

## **SHORT COMMUNICATION**

## KAU Pournami (MO 23): A High Yielding Red Rice Variety

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## Abstract

KAU Pournami (MO 23; KAUM 109-1-2-1; IET 23739) is a high yielding photo-insensitive, medium duration, medium-bold red rice variety with an average productivity of 7000-7500 kg ha<sup>-1</sup>, released from Kerala Agricultural University. It is developed from the cross between NHTA 8 and Aruna (MO 8). It has got high milling quality in terms of Head Rice Recovery and better cooking quality compared to the popular variety Uma. It is moderately tolerant to sheath blight, sheath rot, BPH and gall midge. The variety was notified by the Government of India during 2021.

Keywords: KAU Pournami, red rice variety

## Introduction

Rice is the staple food of Kerala, a southern state of Indian sub-continent. Rice agro-ecosystems of Kerala is hot spot for pests and diseases due to the high temperature, rainfall and humidity prevailing during the cropping period. The variety development programme was started at Rice Research Station, Moncompu to evolve a high yielding rice variety with biotic stress tolerance. Hybridisation work was initiated between high yielding locally adapted varieties viz., Uma, Pavithra, Panchami, Bhadra, Asha, Aruna and Jyothi with identified donor parents for biotic stress tolerance viz., NHTA 8, Triguna, TN 1, Phalguna, GM 8 and Bhumansa. Pedigree selection method was followed, and genotypes were selected based on biotic stress tolerance and important yield attributing traits.

The cultures after attaining uniformity were advanced to Initial Evaluation Trial (IET) followed by Preliminary Yield Trial (PYT) and Comparative Yield Trial (CYT). Among the advanced culture's KAUM109-1-2-1 (Figure 1) was identified as promising one with respect to yield as well as tolerance to biotic stresses and was forwarded to multi-location and adaptive research trials (ART). It is a medium duration, semi-dwarf, photo-insensitive culture, which is suitable to both *kharif* and *rabi* seasons. The mean grain yield of KAUM109-1-2-1 at different yield trial is given in **Table 1**.



Figure 1: Field view of KAU Pournami (MO 23) rice variety Table 1: Mean grain yield (kg ha<sup>-1</sup>) obtained for KAUM 109-1-2-1 in different yield trials

Variety	РҮТ	CYT	ART		
KAUM 109-1-2-1	5278ª	<b>5957</b> ª	7419ª		
Jyothi	3505 <sup>b</sup>	3667 <sup>b</sup>	5700 <sup>b</sup>		
Uma	5244ª	5433ª	8090ª		
C.D @ p=0.05	750	708	816		

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Multi-location trial of the selected culture (IET 23739) was conducted as part of the All India Coordinated Rice Improvement Programme (AICRIP) by including it in Initial Variety Trial-Irrigated Mid-Early (IVT-IME) during kharif 2013 and Advanced Variety Trial-1-Irrigated Mid-Early (AVT-1-IME) of AICRIP during kharif 2014. It ranked seventh in the IVT-IME and showed superior performance of 16.4%, 6.1% and 10.4% over the national, regional, and local checks respectively in eastern region. In AVT-1-IME it ranked first in Kerala. Adaptive research trial (ART) of the culture was conducted in 6 locations and the results showed on par yield for KAUM 109-1-2-1 with Uma, and superior yield compared to Jyothi. The yield at different ART locations ranged between 6750 kg ha<sup>-1</sup> to 8625 kg ha<sup>-1</sup> with an average productivity of 7419 kg ha<sup>-1</sup>. Results of station trials, multi-locational trials and ART proved the superiority and suitability of KAUM 109-1-2-1 as a new high yielding rice variety.

Reaction to pests and disease were scored in the National Screening Nursery 1 (NSN 1) of AICRIP (Table 2) and field of RRS Moncompu, following

standard Evaluation System of Rice (IRRI, 2013). KAUM 109-1-2-1 showed moderate tolerance to major diseases *viz.*, sheath rot, blast, brown spot and RTD and pests *viz.*, BPH, stem borer, leaf folder and gall midge. Grain and cooking quality were analyzed in the laboratory of ICAR-IIRR and RRS Moncompu based on standard laboratory procedures. Grain type of KAUM 109-1-2-1 is medium bold with red kernel (**Figure 2**). It has high milling recovery (76%) and HRR (60%). Eating quality of the variety is desirable with intermediate amylose content and medium gel consistency (**Table 3**). The grain quality is better compared to the popular rice variety Uma.



Figure 2: Grains of rice variety KAU Pournami (MO 23)

Variety	Score (0-9)						Damage (%)				
	Sh.B	SR	LB	NB	BLB	BS	RTD	BPH	SB	LF	GM
KAUM 109-1-2-1	5.4	4.3	4.8	3.7	5.8	3.7	5.0	4.2	6.4	9.3	4.0
TN 1	6.7	5.2	4.7	5.3	6.2	3.7	6.0	7.6	11.3	12.5	7.9

Table 2: Reaction of KAUM 109-1-2-1 to Diseases and pests in AICRIP (NSN 1) during kharif 2014

Sh. B: Sheath blight; SR: Sheath rot; LB: Leaf blast; NB: Neck blast; BLB: Bacterial leaf blight; BS: Brown spot; RTD: Rice tungro disease; BPH: Brown plant hopper; SB: Stem borer; LF: Leaf folder; GM: Gall midge *(Source: AICRIP Progress Report 2014)* 

Variety	GL (mm)	GW (mm)	L/B ratio	AC (%)	GC (mm)	Hulling %	Milling %	HRR
KAUM 109-1-2-1	7.00	3.00	2.33	24.80	47.00	80.00	76.00	60.00
Uma	6.08	2.60	2.30	22.26	28.00	81.50	76.00	54.00

Table 3: Grain quality parameters of KAUM 109-1-2-1

KAUM 109-1-2-1 (IET 23739) was approved for release as rice variety 'KAU Pournami (MO 23)' in the 27<sup>th</sup> state seed sub-committee meeting of government of Kerala. KAU Pournami was notified *vide* the

Gazatte of India notification number S.O 2775 dated 28<sup>th</sup> July, 2021 and recommended for cultivation in the state of Kerala.