

## A medium duration fine grain rice cv. PALGHAR-2 for Konkan region of Maharashtra State

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### ABSTRACT

The rice cv. PALGHAR-2 (PLG 103-1-2-2) was evolved from the cross between IR-5 and Zinia-63 using former parent as female through pedigree method of selection. It is midlate in duration (125-130 days in Kharif), Semi-dwarf (100-105 cm plant height) with short slender and translucent kernel. The cv. PALGHAR-2 showed 19.99 per cent higher yield over the checks in adaptive trials. It showed good milling, head rice recovery and good cooking qualities. It has been observed superior over check Zinia-63 in disease and pest reaction with an average yield potential of 3.0 to 3.5 t/ha. Therefore, the rice variety Palghar-2 was released for commercial cultivation in Konkan region of Maharashtra state

**KEY WORDS** : Rice, Palghar-2, Fine grain, Medium

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### INTRODUCTION

Rice is the most important food grain crop of Konkan region of Maharashtra State. Total area, annual production and productivity of rice crop are 15 lakh hectares, 25 lakh tonnes and 1.7 ton/ha, respectively in the state. The rice crop is grown under varied agro-ecological situations with varied grain quality preferences of the farmers in state. 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 midlands in Konkan region of Maharashtra state.

### MATERIALS AND METHODS

A cross was made between IR -5 and Zinia-63 using IR 5 as female parent at Agril. Research Station, Palghar. The selections were made for super fine and high yielding progenies from the segregating generations of above cross. Among the several selections in segregating populations

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of above cross, a promising pure line PLG-103-1-2-2 was further tested in various trials on station, state and national programme, co-ordinated trials at various locations in the state and country up to 2001. 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 analyzed 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, PALGHAR-2 (PLG 103-1-2-1) rice cultivar was released in the Konkan region of Maharashtra state for commercial cultivation.

### RESULTS AND DISCUSSION

The yield performance of Palghar-2 (IET-16092) rice cultivar in various trials conducted during 1990 to 2001 is presented in Table 1. Palghar-2 (PLG 103-1-2-2) rice variety recorded 25.96, 43.0 and 22.03 per cent increase in grain yield over check Zinia-63 in initial and advance variety trials (station) during *Kharif*-1990 to 1992, respectively at Agril. Research Station, Palghar (Anonymous, 1992). The variety showed 38.22, 39.65 and 10.6 per cent increase in yield over check during *Kharif* 1993 to 1995, respectively in state co-ordinated trials conducted at different locations in the Maharashtra state (Anonymous, 1995).

The above rice variety was evaluated in All India

**Table 1 : Yield performance of PALGHAR-2 (IET-16092) in different trials and demonstrations**

Particulars	Year	Average grain yield (t/ha)		Per cent increase over check
		Palghar-2	Check	
Initial Evaluation trial (1 location)	1990	3.8	3.0	25.96
Preliminary Variety trial (1 location)	1991	3.4	2.4	43.0
Uniform Variety trial (1 location)	1992	3.6	2.9	22.03
Advance State Coordinated trial (8 locations)	1993	2.8	2.0	38.22
Advance State Coordinated trial (6 locations)	1994	2.7	1.9	39.65
Advance State Coordinated trial (8 locations)	1995	2.6	2.3	10.6
AICRIP trial- IVT-M (18 locations)	1998	2.2	3.9	(-)43.6*
Adaptive trial (100 locations)	1998-2001	3.3	2.7	19.99
Agronomical trial (1 locations)	2001	3.5	2.8	22.12
Average		3.1	2.7	19.8

\*There is no increase in yield because the check used in AICRIP trial was Jaya having test weight 28-30 g *i.e.* more than Palghar-2 (12.60 g)

Coordinated Initial Variety Trial medium at 18 locations during *Kharif*- 1998 in the country. The variety recorded 19.99 per cent more grain yield over check in 100 adaptive trials conducted on farmer's fields during *Kharif*-1998 to 2001. The field experiment on levels of nitrogen and spacing was conducted at Agril. Research Station, Palghar during *Kharif*-2001. PALGHAR-2 rice cultivar showed significant and highest yield at 120 kg N/ha (4.5 t/ha) and 20 x 15 spacings indicating responsive to cultural packages.

The salient features of PALGHAR-2 rice variety recorded at the research station are presented in Table 2. Palghar-2 is midlate in duration (125 -130 days in *Kharif* seasons), semi dwarf (100-105 cm plant height), short slender kernel type, 1000 kernel weight of 12.60 g with an average grain yield of 3.0 to 3.5 t/ha. The variety is non-lodging and non-shattering type. The milling and cooking qualities of PALGHAR-2 rice cultivar were estimated at the Directorate of Rice Research, Hyderabad during the year-2001 (Anonymous, 2001). The cv. PALGHAR-2 showed milling (58.1 %) and head rice recovery (53.0 %). The kernel length (4.70 mm), kernel breadth (1.56 mm), length: breadth ratio (3.01) and translucent kernel were observed to be inherited traits in this rice variety (Bhattacharya, 1980). The rice cv. PALGHAR-2 was screened for reaction to various diseases and insect pests at endemic locations in the state and country.

In view of higher yields, superior grain quality and field tolerance to major insect pests and diseases, the rice cv. PALGHAR-2 (IET-16092) was released for commercial cultivation in the Konkan region of Maharashtra state during the year 2002. It will meet the requirement of farmers and consumers in the Konkan region of Maharashtra state.

**Table 2 : Salient features of the rice cv. PALGHAR-2 (PLG-103-1-2-2)**

Character	Particulars
Duration (days)	125 -130 days ( <i>Kharif</i> )
Semi dwarf	100-105
Lodging	Non-lodging
Panicle length (cm)	23
Spikelets / panicle (nos)	175-180
Test weight (1000 kernel weight)	12.60 g
Plant type	Compact
Awns	Absent
Panicle threshability	Easy
Shattering	Non-shattering
Scent	Absent
Average grain yield (t/ha)	3.0-3.5
Potential yields (t/ha)	4.0-5.0
Milling (%)	58.1
Head Rice Recovery (%)	53.0
Kernel Length (mm)	4.70
Kernel Breadth (mm)	1.56
Length and Breadth ratio	3.01
Kernel chalkiness	Absent (translucent)
Grain type	Short Slender
Volume expansion ratio	5.4
Water uptake	165
Gel temperature	2.2
Reaction to Disease and Insect Pests	
Leaf blast	Moderately susceptible
Neck blast	Moderately resistant
Leaf scald	Moderately susceptible
Stem borer	Moderately susceptible

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