

Zinc ferti-fortification for improving cereal production and alleviating zinc malnutrition

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ABSTRACT : Due to adoption of cereal based monoculture and injudicious agronomical practices, Zn deficiency (ZnD) noticed in nearly 49 per cent of Indian soil, during post green revolution era. This ZnD not only reduced the crop production but also reduced content of Zn in cereal grains. Furthermore, growing of cereals in Zn deficient soil as well major dependence of cereal based diet leads to ZnD in nearly 26% of Indian population. Alleviation of Zn malnutrition in human being can be achieved by nutraceutical and biofortification approaches. However, nutraceutical approach requires heavy investment and many a times not affordable to large segment of Indian population. Thus, adoption of biofortification approach proves to be a sustainable and economical approach to alleviate Zn malnutrition. Biofortification can be achieved by two ways, i.e. genetic biofortification and ferti-fortification (agronomic biofortification). Genetic biofortification requires a long period, adequate funds and many a times not accepted in some countries. Ferti-fortification approach includes, appropriate source, time, method and quantity of Zn fertilization, to enhance Zn content in the cereal grain. Additionally, it also helps to increase cereal production. Thus, ferti-fortification offers short term, technologically and economically feasible options to increase Zn content in cereal grain and consequently help to alleviate Zn malnutrition hazards commonly visible among Indian population.

Key Words: Agronomic biofortification, micro-nutrient malnutrition, zinc nutrition.