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Optimization of iron and calcium rich formulation using response surface method

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Abstract: In the current examination endeavors have been made to create a ready to use iron and calcium rich “Nutrimix” and evaluating its physiochemical properties and proximate composition with respect to optimize process variables such as particle size, moisture content and anti-caking agent using response surface methodology (RSM). The experiment was designed to analyze water activity (aw), oil holding capacity (OHC), water holding capacity (WHC), density, colour index (CI) and overall acceptability (OAA) as a response variables. Optimization techniques were chosen to obtain the optimum levels of process variable for the development of iron and calcium rich nutrimit. The optimum conditions were found at 250 micron particle size, 13% moisture content and 5% anti-caking agent of formulation that gives $304.22\% \pm 0.015$ for WHC, $146.87\% \pm 0.177$ for OHC, 0.702 ± 0.010 for aw, 0.454 ± 0.016 g/ml for density, 27.2 ± 0.568 for colour index and 7.6 ± 0.321 for overall acceptability of nutrimit.

Key words: Nutrimit, iron, calcium, partical size, anti-caking agent.