

ABSTRACT

**The processing of Pigeon peas (*Cajanus cajan*) for Dhal
Manufacture**

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Pigeon pea can be consumed in the form of dhal or dehusked splits. In this report, the milling characteristics (dehusking and splitting) of the most extensively grown variety of pigeon pea - the Chaguaramas Pearl, has been investigated.

The aim of this study was to determine the conditions and parameters under which optimum dehusking and splitting of pigeon pea grains to dhal is obtained and also to suggest ways of reducing and/or utilizing the losses which occur during processing.

Four pre-milling treatments were tested. Three of these can be described as wet methods and the last or Control method is described as a dry method. The pre-milling treatments tried were: 1) Wet Methods which involved soaking in - a) Water, b) Acetic acid and c) Sodium bicarbonate, followed by drying and 2) Dry Method where no soaking was done prior to drying.

For all treatments, the dehusking efficiency increased with increasing drying temperature and drying time. The opposite effect was observed for the yield although there was significantly less variation among the yield values. The significance of concentration and soaking time depended on the severity of the drying conditions.

That is, their effects were more pronounced at the lower drying times and lower drying temperatures.

The acetic acid pre-treatment gave the highest dehusking efficiency and yield values. The water pre-treatment gave values which were only slightly lower than those obtained with the acetic acid, while the sodium bicarbonate treatment yielded the lowest values. The Control treatment gave yield and dehusking efficiency values which were comparable in magnitude to those of the acetic acid and water treatments.

The sensory quality of the resultant dhal appeared best for the acetic acid and the Control treatments. Again drying temperature and drying time were of utmost importance. Drying temperatures of 60°C and 70°C appeared to give the best quality dhal. In general, soaking times greater than three hours and concentrations beyond 2% significantly affected the quality of the dhal.

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