

# 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**

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

**QUALITY TYPE:**

**PREMIUM MEDIUM GRAIN**      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



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