross 1	0.087	0.106	-0.057	-0.059	0.100	0.079	-0.038	0.121	-0.107	0.144
Cross 2	0.312**	-0.039	0.021	-0.038	-0.102	-0.016	-0.015	-0.095	0.13	-0.007
Cross 3	-0.180**	-0.051	-0.158	0.022	0.083	0.050	0.148	-0.075	-0.127	0.002
Cross 4	-0.143	-0.066	0.033	0.092	0.097	0.038	-0.209*	0.365**	0.005	0.083
Cross 5	0.003	-0.094	-0.114	-0.144	-0.005	-0.124	0.239**	-0.131	-0.089	-0.168*
Cross 6	0.334**	0.135	0.034	-0.033	0.151	0.055	0.034	-0.120	-0.060	0.051
Number of primary branches per plant (Ch3) with										
Cross 1	0.069	0.106	0.089	-0.262**	0.201*	0.054	0.137	0.073	-0.101	0.018
Cross 2	-0.031	-0.039	0.045	0.000	0.219**	0.033	0.071	0.040	0.130	0.030
Cross 3	-0.105	-0.051	-0.109	-0.078	-0.059	0.007	0.206*	-0.030	-0.012	-0.046
Cross 4	-0.054	-0.066	0.183*	0.022	0.213**	0.006	0.046	-0.078	-0.077	-0.006
Cross 5	0.206*	-0.094	0.159	-0.091	0.031	-0.068	-0.110	0.048	-0.017	-0.045
Cross 6	0.065	0.135	0.114	0.143	0.085	0.119	0.148	0.153	0.005	0.061
Plant height (cm) (Ch4) with										
Cross 1	0.170*	-0.057	0.089	0.226**	0.145	0.102	-0.014	-0.047	0.195*	0.049
Cross 2	0.022	0.021	0.045	-0.104	-0.033	0.006	-0.038	0.130	0.107	0.015
Cross 3	0.080	-0.158	-0.109	0.072	0.060	0.052	-0.154	0.090	0.073	0.116
Cross 4	0.066	0.033	0.183*	0.225**	0.043	0.109	0.078	-0.052	-0.003	0.094
Cross 5	-0.027	-0.114	0.159	0.025	-0.025	0.057	-0.021	0.085	0.099	0.051
Cross 6	-0.009	0.034	0.114	-0.032	-0.103	0.092	-0.009	0.116	0.100	0.103
Number of mature pods per plant (Ch5) with										
Cross 1	0.108	-0.059	-0.262**	0.226**	-0.061	0.522**	-0.055	-0.001	0.173*	0.477**
Cross 2	-0.062	-0.038	0.000	-0.104	0.108	0.336**	-0.008	-0.016	-0.103	0.368**
Cross 3	0.155	0.022	-0.078	0.072	0.098	0.872**	-0.062	0.100	-0.080	0.903**
Cross 4	-0.078	0.092	0.022	0.225**	0.075	0.913**	-0.087	0.068	0.018	0.940**
Cross 5	-0.014	-0.144	-0.091	0.025	0.053	0.494**	-0.084	-0.052	0.029	0.554**
Cross 6	-0.021	-0.033	0.143	-0.032	-0.022	0.499**	-0.019	0.083	-0.193*	0.537**
Number of immature pods per plant (Ch6) with										
Cross 1	-0.156	0.100	0.201*	0.145	-0.061	0.048	-0.087	-0.028	-0.048	0.040
Cross 2	0.121	-0.102	0.219**	-0.033	0.108	-0.009	-0.069	-0.039	0.002	-0.004
Cross 3	0.210**	0.083	-0.059	0.060	0.098	0.098	-0.112	-0.034	0.014	0.135
Cross 4	-0.131	0.097	0.213**	0.043	0.075	0.107	-0.036	0.065	0.002	0.123
Cross 5	0.017	-0.005	0.031	-0.025	0.053	0.030	-0.030	0.076	0.042	0.042
Cross 6	0.011	0.151	0.085	-0.103	-0.022	0.070	-0.038	-0.036	-0.082	0.085

Table 1 contd.…..

