PRODUCTION AND EXPORTATION OF MULTI-NUTRIENT EXTRUDED RICE KERNEL (MNERK) WITH IRON AND ZINC TO VIETNAM

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BACKGROUND

More than 2 million Vietnamese children (5 years old) are stunted and have undeveloped bones, while over 1 million are acutely malnourished (NIN, 2013). To address this problem, the National Institute of Nutrition (NIN) of Vietnam forged collaboration with the Department of Science and Technology-Food and Nutrition Research Institute (DOST-FNRI) with the funding support of ILSI-Japan CHP, Taiyo Kagaku Co., Ltd., Japan and the Global Alliance for Improved Nutrition (GAIN).

OBJECTIVES

The study aimed to produce and export DOST-FNRI developed technology on multi-nutrient extruded rice kernel (MNERK) with iron and zinc to NIN, Hanoi, Vietnam.

MATERIALS AND METHODS

MNERK with iron and zinc was produced at FNRI Pilot Plant Processing Facility using hot extrusion process. The kernel was tested and evaluated for its quality in terms of physico-chemical, nutrient, contaminants, sensory and microbiological properties and exported to Vietnam via sea-freight. Visit to the study site in Thai Bhin Province, Hanoi was also conducted to monitor the exported rice kernel, Vietnamese fortified rice and blending operation of the rice miller.

RESULTS

Certificate of Analysis (COA), Export Permit and Phyto-sanitary certification were accomplished and sent to NIN. About 100% of the MNERK samples analyzed were within the standard set by DOST-FNRI for iron (3.6-4.8 mg/g) and zinc (1.6-2.3 mg/g). About 100% of the MNERK samples tested for sensory evaluation were rated "like moderately" to "like very much" (Philippines) and "would love" to "extremely interested" (Vietnam).

CONCLUSION AND RECOMMENDATION

Four (4) tons of multi-nutrient extruded rice kernel (MNERK) with iron and zinc exported to Vietnam were found to be safe and conformed to the DOST-FNRI and Codex Standards. Blending machine in Le Hanh Rice Mill, Hanoi, Vietnam was efficient and Vietnamese rice was found to conform to the requirement of DOST-FNRI and NIN. As a result of this partnership, the DOST-FNRI was recognized as technology provider of extruded multi-nutrient rice kernel with iron and zinc by the international market. The forging of private-public partnership towards this end may help reduce prevalence of micronutrient deficiency globally. The study recommends that more efforts on technology development with multi-nutrients, pilot-testing and subsequent commercialization be conducted to address other micronutrient deficiencies.