QUALITY CHARACTERIZATION OF CALIFORNIA PUBLIC RICE VARIETIES

M-401

M-401 is a late maturing premium quality medium grain released in 1981. It is best adapted to the warm production areas. It has a large kernel and may give lower milling yields than other medium grains. M-401 is a semidwarf mutant of the proprietary variety Terso.

U.S. MARKET TYPE:
MEDIUM GRAIN

QUALITY TYPE:
PREMIUM MEDIUM GRAIN

	2000	2001	2002
Grain Dimensions (Paddy)			
Average Length (mm)	8.83	8.61	8.68
Average Width (mm)	3.07	3.11	3.15
L/W Ratio	2.9	2.8	2.8
Grain Dimensions (Brown)			
Average Length (mm)	6.42	6.32	6.33
Average Width (mm)	2.80	2.78	2.83
L/W Ratio	2.3	2.3	2.2
1000 Grain Weight (g)	26.2	25.6	24.9
Grain Dimensions (Milled)			
Average Length (mm)	6.13	5.98	5.92
Average Width (mm)	2.73	2.72	2.69
L/W Ratio	2.3	2.2	2.2
Apparent Amylose (%)	17.6	18.7	18.1
Protein (%)			
Brown	5.6	6.9	5.1
Milled	5.2	5.9	4.6
Alkali Spreading Value (1.5%KOH)	6.3	6.5	6.0
Alkali Spreading Value (1.7%KOH)	7.0	7.0	7.0
Cooking Time (min)	16.5	18.3	18.8
Differential Scanning Calorimetry			
Gelatinization Temperature (°C)	65.7	66.2	66.3

	2000	2001	2002
Rapid Visco Analyzer			
AACC Method:			
Peak	225	253	231
Hot Paste	133	145	123
Cool Paste	232	246	218
Setback	7	-7	-13
Consistency	89	101	95
Breakdown	101	108	107
Pasting Temperature (°C)	70.3	70.0	70.1
Japanese Method:			
Peak	252	291	231
Hot Paste	123	133	104
Cool Paste	231	242	199
Setback	-20	-48	-31
Consistency	109	109	95
Breakdown	129	157	127
Pasting Temperature (°C)	70.4	68.9	82.9
Controlled Stress Rheometer (Pa.s)			
Peak	0.48	0.44	0.47
Hot Paste	0.29	0.25	0.27
Cool Paste	0.58	0.52	0.59
Setback	0.09	0.08	0.13
Consistency	0.29	0.27	0.32
Breakdown	0.20	0.19	0.20
Pasting Temperature (°C)	66.4	65.9	66.2


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.*