

## Calhikari-202

### Introduction:

Calhikari-202 is an early maturing, semidwarf, rough hulled (pubescent), premium quality short-grain cultivar. It was developed by the California Cooperative Rice Research Foundation, Inc. (CCRRF) at the Rice Experiment Station (RES), Biggs, CA and released to growers in April 2012. Calhikari-202 is protected under the US Plant Protection Act, Title 5 (to only be sold as a class of certified seed) as well as a US Plant Utility Patent.

### Pedigree and Breeding:

Calhikari-202 is an early selection from a cross of a sister line of Calhikari-201 with Hitomebore and has the pedigree Koshihikari\*2/S-101//Koshihikari/S-101/3/Hitomebore. Koshihikari is a more than a half-century old, tall, late maturing, lodging susceptible, pubescent Japanese premium short grain famous for its quality. Hitomebore is a short-statured, early maturing, pubescent, lodging susceptible, premium short grain also from Japan. S-101 is a very early, pubescent semidwarf variety developed at the Rice Experiment Station and is no longer in production today. The experimental designation was 04Y177. Calhikari-202 was developed as an alternative to Calhikari-201 for the premium short grain market in California.

### Agronomic Characteristics:

Tables 1 and 2 contain a summary of the agronomic data collected in the UCCE Statewide Yield Tests. Calhikari-202 seedling vigor, based on seedling vigor scores, is lower than Calhikari-201 and California medium

grains. No marked difference in sensitivity to standard rice herbicides from the parent varieties has been observed, however commercial experience is limited. Calhikari-202 maturity, as measured at days to 50% heading, averages about 3 days earlier than Calhikari-201. Lodging is a highly variable trait to measure, but testing shows Calhikari-202 is more susceptible than Calhikari-201 and much more susceptible than M-206. UCCE 2008-11 plot yields averaged 8480, 8810, and 9580 lbs/acre for Calhikari-201, Calhikari-202, and M-206, respectively. In 2010-12, Calhikari-202 gave higher yields than Calhikari-201 in 20 of 31 tests (averages were 8620 and 8220 lbs/acre, respectively.)

Table 1. Agronomic performance in UCCE Statewide Yield Tests 2008-2011.

Variety	Seedling Vigor†	Heading (days)	Lodging (%)	Plant Height (in)	Grain Yield §
Calhikari-201	5.0	93	30	36	8480
Calhikari-202	4.8	89	50	36	8810
M-206	4.9	90	15	38	9580

†SV = seedling vigor score, where 1=poor and 5=excellent.

§ Averaged over location lb/acre at 14% moisture

Calhikari-202 consistently gave lower stem rot scores than the very susceptible Calhikari-201. Growers are still recommended to bleach treat seed for Bakanae. Calhikari-202 is susceptible to the race of blast disease found in California in RES greenhouse tests. However the field resistance of Calhikari-202 to blast is not known.

### Milling and Quality:

Calhikari-202 has given higher milling yields than Calhikari-201 in studies at RES. Optimum head rice yields were achieved at 21-22% harvest moisture and can decline rapidly below 18%. M-206, by contrast, shows

a lower optimum harvest moisture and more stable response. Japanese varieties are often harvested at higher moistures to minimize kernel fissures. Kernels of Calhikari-202 are smaller than Calhikari-201 and Koshihikari.

Table 2. Average head rice of CH-202, CH-201, Koshihikari, M-206, and S-102 per moisture category taken from points in the scatter plot ion( Figure 6). Number in parenthesis is the number of data points taken from 2007-2011 milling plots.

Entry	% Moisture Content at Harvest		
	>22%	18-22%	<18%
CH202	64 (8)	65 (27)	61 (8)
CH201	62 (7)	61 (17)	57 (10)
KOSH	65 (3)	63 (11)	62 (4)
M206	62 (5)	68 (8)	66 (4)
S102	64 (2)	61 (17)	55 (8)

Physicochemical cooking quality test values for % protein content, % apparent amylose and alkali spreading value are closer to Koshihikari than Calhikari-201 ranking by as follows:Koshihikari>Calhikari-202>Calhikari-201. In several years of testing at RES, Calhikari-202 topped Calhikari-201 in quality parameters. However, the level of cooking and eating quality is slightly below the level of Koshihikari quality.

### Area of Adaptation:

The performance data collected at RES and by UCCE indicates that because of its susceptibility to low temperature blanking, Calhikari-202, like Calhikari-201, is not recommended for production in cold growing locations and late planting situations. Seed growers in 2012-13 reported that it performed well for a premium quality short grain variety.

**CALHIKARI-202 RICE:  
DESCRIPTION  
AND  
MANAGEMENT  
GUIDELINES**



**2014**

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**Management Guidelines:**

The following guidelines are based on research, observation and experience gained in developing Calhikari-202. These suggested cultural practices are intended to assist in the production of optimum yields and quality.

- Water depth should be increased to about 8 inches before panicle initiation (50 to 55 days after planting) to protect developing panicles from low temperature exposure during occasional cool nights.

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- Uniform water depth, adequate fertility, uniform seed distribution and good weed control practices are important because they maintain uniform heading and harvest moisture which in turn increase head rice milling yield.
- Fertilizer rates and other management practices should be similar to those for Calhikari-201 in your production area. Excessive N will increase lodging, blanking, disease, and lead to higher protein values which are not desired for premium cooking quality.
- Preferred seeding dates are the same as for other California varieties, Calhikari-202 is not recommended for very early plantings because of reduced seedling vigor or for late plantings because of the risk of cool temperature induced sterility (blanking). Recommended seeding rates of 130 to 150 lbs/acre. Because of the smaller kernel size, more seed are applied per acre than other grain types. Excessive seeding rates reduce yield potential and increase susceptibility to disease.