Contd…Table 1

Correlated Trait/ Character	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9	Ch10	Ch11
Kernel yield per plant (Ch7) with										
Cross 1	-0.099	0.079	0.054	0.102	0.522**	0.048	0.224**	0.031	-0.079	0.677**
Cross 2	0.211**	-0.016	0.033	0.006	0.336**	-0.009	0.343**	0.128	0.052	0.967**
Cross 3	0.138	0.050	0.007	0.052	0.872**	0.098	0.216**	0.072	-0.033	0.941**
Cross 4	-0.055	0.038	0.006	0.109	0.913**	0.107	0.105	0.007	0.007	0.968**
Cross 5	-0.026	-0.124	-0.068	0.057	0.494**	0.030	0.467**	0.102	-0.075	0.978**
Cross 6	0.055	0.055	0.119	0.092	0.499**	0.070	0.313**	-0.067	-0.028	0.895**
Shelling out-turn (%) (Ch8) with										
Cross 1	0.045	-0.038	0.137	-0.014	-0.055	-0.087	0.224**	-0.011	0.011	0.177*
Cross 2	0.058	-0.015	0.071	-0.038	-0.008	-0.069	0.343**	0.067	0.060	0.213**
Cross 3	-0.101	0.148	0.206*	-0.154	-0.062	-0.112	0.216**	0.077	0.075	0.165*
Cross 4	-0.027	-0.209*	0.046	0.078	-0.087	-0.036	0.105	-0.282**	0.019	0.199*
Cross 5	-0.110	0.239**	-0.110	-0.021	-0.084	-0.030	0.467**	0.024	-0.219**	0.302**
Cross 6	0.046	0.034	0.148	-0.009	-0.019	-0.038	0.313**	-0.034	0.070	0.197*
Oil content (%) (Ch9) with										
Cross 1	0.113	0.121	0.073	-0.047	-0.001	-0.028	0.031	-0.011	0.045	0.009
Cross 2	-0.026	-0.095	0.040	0.130	-0.016	-0.039	0.128	0.067	0.080	0.127
Cross 3	0.021	-0.075	-0.030	0.090	0.100	-0.034	0.072	0.077	-0.180*	0.056
Cross 4	-0.089	.365**	-0.078	-0.052	0.068	0.065	0.007	-0.282**	0.094	0.074
Cross 5	0.072	-0.131	0.048	0.085	-0.052	0.076	0.102	0.024	-0.380**	0.122
Cross 6	-0.131	-0.120	0.153	0.116	0.083	-0.036	-0.067	-0.034	0.131	-0.036
Protein content (%) (Ch10) with										
Cross 1	-0.028	-0.107	-0.101	0.195*	0.173*	-0.048	-0.079	0.011	0.045	-0.106
Cross 2	0.048	0.130	0.130	0.107	-0.103	0.002	0.052	0.060	0.080	0.044
Cross 3	-0.051	-0.127	-0.012	0.073	-0.080	0.014	-0.033	0.075	-0.180*	-0.059
Cross 4	-0.246**	0.005	-0.077	-0.003	0.018	0.002	0.007	0.019	0.094	-0.005
Cross 5	0.204*	-0.089	-0.017	0.099	0.029	0.042	-0.075	-0.219**	-0.380**	-0.036
Cross 6	-0.085	-0.060	0.005	0.100	-0.193*	-0.082	-0.028	0.070	0.131	-0.070

* and ** indicates significance of values at P=0.05 and 0.01 levels, respectively Ch11 = Pod yield per plant
Cross 1 = AH-8254 (NRCG-6806) x J-11 Cross 2 = Virginia Improved (NRCG-6935) x JL-24
Cross 3 = US-14 (NRCG-9356) x GG-5 Cross 4 = PI-339974 (NRCG-6408) x J-11
Cross 5 = RCM-520B (NRCG-11698) x JL-24 Cross 6 = PELOTAS-B (NRCG-10763) x GG-5

with pod yield per plant. Days to maturity had negative correlation with pod yield per plant in cross-4 and cross-5 only. This is in conformation with the results of Sharma and Gupta (2008). Remaining characters exhibited their positive or negative and negligible association with pod yield per plant. Considering interrelationship between characters, number of primary branches per plant had positive and significant association with immature pods per plant in the cross-1, cross-2 and cross-4 indicating it was undesirable for plant breeder and should be break-down for enhancing pod yield.

