Evaluation of different types of spice grinding machinery for their performance for different types of spice product

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The volatile oil, color, particle size distribution and cost of production are considered to define the quality of coarse pepper powder and fine pepper powder as these properties reflect the consumers' acceptance and therefore the market price.

The pin mill performed best as a single machine in terms of particle size of ground product among two types of pepper processing machinery. However, combination of plate mill gives little bit lesser cost of production.

The machinery combination of one pass through pin mill and second pass through similar mill with the screen 1000 micron are the best combination for producing coarse pepper and fine pepper powder respectively. This first combination produces a particle size of 600µm coarse pepper and second combination produces fine pepper powder with 425 µm as well. The L value of hue angle, Volatile oil content/100g on dry basis and moisture content for coarse pepper and fine pepper are 56.32, 0.6%, 12.66% and 55.54,0.6%,12.12% respectively and all these parameters are comply with SLSI specification. The energy consumptions per kilogram of coarse pepper and Pepper powder in these combinations are 0.154kWh and 0.491kWh.

Curry powders are consisted with different materials according to the recipe. Grinding was evaluated according to the tested recipe. For grinding evaluation of curry powder, main raw materials; coriander, cumin and sweet cumin were used in both types; roasted and unroasted according to the percentage in tested recipe. The method of grinding of curry powder was succeeded with the combination of plate mill and disk mill. Using the plate mill for the first pass

and disk mill with 1000 micron for second and third pass was the best combination for processing of curry powder.