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Research Paper :

Study on effect of milling on quality and nutritive value of finger millet flour (*Eleusine coracana*)

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ABSTRACT

Fineness modulus of flour increased with the increase in plate clearance. As the feed rate and plate speed increased upto an optimum level, the fineness modulus decreased and further increase in feed rate and plate speed, increased the fineness modulus. Fineness modulus increased from 2.04 to 3.44 and 2.05 to 3.45 with the increase in plate clearance from 0.3 to 0.7 mm for the ragi flour from varieties GPU-28 and L-15, respectively. The least fineness modulus was recorded at 0.3mm clearance followed by 0.5 mm. Fineness modulus decreased from 2.18 to 2.04 and 2.21 to 2.05 with the increase in feed rate and attained the least value at a feed rate of about 100 kg/h for GPU-28 and L-15 ragi flours. Beyond this, the fineness modulus increased as the feed rate increased. Fineness modulus decreased from 2.36 to 2.04 and from 2.37 to 2.05 as the plate speed increased from 450 rpm to 600 rpm and it increased with further increase in plate speed in case of both the varieties of ragi. The fineness modulus recorded the least values of 2.04 and 2.05 at 600 rpm plate speed for GPU-28 and L-15 varieties ragi flour, respectively. Loss of calcium from 0.53 to 0.33 per cent phosphorus from 0.25 to 0.22 per cent and protein from 11.45 to 10.35 per cent was recorded with the decrease in plate clearance from 0.7 to 0.3 mm for GPU-28 ragi flour. The minimum loss recorded was at 0.7 mm clearance followed by 0.5 mm. Calcium, phosphorus and protein values reduced from 0.49 to 0.33, 0.25 to 0.16 and 11.62 to 10.29 per cent for GPU-28 flour, respectively as the plate speed increased from 450 to 700 rpm. The maximum reduction was noted at 700 rpm plate speed compared to 600 and 450 rpm.

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Key words : Fineness modulus, Plate clearance, Plate speed, Feed rate