In the present investigation, path coefficient analysis revealed that kernel yield per plant had the highest positive direct effect on pod yield followed by mature pods per plant (Table 2). These results are in accordance with John *et al*. (2007), Sharma and Gupta (2008) and Sharma and Dashora (2009). Shelling out-turn was found to be an important yield component as it had shown positive and significant correlation but high negative direct effect towards pod yield per plant in all the crosses. Sharma and Gupta (2008) and Sharma and Dashora (2009) also reported similar results. While, Mane *et al*. (2008) and Kadam *et al*. (2009) reported high positive direct effect of shelling out-turn. This character showed high indirect effect on pod yield per plant via kernel yield per plant. Number of mature pods per plant had shown positive and significant correlation with pod yield per plant mainly due to direct effect as well as via kernel yield per plant for all

Table 2 : Direct and indirect effects of different characters towards pod yield per plant for six crosses of F_2 generation of groundnut

Correlated Trait/ Character	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9	Ch10	'r'
Days to first flowering (Ch1) with											
Cross 1	-0.014	0.007	0.005	-0.007	0.017	0.005	-0.065	-0.015	-0.003	0.001	-0.069
Cross 2	-0.001	0.003	0.000	0.000	-0.002	-0.001	0.211	-0.008	0.000	0.000	0.201*
Cross 3	0.005	-0.001	-0.002	0.001	0.002	0.000	0.138	0.032	0.000	0.000	0.177*
Cross 4	0.012	0.001	0.000	-0.001	-0.012	-0.002	-0.047	0.005	0.000	0.002	-0.043
Cross 5	-0.003	0.000	0.002	0.000	0.000	0.000	-0.028	0.022	0.002	-0.001	-0.006
Cross 6	-0.002	0.004	0.000	0.000	0.000	0.000	0.056	-0.020	-0.003	0.001	0.036
Days to maturity (Ch2) with											
Cross 1	-0.001	0.081	0.007	0.002	-0.009	-0.003	0.052	0.012	-0.003	0.006	0.144
Cross 2	0.000	0.009	0.000	0.000	-0.001	0.001	-0.016	0.002	-0.001	0.000	-0.007
Cross 3	-0.001	0.004	-0.001	-0.002	0.000	0.000	0.050	-0.048	-0.001	0.000	0.002
Cross 4	-0.002	-0.004	0.000	-0.001	0.014	0.002	0.032	0.040	0.002	0.000	0.083
Cross 5	0.000	0.015	-0.001	0.002	-0.002	0.000	-0.131	-0.048	-0.003	0.001	-0.168*
Cross 6	-0.001	0.013	0.000	0.000	0.000	-0.001	0.057	-0.015	-0.002	0.001	0.051
Number of primary branches per plant (Ch3) with											
Cross 1	-0.001	0.009	0.067	-0.004	-0.041	-0.006	0.035	-0.045	-0.002	0.005	0.018
Cross 2	0.000	0.000	0.008	0.000	0.000	-0.002	0.033	-0.009	0.000	0.000	0.030
Cross 3	-0.001	0.000	0.017	-0.002	-0.001	0.000	0.007	-0.066	0.000	0.000	-0.046
Cross 4	-0.001	0.000	-0.006	-0.003	0.003	0.004	0.005	-0.009	0.000	0.001	-0.006
Cross 5	-0.001	-0.001	0.010	-0.003	-0.002	0.000	-0.072	0.022	0.001	0.000	-0.045
Cross 6	0.000	0.002	-0.003	0.000	0.002	0.000	0.122	-0.065	0.003	0.000	0.061
Plant height (cm) (Ch4) with											
Cross 1	-0.002	-0.005	0.006	-0.043	0.035	-0.005	0.067	0.005	0.001	-0.010	0.049
Cross 2	0.000	0.000	0.000	0.006	-0.004	0.000	0.006	0.005	0.001	0.000	0.015
Cross 3	0.000	-0.001	-0.002	0.015	0.001	0.000	0.052	0.049	0.001	0.000	0.116
Cross 4	0.001	0.000	-0.001	-0.018	0.034	0.001	0.093	-0.015	0.000	0.000	0.094
Cross 5	0.000	-0.002	0.002	-0.016	0.000	0.000	0.061	0.004	0.002	-0.001	0.051
Cross 6	0.000	0.000	0.000	0.004	0.000	0.000	0.094	0.004	0.002	-0.001	0.103
Number of mature pods per plant (Ch5) with											
Cross 1	-0.001	-0.005	-0.018	-0.010	0.156	0.002	0.344	0.018	0.000	-0.009	0.477**
Cross 2	0.000	0.000	0.000	-0.001	0.034	-0.001	0.336	0.001	0.000	0.000	0.368**
Cross 3	0.001	0.000	-0.001	0.001	0.011	0.000	0.871	0.020	0.001	0.000	0.903**
Cross 4	-0.001	0.000	0.000	-0.004	0.150	0.001	0.778	0.017	0.000	0.000	0.940**
Cross 5	0.000	-0.002	-0.001	0.000	0.017	0.000	0.525	0.017	-0.001	0.000	0.554**
Cross 6	0.000	0.000	0.000	0.000	0.014	0.000	0.512	0.008	0.002	0.002	0.537**
Number of immature pods per plant (Ch6) with											
Cross 1	0.002	0.008	0.014	-0.006	-0.009	-0.032	0.032	0.028	0.001	0.003	0.040
Cross 2	0.000	-0.001	0.002	0.000	0.004	-0.009	-0.009	0.009	0.000	0.000	-0.004
Cross 3	0.001	0.000	-0.001	0.001	0.001	-0.001	0.098	0.036	0.000	0.000	0.135
Cross 4	-0.002	0.000	-0.001	-0.001	0.011	0.017	0.092	0.007	0.000	0.000	0.123
Cross 5	0.000	0.000	0.000	0.000	0.001	0.001	0.032	0.006	0.002	0.000	0.042
Cross 6	0.000	0.002	0.000	0.000	0.000	-0.005	0.072	0.017	-0.001	0.001	0.085

