

The impact of different drying methods on rice grain quality characteristics

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Abstract

After the harvest of paddy, it needs thorough drying to reduce its moisture content to the safe level and to preserve the paddy. The method of drying and time of exposure to heat or any other drying practices may affect the final grain quality of rice. A study was conducted at Rice Research and Development Institute, with six popular rice varieties (Bg 300, Bg 352, Bg 358, Bg360, Bg 306 and At 405) to investigate the effect of three different drying procedures (sun, shade and mechanical drying) on rice grain quality parameters. The treatments were triplicated and arranged in a completely randomized design. Percentage of total milled rice (TMR), percentage of broken grains (BG), Grain hardness (RG), Grain whiteness (WH) and cracked grain percentage (CR) were tested according to the standard practices of International Rice Research Institute. Different methods have influenced rice quality parameters differently except BR and TMR. Except Bg 358, mean BG of all varieties, were significantly high in sun dried samples compared to shade-dried. The increase of hardness in sun dried and electrical dried were 14.6% and 8.95 respectively compared to shade dried. Mean value in CR (22.2) was significantly higher in sun dried compared to others. Lowest CR was observed in shade dried samples of Bg 300, Bg 352 and Bg 360 compared to other methods. Different varieties showed different levels of significance on grain whiteness. Bg 300, Bg 358, Bg 360 and At 306 were not influenced by any drying method for their whiteness. Sun drying has mainly influenced the increase in BG, CR and RG in varieties. However the quality parameters were governed not only by the method of drying but also the variety and many other factors.

Keywords: Paddy, Drying Methods, Rice Quality