The procedure for milling small samples (2- to 15-grams) of raw and parboiled rice with the improved test-tube miller is described. Small, cleaned samples of rough rice (free of poorly filled grains, stems, and other foreign material) are hulled with the modified McGill shell. The sheller was modified by removing the leather flap leading into the aspirating leg. This modification prevents mixing of samples caused when grains of rice are trapped by the leather flaps during the hulling operation. It is important to avoid mixing of samples because the laboratory testing procedures used in evaluating cooking and processing behavior require only a few grains of rice. After hulling, approximately 5 grams or less of hulled rice and 5 grams of abrasive are placed in each of the 15- x 150-mm. test tubes or 5- to 15-grams of hulled rice and an equal weight of abrasive in the 25- x 200-mm. test tubes. Any unhulled grains remaining in the sample after passing through the sheller should be removed before milling as the milling process usually will not remove the hull from a grain. The test tubes are stopped with synthetic rubber (neoprene) stoppers and inserted in the appropriate interchangeable test-tube blocks. Neoprene stoppers are preferred as they are highly resistant to the abrasive action of the milling process and do not cause undesirable discoloration of the milled sample of rice. The test-tube blocks containing the samples are mounted in the miller and shaken continuously for 45 minutes at a speed of 300 strokes per minute (3½-inch stroke). After shaking (scouring) the milled samples are removed and polished with the small-sample rice polisher described by Scott et al. The polishing operation removes adhering particles of bran, germ, floury bits of endosperm and abrasive material, leaving a clean and highly polished sample of milled rice for laboratory analysis. Broken particles of polished rice may be removed from the sample with the rice-sizing device using a Number 7 indented plate. Parboiled samples are hulled, milled, and polished according to the procedure described except a shaking time of 60 to 90 minutes is required for a satisfactory milled product. This procedure may also be adapted for use with either of the test-tube millers shown in Figures 1 and 2.

4 Mention in this publication of a trade product, equipment, or a commercial company does not imply the endorsement by the U.S. Department of Agriculture over similar products or companies not named.


A SMALL-SAMPLE RICE-POLISHING MACHINE

J. E. Scott, B. D. Webb, and H. M. Beachell

The chemical and physical testing procedures used at the Regional Rice Quality Laboratory located at the Rice-Pasture Research and Extension Center, Beaumont, Texas, for evaluating the cooking and processing behavior of rice, has been described by Scott et al. The small-sample rice-polishing machine is described here to demonstrate how millers can be adapted for polishing small samples of rice. The miller described by Scott et al.5 is designed to handle 200-mm. test tubes or 15-grams of raw rice and 5 grams of abrasive. The machine is adapted as follows: A small-sample rice polisher described by Scott et al.6 The polishing operation removes adhering particles of bran, germ, floury bits of endosperm and abrasive material, leaving a clean and highly polished sample of milled rice for laboratory analysis. Broken particles of polished rice may be removed from the sample with the rice-sizing device using a Number 7 indented plate. Parboiled samples are hulled, milled, and polished according to the procedure described except a shaking time of 60 to 90 minutes is required for a satisfactory milled product. This procedure may also be adapted for use with either of the test-tube millers shown in Figures 1 and 2.

4 Mention in this publication of a trade product, equipment, or a commercial company does not imply the endorsement by the U.S. Department of Agriculture over similar products or companies not named.


A SMALL-SAMPLE RICE-POLISHING MACHINE

J. E. Scott, B. D. Webb, and H. M. Beachell

The chemical and physical testing procedures used at the Regional Rice Quality Laboratory located at the Rice-Pasture Research and Extension Center, Beaumont, Texas, for evaluating the cooking and processing behavior of rice, has been described by Scott et al. The small-sample rice-polishing machine is described here to demonstrate how millers can be adapted for polishing small samples of rice. The miller described by Scott et al.5 is designed to handle 200-mm. test tubes or 15-grams of raw rice and 5 grams of abrasive. The machine is adapted as follows: A small-sample rice polisher described by Scott et al.6 The polishing operation removes adhering particles of bran, germ, floury bits of endosperm and abrasive material, leaving a clean and highly polished sample of milled rice for laboratory analysis. Broken particles of polished rice may be removed from the sample with the rice-sizing device using a Number 7 indented plate. Parboiled samples are hulled, milled, and polished according to the procedure described except a shaking time of 60 to 90 minutes is required for a satisfactory milled product. This procedure may also be adapted for use with either of the test-tube millers shown in Figures 1 and 2.

4 Mention in this publication of a trade product, equipment, or a commercial company does not imply the endorsement by the U.S. Department of Agriculture over similar products or companies not named.
