

**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 (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: (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: (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 |

(Contributed by MISRA, R.C., B.D. MOHAPATRA and B.S. PANDA, Regional Research Station, Semiliguda, Post Box No. 10, Sunabeda – 763 001, Dist. Koraput, Orissa, India)