

Re-Engineering of Traditional Indian Wadi into Ready-to-Use High Protein Quality and Fibre Rich Chunk

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Abstract : In the present study an attempt has been made to re-engineer traditional wadi into wholesome ready-to-use cereal-pulse-based chunks rich in protein quality and fibre content. Chunks were made using extrusion-dehydration combination. Two formulations i.e., whole green gram dhal with instant oats and washed green gram dhal with whole oats were formulated. These chunks are versatile in nature as they can be easily incorporated in day-to-day home-made preparations such as pulao, potato curry and kadhi. Cereal-pulse ratio was calculated using NDpCal%. Limiting amino acids such as lysine, tryptophan, methionine, cysteine and threonine were calculated for maximum amino acid profile in cereal-pulse combination. Time-temperature combination for extrusion at 130^oC and dehydration at 65^oC for 7 hours and 15 minutes were standardized to obtain maximum protein and fibre content. Proximate analysis such as moisture, fat and ash content were analyzed. Protein content of formulation was 62.10% and 68.50% respectively. Fibre content of formulations was 2.99% and 2.45%, respectively. Using a 5-point hedonic scale, consumer preference trials of 102 consumers were conducted and analyzed. Evaluation of chunks prepared in potato curry, kadi and pulao showed preferences for colour 82%, 87%, 86%, texture and consistency 80%, 81%, 88%, flavour and aroma 74%, 82%, 86%, after taste 70%, 75%, 86% and overall acceptability 77%, 75%, 88% respectively. High temperature inactivates antinutritional compounds such as trypsin inhibitors, lectins, saponins etc. Hence, availability of protein content was increased. Developed products were palatable and easy to prepare.

Keywords : extrusion, NDpCal%, protein quality, wadi

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