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Effect of grain size and moisture content on dehulling and milling characteristics of sorghum (*Sorghum bicolor* L.)**Youngho Yoon, Kiyuol Jung, Youngdae Choi and Sumin Cho**
National Institute of Crop Science, South Korea

Grain sorghum (*Sorghum bicolor* (L.) Moench) has been widely consumed as traditional food such as steamed kernels with rice and beverages in Korea. In this study, effects of separation of seeds by size and grain moisture content on milling recovery and quality were investigated. Previous study reported that dehulling and milling of sorghum seeds after seed size screening affects milling recovery ratio and quality. The first experiment of this study focused on difference of ratio of the milled grains, intact grains (true whole grain after milling) and whiteness among 4 sorghum cultivars after grain sorghum were milled by polishing machine for the same amount of time (2 minutes and 30 seconds). Greater size of seeds had greater ratio of the milled grains and whole intact grains, whereas sorghum grains with no size screening of grain and smaller sizes than 3.5 mm had the smallest ratio of the milled grains and intact grains. When seeds with greater sizes than 4.0 mm were milled, the ratio of intact grains was ranged between 77.4 and 85.0 depending on cultivars. This result was 4.5% greater than ones from no size screening of grain. The whiteness of seeds that were milled under the same conditions had the greater values from seed sizes greater than 4 mm than ones from no screening throughout the all cultivars. This experiment resulted in that smaller seeds needed a longer milling time in order to achieve the same whiteness level as bigger seeds. The other experiment in this study investigated effects of the moisture content in grain sorghum by hot air drying on milling recovery rate and quality. Previous study reported that seeds were milled after drying for a certain time since moisture content in grain were ranged between 14.3 and 27.6% on 45 days after heading by cultivar. Result showed that as seeds had smaller than 16% of moisture content, they tended to have greater whiteness levels, but smaller milled head grain recovery rates. The future research will focus on method for drying and optimal moisture content in grain sorghum to prevent seed decay and higher milling recovery and quality.

Biography

Youngho Yoon is a Senior Researcher in National Institute of Crop Science, Rural Development Administration (RDA) in South Korea. He has been devoted to the study of development of buckwheat variety and post-harvesting of miscellaneous grain crop such as sorghum, millet and buckwheat. He has contributed a wealth of information concerning functionality through his research of tatar (bitter) buckwheat. Recently, he has interested in the stable production of upland farming and the promotion of agricultural mechanization. He is acting as Assistant Administrator of 'Mechanization in Upland Farming and Value Added Agriculture' project at RDA.

highland700@hotmail.com

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