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Abstract : “Oraebyeo” is mutation of a high quality japonica cultivar, Ilpumbyeoa new japonica rice (*Oriza sativa* L.) cultivar developed from by N-methyl-N-nitrosourea(MNU) treatment on fertilized egg cell by the rice breeding team of Gangwon Provincial Agricultural Res. & Ext. Service in 2006. This variety heads 20 days earlier than Ilpumbyeo and similar to that of Odaebyeo an early maturing leading cultivar of northern plain area of Korea. Compared with Odaebyeo has a good semi-erect plant type with lodging tolerance due to much shortened plant height(12cm shorter than Odaebyeo). Oraebyeo has similar panicle number with Odaebyeo where as it has more spikelets per panicle. However, this variety less the ratio of ripened grains and 1,000 grain weight than those of Odaebyeo. The yield performance of this cultivar in milled rice was about 5.09MT/ha in local adaptability test conducted for three years 2002-2004 and 5.51MT/ha in the demonstration plot of farmer’s field.

Key words : Oraebyeo, Rice, Mutation, Japonica, Leaf blast

Year	'94	'95	'96	'97	'98	'99	'00~'01	'02~'04
Generation	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇ ~M ₈	M ₉ ~M ₁₁
Ilpumbyeo (MNU treated)								
No. of breeding lines(individuals)	Bulk (11,331)	(155)	65	30	10	3		
Remark	Individual selection		Pedigree selection			OYT ¹⁾ PYT		LAT

¹⁾ OYT : observational yield trial, PYT : Preliminary yield trial, LAT : Local adaptability test

Fig. 1. Pedigree diagram of “Oraebyeo”

Table 1. Leaf and culm characteristics of “Oraebyeo”

Variety	Heading date	Leaf				Culm				Tillering angle
		Color	Length	Width	Erectness	Length(cm)	Thickness	Stiffness	Lodging	
Oraebyeo	Aug.5	Light Green	Medium	Medium	Half erect	60	Medium	Medium	Tolerant	Medium
Odaebyeo	Aug.5	Dark Green	"	"	"	72	"	"	"	"

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Table 2. Panicle and spikelet characteristics of "Oraebyeo"

Variety	Panicle					Spikelet					
	Exsertion	Length (cm)	No./hills	Spikelet density	Shattering	No./pani.	Ripened grains(%)	Glume color	Apiculus color	Stigma color	Awn
Oraebyeo	good	20	17	high	hard	96	75.9	yellow	yellow	white	none
Odaebyeo	good	19	16	moderate	hard	79	81.8	yellow	yellow	white	very rare

Table 3. Grain quality of "Oraebyeo"

Variety	Brown rice						Milled rice				
	Length (mm)	Width (mm)	Thickness (mm)	Ratio of length /width	1,000 grain wt.(g)	1 ℓ grain wt.(g)	Trans lucency (1-9)	White belly/center (0-9)	Amylose (%)	Protein (%)	
Oraebyeo	4.52	3.03	2.09	1.57	20.8	815	1	0/1	17.9	6.9	
Odaebyeo	5.11	2.93	2.07	1.73	24.5	820	1	1/1	19.4	7.2	

Table 4. Reaction to the environmental and physiological stress

Variety	Germination rate at low temp.(13°C)	Viviparous germination (%)	Premature heading (%)	Lodging (0-9)	Cold tolerance		
					Seedling stage (1-9)	Grain fertility (%)	Ripening stage(1-9)
Oraebyeo	77	21	0	0	3	37	3
Odaebyeo	58	24	0	1	5	68	3

Table 5. Reaction to blast disease

Variety	No. of nursery on Reaction to leaf blast			Reaction to neck blast(%)			
	R ¹ (0-3)	M (4-6)	S (7-9)	Icheon	Chuncheon	Jaecheon	Cheorwon
Oraebyeo	2	7	1	0	0	2.0	0
Odaebyeo	2	9	3	2.3	0	1.7	0

¹R : Resistance S : Susceptible

Table 6. Reaction to other diseases and insect pest

Variety	Bacterial leaf blight			Virus diseases			Plant hopper
	K1	K2	K3	Stripe	Dwarf	Black streak	
Oraebyeo	5	7	7	S	S	S	S
Odaebyeo	5	7	7	S	S	S	S

Table 7. Results of replicated yield trials

Culture season	Region	Average yield of control (MT/ha)	Milled rice yield(MT/ha) of Oraebyeo					
			'02	'03	'04	Aver.	Index	
Ordinary season	Middle plain	Chuncheon	5.36	4.89	5.61	5.40	5.30	99
		Wonju	5.09	-	4.58	5.17	4.87	96
		Cheorwon	5.18	4.89	5.12	5.78	5.26	102
		Jeongseon	5.14	4.89	4.59	5.24	4.91	96
	Aver.	5.19	4.89	4.98	5.40	5.09	98	