

## SHORT COMMUNICATION

**Karjat 6: A Medium Duration Quality Rice Variety for Maharashtra State****BV Ingale, BD Waghmode, VV Dalvi, AP Rewale and BB Jadhav<sup>1</sup>***Regional Agricultural Research Station, Karjat-410 201, Dist. Raigad (Maharashtra)*<sup>1</sup> *Head, Dept. of Agril. Botany, DBS Konkan Krishi Vidyapeeth, Dapoli-415 712 (Maharashtra)***Key words: Karjat 6, Resistance, Quality, Medium, Rice variety, Maharashtra**

Rice is the second important food grain crop after Jowar in Maharashtra State. Total area, annual production and productivity of rice crop are 15 lakh hectares, 25 lakh tonnes and 1.7 ton per hectare respectively in the state. The rice crop is grown under varied agro-ecological situations with varied grain quality preferences of the farmers. There is a greater preference for fine grain varieties among the rice farmers in the state due to higher market prices and more demand of consumers (Anonymous, 2005). Keeping the requirements of farmers and trade efforts were made to develop a superfine and medium duration rice variety suitable for mid-lands in the state.

A cross was made between Heera and Karjat 184 using Heera as female parent at Regional Agril. Research Station, Karjat. The selections were made for super fine and high yielding progenies from the segregating generations. Among the several selections in segregating populations, a promising pure line KJT-12-6-25-9-13-50-13 was further tested in various trials on station, state and national programme, co-ordinated trials at various locations in the state and country. The culture was screened for resistance to various insect pests and

diseases at endemic sites and quality parameters. The yield data of various trials were statistically analysed according to Panse and Sukhatme (1967). Based on yield data of various trials, superior grain quality disease and insect pest reactions and stable yield performance at various test locations, Karjat 6 (KJT-12-6-25-9-13-50-13) rice variety was recommended to release in the state of Maharashtra for commercial cultivation during the year 2005.

The yield performance of Karjat 6 (IET-19032) rice variety in various trials conducted during 2000 to 2004, is presented in Table 1. Karjat 6 (KJT-12-6-25-9-13-50-13) rice variety recorded 8.57 and 5.26 per cent increase in grain yield over check Mahsuri in Initial and Advance variety trials (station) during *kharif*-2000 and 2001, respectively at Regional Agril. Research Station, Karjat (Anonymous, 2001). The variety showed 10.34 and 33.33 per cent increase in yield over check during *kharif* 2002 and 2003, respectively in state co-ordinated trials conducted at nine locations in the Maharashtra state (Anonymous, 2003).

The above rice variety was evaluated in All India Coordinated Initial Variety Slender Grain Trial at 22

**Table 1. Yield performance of Karjat 6 (IET-19032) in different trials and demonstrations\***

| Particulars                                    | Year (t/ha) | Average grain yield |       | Per cent increase over check |
|------------------------------------------------|-------------|---------------------|-------|------------------------------|
|                                                |             | Karjat 6            | Check |                              |
| Initial Station trial (1 location)             | 2000        | 3.8*                | 3.5   | 8.57                         |
| Advance Station trial (1 location)             | 2001        | 4.0*                | 3.8   | 5.26                         |
| Initial State Co-ordinated trial (9 locations) | 2002        | 3.2*                | 2.9   | 10.34                        |
| Advance State Co-ordinated trial (9 locations) | 2003        | 3.6**               | 2.7   | 33.33                        |
| AICRIP trial SG (22 locations)                 | 2004        | 3.7*                | 3.5   | 5.71                         |
| Adaptive trial (19 locations)                  | 2004        | 4.9**               | 3.8   | 28.95                        |
| Agronomical trial (1 locations)                | 2004        | 4.0**               | 3.2   | 25.00                        |
| Average                                        |             | 3.88                | 3.34  | 16.16                        |

(Anonymous, 2005);

