QUALITY CHARACTERIZATION OF CALIFORNIA PUBLIC RICE VARIETIES

M-104

M-104 is a very early maturity medium grain released in 2000. It shows resistance to cool temperature sterility, shows high yield potential, and has a kernel size similar to M-202. Its pedigree is: M-103/6/M-102/4/M-201/3/M7/M9/5/M-103.

U.S. MARKET TYPE:
MEDIUM GRAIN

QUALITY TYPE:
CALROSE

	2000	2001	2002
Grain Dimensions (Paddy)			
Average Length (mm)	8.56	8.46	8.64
Average Width (mm)	3.07	3.11	3.16
L/W Ratio	2.8	2.7	2.7
Grain Dimensions (Brown)			
Average Length (mm)	6.31	6.26	6.41
Average Width (mm)	2.79	2.72	2.75
L/W Ratio	2.3	2.3	2.3
1000 Grain Weight (g)	24.4	24.0	23.9
Grain Dimensions (Milled)			
Average Length (mm)	5.86	5.88	6.05
Average Width (mm)	2.71	2.66	2.67
L/W Ratio	2.2	2.2	2.3
Apparent Amylose (%)	18.2	17.6	17.6
Protein (%)			
Brown	8.4	8.0	7.1
Milled	7.6	6.9	6.5
Alkali Spreading Value (1.5%KOH)	6.0	6.0	6.0
Alkali Spreading Value (1.7%KOH)	6.9	6.4	6.0
Cooking Time (min)	18.5	19.2	19.0
Differential Scanning Calorimetry			
Gelatinization Temperature (°C)	67.4	69.5	68.7

	2000	2001	2002
Rapid Visco Analyzer			
AACC Method:			
Peak	259	290	251
Hot Paste	142	161	139
Cool Paste	257	274	251
Setback	-2	-16	0
Consistency	104	113	112
Breakdown	127	129	112
Pasting Temperature (°C)	73.7	73.7	73.8
Japanese Method:			
Peak	295	339	265
Hot Paste	138	161	118
Cool Paste	259	285	237
Setback	-36	-55	-28
Consistency	121	124	118
Breakdown	157	179	147
Pasting Temperature (°C)	71.7	73.2	73.6
Controlled Stress Rheometer (Pa.s)			
Peak	0.32	0.45	0.46
Hot Paste	0.20	0.27	0.29
Cool Paste	0.43	0.54	0.60
Setback	0.11	0.10	0.14
Consistency	0.23	0.27	0.31
Breakdown	0.12	0.17	0.17
Pasting Temperature (°C)	72.0	70.0	69.0

PADDY

BROWN

MILLED

Physiochemical testing provided by: *the USDA-ARS Rice End-Use Quality Research Laboratory, Rice Experiment Station, and Department of Food Science and Technology, U.C. Davis. • Samples grown and processed at the Rice Experiment Station. • Research supported in-part by a grant from the California Rice Commission.*