

## Effect of premilling treatments on colour analysis of kodo (*Paspalum scrobiculatum* L.) millet

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Accepted : March, 2009

### ABSTRACT

The pre-milling treatments viz., soaking for 60-300 min at 60, 70, 80°C, steaming for 30 min prior to milling and roasting for 15 min prior to milling were given to the samples. Pre-treatment helped to improve head yield recovery and processing quality. The yellow index (YI) of untreated kodo grains is 47.61 while the whiteness index is -144.74. Upon applying the different treatments the roasted sample showed a slight decrease in YI and increase in WI while with the other two treatments soaking and steaming the WI decreased the YI slightly increased or remain unchanged. Looking at the WI and YI of shelled kernels it can be stated that the WI of roasted milled kernels was highest (-78.36) followed by steamed milled kernels (-110.73) and the soaked milled kernels had the poorest (-140.78) WI. Similarly, the YI of the roasted milled sample was observed to be minimum (34.98) followed by steamed milled sample (41.19) and the soaked milled sample had highest value of YI *i.e.*, 46.36. This indicated that the soaking imparted the yellowish colour to the grains, which in turn resulted in dullness. Roasting improve the brightness as indicated by WI and YI. The roasting of grains also improve the colour of puffed kernels as can be seen that the minimum value of YI and highest value of WI for puffed product. In cooking also similar was the observation and it can be depicted that the minimum YI (16.81) and maximum WI (-35.87) were recorded for the roasted cooked samples whereas the poorest whiteness and yellowness indices were recorded for soaked cooked samples. From the above findings it can be concluded that among all the treatments the roasted resulted the superior product from the point of view of colour.

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**Key words :** Kodo millet, Soaking, Steaming, Roasting, Milling, Colour analysis

This study provides an adequate process to determine colour values of kodo millet. Pre-milling treatments like soaking, steaming, roasting given to kodo prior to it's milling, puffing, cooking to determine its quality on the basis of colour values. The pre-treatment is necessary not only for the maximum recovery of head yield but also for the consequent processing of the grains. Presently, the colour values are done by using Hunter Lab Calorimeter. Therefore, it was realized that measurement of colour not only helps to determine quality, it can tell us many things. It is also well known that processing can be responsible for change in some quality attributes of millet derivatives, among which the color of the processed product is one of the most important.

Food colour not only helps to determine quality, it can tell us many things. It is also well known that processing can be responsible for change in some quality attributes of millet derivatives, among which the color of the processed product is one of the most important. Millets have been utilized for human food from prehistoric times. Currently, millets are consumed in northern China, India, Africa, and Southern Russia, with about 80 % of the crop consumed directly as human food. Millet grain is also used

for the production of rice-like products and porridges. In Africa, millet is consumed primarily in the form of thick and porridges (fermented or unfermented), flatbreads (fermented or unfermented), steamed or boiled cooked products, snacks, alcoholic beverages, and in composite flours for bread, cookies, noodles, etc. In Nigeria, millets are dry-milled into flour for production of Tuwo and Barabusco or mixed with wheat flour for production of biscuits and bread

Kodo millet (*Paspalum scrobiculatum* L.) is a good source of protein, carbohydrate and rich source of minerals, fibers, vitamins and micronutrients and nutritionally superior to rice and wheat having all the required nutrients for human due to which it is a staple food of some tribals of North India especially in the belts of Madhya Pradesh (India) and kodo is suitable for industrial utilization as foodstuff (Shinoj *et al.*, 2006). Kodo millet (*Paspalum scrobiculatum* L.) comes in the category of coarse cereals and cultivated mostly in India, China, USSR, Japan and Africa (Hadimani and Malleshi, 1993; Malleshi and Desikachar, 1985). The present study was under taken to study the effect of soaking, steaming and roasting as pre-treatments on colour characteristics