\*, \*\* Significant at 5 % and 1 % respectively

E-mail: hybrid@vsnl.net

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**Table 2. Salient features of the rice variety Karjat 6 (KJT-12-6-25-9-13-50-13)**

| Character                                   | Particulars                                                                     |
|---------------------------------------------|---------------------------------------------------------------------------------|
| Duration (days)                             | 130-135 days<br>( <i>kharif</i> )<br>135-140 ( <i>rabi</i> -hot weather season) |
| Plant height (cm)                           | 95-100                                                                          |
| Lodging                                     | Non-lodging                                                                     |
| Panicle length (cm)                         | 20                                                                              |
| Spikelets/ panicle (nos)                    | 190-200                                                                         |
| Test weight (1000 kernel weight)            | 13.30 g                                                                         |
| Plant type                                  | Compact                                                                         |
| Awns                                        | Absent                                                                          |
| Panicle threshability                       | Easy                                                                            |
| Shattering                                  | Non-shattering                                                                  |
| Scent                                       | Absent                                                                          |
| Average grain yield (t/ha)                  | 3.5-4.0                                                                         |
| Potential yields (t/ha)                     | 7.0-8.0                                                                         |
| Milling (%)                                 | 68.1                                                                            |
| Head Rice Recovery (%)                      | 65.0                                                                            |
| Kernel Length (mm)                          | 5.51                                                                            |
| Kernel Breadth (mm)                         | 1.80                                                                            |
| Length and Breadth ratio                    | 3.06                                                                            |
| Kernel chalkiness                           | Absent (translucent)                                                            |
| Grain type                                  | Short slender                                                                   |
| Kernel elongation length after cooking (mm) | 8.1                                                                             |
| Alkali spreading value                      | 4.5                                                                             |
| Amylose content (%)                         | 25.43                                                                           |
| Gel consistency (mm)                        | 43                                                                              |
| Reaction to disease and Insect pests        |                                                                                 |
| Bacterial leaf blight                       | Resistant                                                                       |
| Leaf blast                                  | Resistant                                                                       |
| Neck blast                                  | Moderately resistant                                                            |
| Sheath rot                                  | Moderately resistant                                                            |
| Brown plant hopper                          | Resistant                                                                       |
| Stem borer                                  | Resistant                                                                       |
| Gall midge (Biotype-5)                      | Resistant                                                                       |

locations during *kharif* 2004 in the country. It showed an average increase of 5.71 per cent in grain yields over the check in these trials indicating its wider adaptability in varied agro-ecological situations in the country (Anonymous, 2004). The variety recorded 28.95 per cent more grain yield over check in 19 Adaptive trials conducted on farmer's fields during *kharif* 2004. The field experiment on levels of nitrogen and spacing was conducted at Agril. Research Station, Palghar during *kharif* 2004. Rice variety Karjat 6 showed significant and highest yield at 150 kg N/ha (4.29 t/ha) and 20 x 15 spacings (4.19 t/ha) indicating responsive to cultural packages. The salient features of Karjat 6 recorded at the research station are presented in Table 2.

Karjat 6 is midlate in duration (130-135 days duration in *kharif* and 140-145 days duration in *rabi*/hot weather seasons), Semi dwarf (95-100 cm plant height), short slender kernel type (S.S.), average 1000

kernel weight of 13.30 g with an average grain yield of 3.2 to 4.9 t/ha. The variety is non-lodging and non-shattering type. The milling and cooking qualities of Karjat 6 rice variety was estimated at the Directorate of Rice Research, Hyderabad during the year-2004. It showed excellent kernel quality features like a popular quality rice variety check Samba Mahsuri (BPT-5204). The variety Karjat 6 showed higher milling (68.1 %) and head rice recovery (65.0 %). The kernel length (5.51 mm), kernel breadth (1.80 mm), length:breadth ratio (3.06) and translucent kernel observed to be an inherited traits in this rice variety which contribute to higher milling and head rice recovery in Karjat 6 (Bhattacharya, 1980). Karjat 6 recorded an intermediate amylose content (25.43 %) indicating better cooking qualities of kernels (Anonymous, 2004b) (Shobha Rani, 2003). The variety showed medium gel consistency (43 mm) and Alkali spreading value (4.5) like BPT-5204. The above observations indicate that the new variety. Karjat 6 meets the requirements of millers and consumers for higher monetary returns to farmers.

The rice variety Karjat 6 was screened for reaction to various diseases and insect pests at endemic locations in the state and country. The variety showed resistant to bacterial leaf blight, leaf blast and brown plant hoppers (Anonymous, 2004c,d). While, it recorded moderate resistance to neck blast, sheath rot, stem borer and gall midge (Biotype-5) under endemic test locations (Anonymous, 2001b).

In view of higher yields, superior grain quality and field tolerance to major insect pests and diseases, the rice variety Karjat 6 (IET-19032) recommended to release for commercial cultivation in the state of Maharashtra during the year 2005. It will meet the requirement of farmers and consumers in the state.

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