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Effect of different fertilizer levels and plant densities on agro-morphological characteristics and yield attributes of hybrid and synthetic cauliflower

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ABSTRACT : Field experiments were carried out to ascertain the effect of different levels of fertilizers and plant densities on agro-morphological characteristics and yield attributes of hybrid and synthetic cauliflower during 2005-06 and 2006-07 at the Bihar Agricultural College, Sabour, Bhagalpur, Bihar taking variety Pusa Hybrid-2 and Pusa Synthetic. The variety Pusa Hybrid-2 was found to be superior over Pusa Synthetic in terms of the curd diameter, net curd weight, marketable curds weight and total calculated marketable yield per hectare. All the growth parameters increased significantly with successive increments in the doses of fertilizers (NPK) levels only up to F_3-N_{160} P_{120} K_{100} level. Further increase in fertilizer dose did not bring about significant increase in growth characters. Closer spacing S_3 (60 x 30 cm) recorded significantly higher plant height and stem length of crop than wider spacing viz. S_2 (60 x 45 cm) and S_1 (60 x 60 cm). Wider spacing S_1 (60 x 60 cm) produced significantly higher biological yield (gross plant weight), curd diameter, curd depth, net curd weight and marketable curd weight over closer spacing.

Key Words : Cauliflower, fertilizers, plant densities, hybrid and synthetic.

Table-1 : Effect of Fertility, plant density and varieties on growth and yield attributing character of cauliflower.

Treatment	Growth characters				Yield and yield attributing characters						
	Plant height (cm)	Stem Length (cm)	leaf size (L x B) cm^2	Days to 50% curd formation Curd	Diameter (cm)	Curd Depth (cm)	Net Curd Weight (kg)	Market-able curd weight (q/ha)	Yield (q/ha)	Harvest Index (%)	B : C ratio
F_1: ($N_{80}P_{60}K_{50}$)	58.60	14.68	480.55	107.21	13.39	6.90	0.42	0.50	184.90	52.64	1.37
F_2: ($N_{120}P_{90}K_{75}$)	61.70	15.88	572.78	101.24	14.57	7.44	0.47	0.56	208.79	54.38	1.56
F_3: ($N_{160}P_{120}K_{100}$)	63.55	16.48	600.95	99.53	15.04	7.70	0.50	0.59	218.37	53.11	1.56
F_4: ($N_{200}P_{150}K_{125}$)	63.59	16.47	644.70	96.76	15.05	7.67	0.49	0.59	221.06	51.50	1.48
SEm± -	0.49	0.14	2.78	4.027	0.120	0.074	0.0040	0.0046	1.6335	0.5677	0.0180
C.D.at 5%	1.38	0.39	12.51	11.96	0.336	0.207	0.0165	0.0130	4.5827	1.5925	0.0506
S_1 -(60x60) cm	58.65	15.00	675.99	103.09	15.66	8.13	0.62	0.73	201.87	53.84	1.50
S_2 -(60x45) cm.	61.14	15.96	575.61	100.39	15.09	7.56	0.49	0.59	217.63	54.05	1.62
S_3 -(60x30) cm	65.11	16.68	472.64	100.08	12.78	6.60	0.31	0.37	205.34	50.83	1.35
SEm± -	0.57	0.16	3.84	4.93	0.138	0.085	0.0046	0.0053	1.8862	0.6555	0.0208
C.D.at 5%	1.59	0.46	23.34	NS	0.387	0.239	0.0190	0.0150	5.2916	1.8389	0.0584
V_1 –(Pusa Hybrid-2)	61.98	16.41	605.99	101.38	14.32	7.36	0.50	0.59	220.23	52.95	1.54
V_2 -(Pusa Synthetic)	61.74	15.34	543.58	100.99	14.70	7.50	0.44	0.53	196.33	52.86	1.44
SEm± -	0.38	0.12	5.28	0.812	0.098	0.060	0.0032	0.0038	1.3402	0.4599	0.0148
C.D.at 5%	1.08	0.32	NS	NS	NS	NS	0.0135	0.0106	3.7616	NS	0.0415
Interaction	NS	NS	(V x S), (F x S)	NS	V x S	V x S	F x S	F x S	F x S	V x S	F x S