

**HIGH YIELDING MUTANTS OF BLACKGRAM VARIETY 'PH-25'**

Seeds of blackgram (*Vigna mungo* L.) variety 'PH-5' were treated with chemical mutagens ethyl methanesulfonate (EMS), nitrosoguanidine (NG), maleic hydrazide (MH) and sodium azide ( $\text{NaN}_3$ ), each at 3 different concentrations. Thirty six mutant lines developed from mutagenic treatments along with parent varieties were tested in  $M_4$  generation. The mutants showed wide variation in most of the traits and multivariate  $D^2$  analysis showed genetic divergence among themselves. Twenty of the thirty mutants showed genetic divergence from parent. Ten selected high yielding mutants were tested in  $M_5$ . Yield and other productive traits of five high yielding mutants in  $M_4$  and  $M_5$  are presented in Table 1. The mutants, their mutagenic treatment origin and significant changes in productive traits from parent variety PH-25 are as follows:

- PE2-1: (EMS, 0.4%). Increase in plant height, bunches/plant, pods/plant, seeds/pod and 100-seed weight.  
 PS1-3: ( $\text{NaN}_3$ , 0.05%). Increase in bunches/plant and pods/plant.  
 PE1-2: (EMS, 0.2%). Early maturity, increase in pods/plant and 100-seed weight.  
 PS2-1: ( $\text{NaN}_3$ , 0.03%). Increase in bunches/plant and pods/plant and 100-seed weight.  
 PM2-3: (MH, 0.02%). Early maturity, increase in bunches/plant and pods/plant.

Table 1. Yield and productive traits of high yielding mutants of blackgram variety PH-25 in  $M_4$  and  $M_5$  generations

Mutant		Days to maturity	Plant ht. (cm)	Bunches/plant (No.)	Pods/plant (No.)	Seeds/pod (No.)	100-seed weight (g)	Yield (q/ha)
PE2-1	$M_4$	89.3	38.2	9.9	26.6	3.87	4.24	10.92
	$M_5$	93.7	41.3	9.9	21.6	3.67	4.36	9.12
PS1-3	$M_4$	87.7	37.6	9.6	28.4	3.76	4.01	10.78
	$M_5$	92.3	40.1	9.8	23.7	3.53	4.18	8.89
PE1-2	$M_4$	86.0	33.2	8.2	27.3	3.69	4.04	10.20
	$M_5$	88.0	36.1	8.7	22.5	3.48	4.33	8.84
PS2-1	$M_4$	86.7	35.7	10.1	27.9	3.60	4.01	9.98
	$M_5$	90.7	38.6	10.1	24.9	3.47	4.24	8.61
PM2-3	$M_4$	86.0	35.7	10.2	28.7	3.67	3.82	9.95
	$M_5$	88.7	38.8	10.1	24.7	3.47	4.03	8.43
PH-25 (Parent)	$M_4$	88.7	34.4	7.5	20.5	3.64	3.88	7.25
	$M_5$	91.7	38.0	8.2	17.6	3.41	4.09	7.36
C.D (5%)	$M_4$	1.7	3.1	1.2	3.1	0.21	0.14	0.52
	$M_5$	2.4	3.3	1.6	2.7	0.21	0.23	0.92

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