Registration of ‘Banks’ Rice

‘Banks’ rice (*Oryza sativa* L.), (Reg. no. CV-126, PI 643127) is a very high yielding, midseason, long-grain cultivar developed by the University of Arkansas Division of Agriculture, Agricultural Experiment Station. Banks originated from the backcross 'LaGrue'/5'Leumont'/RA73/3/LaGrue/4/LaGrue (cross no. 19951166), made at the Rice Research and Extension Center, Stuttgart, AR in 1995. Banks was released in January 2004 to qualified seed growers in Arkansas. LaGrue is a very high-yielding long-grain rice (Moldenhauer et al., 1994) released in Arkansas. Leumont (Bollich et al., 1985) is a long-grain semidwarf released in Texas. RA73 is a selection from ‘Bonnet 73’ (Johnston et al., 1973) irradiated with a Fission Neutron rate of 1800 R (line # STG74MU429). The experimental designation for the early evaluation of Banks was STG77P14-130, starting with a bulk of F2 seed from the 1997 panicle row P14–130. Banks was tested in the Arkansas Rice Performance Trials (ARPT) and the Cooperative Uniform Regional Rice Nursery (URRN) during 2000–2003 as entry RU0001188 (RU number indicates Cooperative Uniform Regional Rice Nursery; 00 indicates year entered was 2000; 01 indicates Stuttgart, AR; and 188 indicates entry number).

Banks is similar in maturity to ‘Drew’ (Moldenhauer et al., 1998). Banks, like ‘Ahrent’ (Moldenhauer et al., 2006a), LaGrue, and ‘Wells’ (Moldenhauer et al., 2006b), has greater straw strength, an indicator of lodging resistance, than ‘Kaybonnet’ (Gravois et al., 1995) or Drew. On a relative straw strength scale (0 = very strong straw, 9 = very weak straw) Banks, ‘Francis’ (Moldenhauer et al., 2006a), Ahrent, Wells, LaGrue, Drew, Kaybonnet, and ‘Cocodrie’ (Linscombe et al., 2000) rated 3, 3, 3, 3, 3, 3, and 2, respectively. Banks is approximately 112 cm tall which is the same as its recurrent parent LaGrue.

Rough rice grain yields of Banks have consistently ranked as one of the highest in the Arkansas Rice Performance Trials (ARPT) being comparable to the yields of Francis, LaGrue, and Wells in all 4 yr. In 20 ARPT tests (2000–2003), Banks, Francis, Ahrent, Wells, LaGrue, Kaybonnet, Drew, ‘Cypress’ (Linscombe et al., 1993), and Cocodrie produced averaged yields of 9677, 9828, 8618, 9727, 9243, 8366, 8770, 8064, and 8669 kg ha–1 [120 g kg–1 (12%) moisture], respectively. Data from the URRN conducted at Arkansas, Louisiana, and Texas during 2000–2003 and Mississippi during 2000–2002, showed that Banks average grain yield of 10332 kg ha–1 compared favorably with those of Francis, Ahrent, Wells, LaGrue, Kaybonnet, Cocodrie, and Cypress at 10432, 8316, 10080, 10231, 8820, 9173, 9425, and 8669 kg ha–1, respectively. Milling yields (mg g–1 whole kernel:mg g–1 total milled rice) at 120 mg g–1 moisture from the ARPT (2000–2003) averaged 630:710, 650:710, 640:690, 630:730, 620:700, 650:710, 650:710, 660:710, and 670:710 for Banks, Francis, Ahrent, Wells, LaGrue, Kaybonnet, Drew, Cocodrie, and Cypress, respectively. Milling yields for the URRN during the same period of time, averaged 560:680, 590:690, 590:680, 570:700, 570:690, 610:690, 610:700, 610:700, and 640:700 for Banks, Francis, Ahrent, Wells, LaGrue, Kaybonnet, Drew, Cocodrie, and Cypress, respectively.

Banks, like Kaybonnet, Drew and Ahrent, is resistant (R) to common rice blast [*Pyricularia grisea* (Cook) Sacc.] races IB-1, IB-49, IB-54, IC-17, IG-1 and IH-1 under Arkansas conditions, with ratings of R, MR, R, MR, R, and R respectively, using the standard disease scale R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible and VS = very susceptible to disease. Like Katy, Kaybonnet, Drew and Ahrent, Banks is susceptible to the blast race IB-33. Banks rates VS to the blast race IE-1k compared to Katy, Kaybonnet, Drew and Ahrent which rate S. Banks is rated MS to sheath blight (*Rizoctonia solani* Kühn) compared to Francis (MS), Ahrent (MS), Wells (MS), LaGrue (MS), Kaybonnet (MS), Cypress (VS) and Drew (MS). Banks is rated VS for kernel smut [*Tilletia barberiana* (Bred.) Sacc. & Syd. in Sacc.] in comparison to Francis (VS), Ahrent (MS), Wells (MR), LaGrue (VS), Kaybonnet (MS), Cypress (VS) and Drew (MS).

Banks is rated S to stem rot [*Magnaporthe干活ni* (Cattaneo R. Krause & R. K. Webster), MR to leaf smut [*Enylytrina oryzae* Syd. & P. Syd.], R to brown leaf spot [*Cochliobolus miyabeanus* (Ito & Kuribayashi in Ito) Drecch. ex Dastur], MR to narrow brown leaf spot [*Cercospora oryzae* Miyake], and S to false smut [*Ustilaginae virens* (Cook) Takah]. Banks, like LaGrue, is susceptible for discolored kernels, caused by the rice stink bug (*Oebalus pugnax*). Banks rating of MS to straighthead, a physiological disorder, is similar to LaGrue and Francis.

Plants of Banks have erect culms, dark green erect leaves, and glabrous lemma, palea, and leaf blades. The lemma and palea are straw colored with colorless apiculi, and some short tip awns are present on the lemma at maturity. Kernels are similar in size to those of Ahrent and Drew. In the ARPT (2000–2003) individual milled kernel weights of Banks, Francis, Ahrent, Wells, LaGrue, Kaybonnet, Drew, Cypress, and Cocodrie, averaged 17.1, 16.7, 16.2, 19.3, 17.9, 15.1, 16.2, 17.7, and 17.9 mg, respectively.

The endosperm of Banks is nonglutinous, nonaromatic, and covered by a light brown pericarp. Rice quality parameters indicate that Banks has typical southern U.S. long-grain rice cooking quality characteristics as described by Webb et al. (1985). Banks has an average apparent starch amylose content of 228 g kg–1 and an intermediate gelatinization temperature (70–75°C), as indicated by an average alkali (17 g kg–1 KOH) spreading reaction of 3 to 5.

The foundation seed field of Banks was rogued several times throughout the season. The variants that may be found in the release include any combination of the following: taller, shorter, earlier, later, glabrous or pubescent plants, as well as intermediate or very long slender grains and grains with long awns. Other atypical plants may still be encountered in the cultivar. The total variants and/or off-types numbered less than 1 per 5000 plants.

Application for a utility patent for this cultivar has been made to the United States patent office (Serial number 11/036,729; filed January 14, 2005). Breeder and Foundation seeds of Banks will be maintained by the University of Arkansas Division of Agriculture, Rice Research and Extension Center, 2900 Hwy 130 E., Stuttgart, AR 72160. Requests for seeds must be made to the corresponding author until 20 years from the date of patent application filing by the University of Arkansas Division of Agriculture, Agricultural Experiment Station (2005), at which time seed will also be available from the NPGS.


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References