



SHORT COMMUNICATION

Evaluation of genotypes of *Melothria heterophylla* (Lour) Cogn. for their yield potential

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Wild kunduru, *Melothria heterophylla* (Lour) Cogn. (Synonym *Solena amplexicaulis* L.) belongs to the Cucurbitaceae family and is generally found in the forest of almost all parts of India, especially in warm and moist regions. They are considered to be used by the tribal of Odisha for their stimulant, invigorating, and purgative properties (Mondal et al., 2010). It also possesses anticancer properties, hence valuable for application in food and drug products. Although the plant is a perennial one, the vegetative part dies during summer and is again regenerated from the tuberous roots. Being a dioecious plant, several variations are seen in the leaves, namely round, lobed and saggitate. The fruits quickly come to maturity unless consumed as the vegetable turns red. The seeds are dispersed and germinate in the rainy season. Several genotypes have been collected from various regions. Although 35 were collected, 15 types with distinct characters were evaluated for various morphological traits, namely plant height, days taken for edible maturity, length of edible fruits, girth of edible fruits, number of seeds per fruit, weight of edible fruits, number of fruits per plant and yield per plant.

The cuttings of selected genotypes were rooted and planted in the mid of June. They were supported by a trellis system to grow. Five rooted plants of each genotype were transplanted at the spacing of 60 × 60 cm. The trial was conducted with two replications in a Randomized Block Design. A standard method was followed to record the data for various morphological characters. Plant protection measures were taken whenever required. Each plant was supplied with 5 g of NPK mixture 1:1:1 and a half kg of FYM after 20 days of planting. Another 5 g of NPK mixture was given at 40 days and 60 days after transplanting. The observations of different genotypes recorded during the course of the investigation were statistically analyzed (Allard, 1960; Burton and Devance, 1953; Chaudhury, 1973) and presented below in the Table 1.

Table 1: Performance of different genotypes of *Melothria heterophylla*

| Genotype | Plant height (m) | Days to edible maturity | Length of edible fruits (cm) | Girth of edible fruits (cm) | No. of seeds/fruit | Weight of edible fruits (g) | No. of fruits/plant | Yield per plant (kg) |
|----------|------------------|-------------------------|------------------------------|-----------------------------|--------------------|-----------------------------|---------------------|----------------------|
| BMH8 | 3.10 | 10.67 | 3.99 | 2.04 | 32.67 | 14.07 | 125.67 | 1.0 |
| BMH10 | 3.45 | 9.00 | 5.00 | 2.05 | 43.33 | 12.27 | 128.00 | 1.0 |
| BMH12 | 3.10 | 11.33 | 5.72 | 1.97 | 51.67 | 19.79 | 142.67 | 2.82 |
| BMH13 | 2.75 | 13.00 | 7.59 | 2.08 | 49.00 | 17.55 | 126.33 | 2.0 |
| BMH15 | 2.60 | 10.67 | 5.52 | 2.30 | 51.00 | 21.47 | 107.67 | 2.0 |
| BMH16 | 4.08 | 10.00 | 4.92 | 2.23 | 34.00 | 20.22 | 118.00 | 2.0 |
| BMH19 | 2.84 | 7.33 | 3.28 | 1.93 | 28.33 | 7.12 | 110.00 | 0.23 |
| BMH21 | 1.92 | 7.00 | 3.28 | 1.92 | 17.33 | 6.08 | 109.67 | 0.6 |
| BMH24 | 4.05 | 12.33 | 7.42 | 2.08 | 50.33 | 21.13 | 98.67 | 2.06 |
| BMH26 | 2.32 | 9.33 | 4.08 | 2.49 | 32.67 | 15.82 | 109.33 | 1.73 |
| BMH27 | 2.93 | 10.00 | 4.07 | 2.17 | 38.67 | 15.59 | 111.00 | 1.72 |
| BMH28 | 2.72 | 10.00 | 4.50 | 1.93 | 40.67 | 12.15 | 128.00 | 1.5 |
| BMH31 | 3.08 | 7.67 | 3.55 | 2.07 | 27.67 | 8.16 | 106.67 | 0.6 |
| BMH34 | 2.51 | 12.00 | 6.86 | 2.20 | 45.67 | 18.46 | 118.33 | 2.0 |
| BMH35 | 2.82 | 10.33 | 5.82 | 1.93 | 41.33 | 17.47 | 149.33 | 2.0 |
| Mean | 2.92 | 10.04 | 5.04 | 2.09 | 38.95 | 15.16 | 119.38 | 1.0 |
| Range | 1.92 to 4.08 | 7.00 to 13.00 | 3.28 to 7.59 | 1.92 to 2.49 | 17.33 to 51.67 | 6.08 to 21.47 | 98.67 to 149.33 | 0.6 to 2.82 |
| SEm | 0.04 | 0.25 | 0.01 | 0.06 | 1.16 | 0.21 | 2.57 | - |
| F test | ** | ** | ** | ** | ** | ** | ** | - |
| CD@0.5% | 0.12 | 0.72 | 0.28 | 0.17 | 3.42 | 0.62 | 7.44 | - |

The statistical analysis exhibited significance at a 5% level for all the studied characteristics, such as plant height (m), days to edible maturity, length of edible fruits (cm), girth of edible fruits (cm), number of seeds/fruit, weight of edible fruits (g), number of fruits/plant, and yield per plant (kg). The genotype BMH 16 was measured tallest one (4.08 m), followed by BMH-24 (4.05 m). The genotype BMH-21 had the smallest plant height (1.92 m). A range of 7 to 13 days was observed among the genotypes to attain edible maturity. The genotype BMH-21 was earliest to attain maturity 7 days after anthesis, followed by BMH-13, which took 13 days. Maximum fruit length was recorded in BMH-13 (7.59 cm) followed by BMH -24 (7.42 cm). Minimum fruit length was recorded in BMH-19 and BMH-21 (3.28 cm). A wide range of number of seeds per fruit was observed in different genotypes (17.33–51.67). The number of seeds per fruit was highest in BMH-12 and lowest in BMH-21 (17.33). The fruit weight ranged from 6.08 to 21.47 g among the 15 genotypes. The genotype BMH-21 had the lowest fruit weight, 6.08 g, and BMH-15 had the highest fruit weight, i.e., 21.47 g. The number of fruits per plant ranged between 98.67 to 149.33

in the genotypes BMH-24 and BMH-35, respectively. A significant difference was observed for the yield per plant, which was the lowest (0.67 kg) in BMH-21 and 2.82 kg in BMH-12. The genotype BMH-21 (1.92 cm) had the smallest fruit girth, followed by BMH-19 (1.93 cm). Moreover, the genotype BMH-34 produced the highest girth, 2.20 cm. Overall, the performance of BMH-12 and BMH-35 was found to be good for yield and yield-attributing traits.

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