Table 2 Contd.....

Contd.…Table 2

Correlated Trait/ Character	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9	Ch10	'r'
Kernel yield per plant (g) (Ch7) with											
Cross 1	0.001	0.006	0.004	-0.004	0.081	-0.002	0.660	-0.073	-0.001	0.004	0.677**
Cross 2	0.000	0.000	0.000	0.000	0.011	0.000	0.999	-0.045	0.001	0.000	0.967**
Cross 3	0.001	0.000	0.000	0.001	0.009	0.000	0.999	-0.069	0.001	0.000	0.941**
Cross 4	-0.001	0.000	0.000	-0.002	0.137	0.002	0.852	-0.020	0.000	0.000	0.968**
Cross 5	0.000	-0.002	-0.001	-0.001	0.008	0.000	1.063	-0.093	0.003	0.000	0.978**
Cross 6	0.000	0.001	0.000	0.000	0.007	0.000	1.025	-0.136	-0.001	0.000	0.895**
Shelling out-turn (%) (Ch8) with											
Cross 1	-0.001	-0.003	0.009	0.001	-0.009	0.003	0.148	-0.325	0.000	-0.001	0.177*
Cross 2	0.000	0.000	0.001	0.000	0.000	0.001	0.343	-0.131	0.000	0.000	0.213**
Cross 3	-0.001	0.001	0.003	-0.002	-0.001	0.000	0.215	-0.322	0.001	0.000	0.165*
Cross 4	0.000	0.001	0.000	-0.001	-0.013	-0.001	0.089	-0.191	-0.001	0.000	0.199*
Cross 5	0.000	0.004	-0.001	0.000	-0.001	0.000	0.497	-0.199	0.001	0.001	0.302**
Cross 6	0.000	0.000	0.000	0.000	0.000	0.000	0.320	-0.435	-0.001	-0.001	0.197*
Oil content (%) (Ch9) with											
Cross 1	-0.002	0.010	0.005	0.002	0.000	0.001	0.020	0.003	-0.028	-0.002	0.009
Cross 2	0.000	-0.001	0.000	0.001	-0.001	0.000	0.128	-0.009	0.007	0.000	0.127
Cross 3	0.000	0.000	-0.001	0.001	0.001	0.000	0.072	-0.025	0.007	0.000	0.056
Cross 4	-0.001	-0.001	0.000	0.001	0.010	0.001	0.006	0.054	0.005	-0.001	0.074
Cross 5	0.000	-0.002	0.001	-0.001	-0.001	0.000	0.108	-0.005	0.025	-0.002	0.122
Cross 6	0.000	-0.002	0.000	0.000	0.001	0.000	-0.069	0.015	0.019	-0.002	-0.036
Protein content (%) (Ch10) with											
Cross 1	0.000	-0.009	-0.007	-0.008	0.027	0.002	-0.052	-0.003	-0.001	-0.054	-0.106
Cross 2	0.000	0.001	0.001	0.001	-0.003	0.000	0.052	-0.008	0.001	0.000	0.044
Cross 3	0.000	-0.001	0.000	0.001	-0.001	0.000	-0.033	-0.024	-0.001	0.001	-0.059
Cross 4	-0.003	0.000	0.000	0.000	0.003	0.000	0.006	-0.004	0.000	-0.008	-0.005
Cross 5	-0.001	-0.001	0.000	-0.002	0.000	0.000	-0.080	0.044	0.010	-0.006	-0.036
Cross 6	0.000	-0.001	0.000	0.000	-0.003	0.000	-0.028	-0.030	0.003	-0.012	-0.070

