

Management Guidelines Cont.

for M-401 in your area. Excessive seeding rates reduce yield potential and increase susceptibility to disease.

- Water depth should be increased to about 8 inches at panicle initiation (55 to 60 days after planting) through heading to protect panicles from low temperature exposure during occasional cool nights.

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M-402 RICE: DESCRIPTION AND MANAGEMENT GUIDELINES



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M-402

Introduction. M-402 is a new premium quality medium-grain variety released for commercial production in California in 2001. M-402 is earlier maturing and shows improved grain translucency and higher head rice milling yield in comparative tests with M-401. Responses from evaluators indicate that M-402 is similar to M-401 in cooking quality evaluations and the improved milling yield makes it of particular interest for their M-401 markets. Certified seed was available in 1999. Application has been made for plant variety protection. The following information is intended to assist growers in optimizing the yield and quality of M-402.

Description. M-402 is a late maturing, semi-dwarf, smooth hull medium-grain variety. The pedigree of M-402 includes Kokuhorose and M-401. Leaves of M-402 are erect and green in color. M-402 has averaged six days earlier heading, about two inches shorter in height, and half as much lodging as M-401. Seedling vigor, disease resistance, cold tolerance, and grain yield potential are comparable to M-401. Kernel size and weight are smaller than M-401. M-402 is susceptible to the IG-1 race of blast found in California.

Performance. Comparisons for evaluation purposes were made to the premium quality medium-grain M-401, grown extensively in California. The yield of M-402 and M-401 from 1994 to 1998 at RES and in UCCE statewide yield tests averaged 9160 and 8580 lbs/acre respectively. M-402 has shown

significantly improved grain translucency and 5 percentage points higher head rice milling yield in comparative tests with M-401. Laboratory analysis for physicochemical characteristics (apparent amylose content, protein, and gelatinization temperature) by the USDA Rice Quality Laboratory, Department Food Science and Technology at UC Davis, and RES indicate it fits medium-grain standards and is generally similar to M-401. Milled rice samples of M-402 have been distributed to selected California rice marketing organization and rice cooking quality evaluators from 1996 to 1998. M-402 is susceptible to the IG-1 race of blast found in California.

SUMMARY OF AGRONOMIC CHARACTERISTICS FOR M-402 AND M-401 1994 TO 1998 AT RES

Character	M-402	M-401
Seedling vigor (score)	4.3	4.2
Days to 50% heading	101	107
Plant height (cm)	99	103
Lodging (%)	20	40
Blanking - Davis	7	14
Blanking - San Joaquin	20	26
Blanking - Greenhouse	14	19
Harvest moisture (%)	17.5	21.4
Yield (lb/acre @ 14%)	9160	8580
Stem rot score ¹	5.2	5.5
Aggregate sheath spot score ²	2.1	2.0
Milling (%) total ³	68.8	65.5
Milling (%) whole grain ³	63.8	57.0
Brown rice 1000 grain wt (gms) ⁴	23.9	27.6
Brown rice length (cm) ⁴	6.22	6.59
Brown rice width (cm) ⁴	2.76	2.85
Ratio (L/W) ⁴	2.25	2.31

¹ Stem rot resistance visual score where 0 = no damage and 10 = plant killed.

² Number of top 4 leaves killed by aggregate sheath spot.

³ 1993 - 1998, plot values at RES

⁴ 1998 only, RES

Area of Adaption. M-402 is being released as a medium-grain rice for the premium medium-grain market that is currently being served by M-401 and Kokuhorose. Seedling vigor, disease resistance, cold tolerance and grain yield potential are comparable to M-401. Its earlier maturity, improved kernel translucency and milling yield are its advantages. It should be adapted to current M-401 growing areas; however, it would not be well suited to the coldest growing regions of California or for late planting. M-402 may not be a desirable cultivar for fields that routinely suffer significant damage from stem rot and aggregate sheath spot diseases.

Management Guidelines. The following guidelines are based on research, observation and experience gained in developing M-402. These suggested cultural practices are intended to assist in the production of optimum yields and quality of M-402.

- Uniform water depth, fertility, seed distribution and weed control are important because they affect heading, harvest moisture and in turn head rice milling yield.
- Fertilizer rates 10-12% less than for M-202 in your area. In 1999 tests at the RES, optimum N was 135 lbs/ac for M-202 while M-402 required 120 lbs/ac.
- Preferred seeding dates are May 1 to May 24. There are better variety alternatives when planting later. M-402 should be seeded at the rate of 130 to 150 lbs/acre or similar to the rate utilized