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**Effect of stabilization thermal treatments on extractability, oxidative stability and antioxidant activity of rice bran oil of the rice variety “Ld 368”**

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Rice bran is a nutritious yet underutilized byproduct of rice milling, because its quality easily degraded by rancidity. Therefore, stabilization pretreatment is essential in preventing rancidity before further industrial use, as it inactivates resulting enzymes for rancidity. This study was conducted to determine how these stabilization pretreatments affect extractable oil yield, contribution in preventing rancidity and antioxidants like essential compounds. Freshly milled rice bran samples of the rice variety “Ld 368- red” were collected for this study as it is a generally grown cultivation and specially found in wet zones. Four stabilization treatments tested in this study, which are easily adaptable even for small and medium scale industrial establishments such as steaming (100 °C, 30 minutes), hot air drying (105 °C, 1 hour), microwave drying (900 W, 3 minutes) and a coupled treatment (Microwave and Steaming). These processing conditions selected as they identified as optimum conditions in terms of prevention of rancidity in previous studies. Collected rice bran samples stabilized using above treatments and compared with unstabilized rice bran samples. Extraction of rice bran oil was conducted by solvent extraction method. The highest extraction yield obtained from the rice bran stabilized by coupled treatment, followed by microwave drying, steaming, and hot air drying. Stabilized rice bran under the four treatments showed significantly low free fatty acid and peroxide values compared to the unstabilized rice bran. The coupled treatment and microwave treatment were the most effective stabilization pretreatments for rice bran in terms of oxidative stability, as it showed the lowest free fatty acid content and peroxide value. There was a significant difference of antioxidant activity of rice bran oil obtained from stabilized and unstabilized rice bran samples. Microwave drying is the most effective method in preserving antioxidants in bran oil, as it showed the highest antioxidant activity.

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