* and ** indicates significance of values at P=0.05 and 0.01 levels, respectively 'r' = Correlation coefficient with pod yield per plant
Cross 1 = AH-8254 (NRCG-6806) x J-11 Cross 2 = Virginia Improved (NRCG-6935) x JL-24
Cross 3 = US-14 (NRCG-9356) x GG-5 Cross 4 = PI-339974 (NRCG-6408) x J-11
Cross 5 = RCM-520B (NRCG-11698) x JL-24 Cross 6 = PELOTAS-B (NRCG-10763) x GG-5

the crosses. Path analysis had also revealed that among the pod yield attributes, the mutual relationship of number of mature pods per plant and kernel yield per plant had resulted in high and positive effect with pod yield per plant. The residual effects ranged from 0.10 to 0.64 among the crosses studied, which indicated that there may be some important characters that could not be utilized in present study. Hence, other remaining characters may also be incorporated before making any final selection.

When correlation and direct as well as indirect positive contribution were considered, kernel yield per plant, number of mature pods per plant and shelling out-turn were proved to be the outstanding characters and need to be given importance in selection to achieve higher pod yield in groundnut.

REFERENCES

Al-Jibouri, H. A., Miller, P. A. and Robinson, H. F. (1958). Genotypic and environmental variances in upland cotton cross of interspecific origin. *Agron. J.*, **50**: 633-635.

Dewey, D. R. and Lu, K. H. (1959). Correlation and path analysis of component of created wheat grass seed production. *Agron. J.*, **51**: 513-518.

John, K., Vasanthi, R. P. and Venkateswarlu, O. (2007). Variability and correlation studies for pod yield and its attributes in F_2 generation of six Virginia x Spanish crosses of groundnut (*Arachis hypogaea* L.). *Legume Res*., **30**(4):292-296.

Kadam, P. S., Desai, D. T., Chinchane, V. N. and Sharma, V. (2009). Correlation and path analysis in groundnut, (*Arachis hypogaea* L.) *J. Oilseeds Res*., **26**(Special Issue): 63-65.

Ladole, M. Y., Wakode, M. M. and Deshmukh, S. N. (2009). Genetic variability and character association studies for yield and yield contributing traits in groundnut, (*Arachis hypogaea* L.) *J. Oilseeds Res*., **26**(Special Issue): 123-125.

Mane, P. S., Lad, D. B. and Jagtap, P. K. (2008). Correlation and path coefficient analysis in summer bunch groundnut. *J. Maharashtra agric. Univ.*, **33**(2): 174-176.

Parameshwarappa, K. G., Mahabasari, T. A. and Lingaraja, B. S. (2008). Analysis of correlation and path effect among yield attributing traits in two crosses of large seeded groundnut (*Arachis hypogaea* L.). *J. Oilseeds Res*., **25**(1): 4-7.

Savaliya, J. J., Pansuriya, A. G., Sodavadiya, P. R. and Leva, R. L. (2008). Character association study in interspecific and intraspecific hybrids derivatives of groundnut (*Arachis hypogaea* L.) under high dose of fertilizers. *Internat. J. Bioscience Reporter*, **6**(2):217-221.

Sharma, L. K. and Gupta, S. C. (2008). Nature and magnitude of association of pod yield with different morphological character in parents and hybrids of groundnut (*Arachis hypogaea* L.). *Nantl. J. Pl. Improv.*, **10**(2): 129-132.

Sharma, M. and Dashora, A. (2009). Character association and path analysis in groundnut (*Arachis hypogaea* L.). *J. Oilseeds Res*., **26**(Special Issue): 614-616.

Received : September, 2009; Accepted : December, 2009