

## STUDIES ON GENETIC PARAMETERS IN BABY CORN IN THE MID HILLS OF MEGHALAYA

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Baby corn refers to the young flowering corn ear harvested between two days before and three days after silking, which is a delicious, decorative and nutritious vegetable. It may be used as salad or as ingredient in various preparations viz., chop-its suey (Chinese dish), soup, deep-fried with meat or rice, soured with other vegetables, pickles and corn pakoras. Galinet reported that baby corn ears with stir-fry vegetables, including broccoli were served in Chinese-American and European restaurants. Thakur (2000) emphasized for the diversification and value addition of maize as well as the growth of food processing industry, which is an interesting recent development for growing maize for vegetable purpose as baby corn.

An experiment was conducted in the plant breeding research farm, of ICAR Complex for NEH region, Umiam (26°N latitude to 92°E longitudes at 1000m amsl), Meghalaya during the rainy season of 1999. five entries viz., RCM 1-1, MLY, MLW, RCM 1-3 and RCM 1-2 were grown in a randomized block design with three replications during kharif (rainy season) 1999 in rainfed acid alfisol condition (pH5.0). The plot size was 5m x 1.4m. A spacing of 50 cm between rows and 15cm between plants was given. The crop was fertilized as per package of practices. When the plants attained a height of 12-15 cm, they were thinned to maintain optimum plant population. Observations were recorded for 12 quantitative characters on 10 random plants in each plot for baby corn yield (g/sq m), baby corn yield with husk (g/ha), baby corn yield without husk (q/ha), ear leaf length (cm), ear leaf breadth (cm), ear leaf area (sq cm), plant height (cm), ear height (cm), except for days to 50% of tasselling, days to 50% silking where data were recorded on plot basis as per Descriptors for Maize of CIMMYT (1991). The analysis of variance for each character was carried out by the procedures as given by Panse and Sukhatme (1967). The formula suggested by Lush (1949) and Johnson *et al* (1955) was used for calculation of heritability in broad sense, genetic advance and genetic advance as percentage of mean.

Variation is one of the most important criteria for selection and it is also responsible for evolution. The heritability, genetic advance (GA) and genetic advance as percent of mean for various characters are presented in Table 1. Significant differences were observed for all the characters. Baby corn yield (g/sq cm), baby corn yield with husk (q/ha), baby corn yield without husk (q/ha), ear height (cm), ear leaf area (sq cm) and plant height (cm) had considerable amount of variation as revealed by high phenotypic (PCV) and genotypic coefficient of variation (GCV). Heritability in broad

sence, genetic advances and genetic advances as percentage of mean (both at 5% and 1% selection intensity) were high for baby corn yield (g/sq cm), baby corn yield with husk (q/ha), baby corn yield without husk (q/ha), ear height (cm), ear leaf area (sq cm) and plant height (cm), indicating the preponderance of additive gene effects for these characters and could be of great importance for selecting better genotypes in baby corn improvement programmes. Non additive gene effects were found for characters viz, days to 50% tasselling, days to 50% silking, ear leaf length (cm), ear leaf breadth (cm), internode above first ear and total number of leaves indicating that these traits were under the influence of environmental factors. Tiwari and Verma (1999) reported that heritability estimates were invariably moderate to high for all character and observed high heritability with high GA for cob yield with husk and baby corn yield.

#### REFERENCES

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**Table 1. Mean, Range and genetic parameters for twelve quantitative characters in baby corn.**

Characters	Grand mean	Range	CV	σ <sub>g</sub>	σ <sup>2</sup> <sub>ph</sub>	GCV %	PCV %	h <sup>2</sup> (%)	G.S		GS as % of mean at 1% selection intensity	
									G.S (%)	GS as % of mean		
												at 5% selection intensity
Days to 50% tasselling	54.67	49-57	1.12	7.87	8.06	5.13	5.19	97.66	5.71	10.45	7.32	13.39
Days to 50% silking	59.13	53-61	0.64	7.18	7.26	4.53	4.55	99.00	5.49	7.04	9.29	11.91
Ear leaf length (cm)	95.33	66-120	5.61	203.82	219.06	14.52	15.05	93.04	28.37	36.36	28.85	36.97
Ear leaf breadth (cm)	9.72	8.5-11.3	5.93	0.31	0.48	5.77	7.13	65.44	0.93	9.61	1.19	12.32
Ear leaf area (sq cm)	962.32	561-1260	9.39	31672.92	35753.11	18.49	19.65	88.59	345.06	35.86	442.21	45.95
Internode above 1 <sup>st</sup> ear	6.40	5.7	5.70	0.07	0.13	4.03	5.71	50.00	0.68	5.88	0.48	7.53
Total number of leaves	13.47	12-15.5	3.77	0.45	0.58	4.96	5.63	77.54	1.21	8.99	1.55	11.53
Plant height (cm)	249.00	157-325	10.25	1193.12	2318.83	17.93	19.34	85.95	85.26	34.24	109.27	43.88
Ear height (cm)	154.53	97-218	8.93	1297.77	1393.08	23.31	24.15	93.16	71.63	46.35	91.79	59.40
Baby corn yield (g/sqm)	341.73	211-500	3.66	8562.70	8641.02	27.08	27.20	99.09	189.76	55.53	243.18	71.16
Baby corn yield with husk (q/ha)	34.23	21.13-50.09	3.70	85.62	86.42	27.03	27.15	99.07	18.97	55.42	21.23	71.02
Baby corn yield without husk (q/ha)	10.18	5.91-15.03	3.75	8.74	8.81	29.03	29.15	99.12	6.06	59.55	7.77	76.33