Fertilizing Crops to Improve Human Health

Countries are implementing successful partnerships worldwide to develop macro and micronutrient fertilization.

**Indonesia**
Up to four times higher yields for smallholder farmers in the state of Java, through the Bhoochetana government program in partnership with ICRISAT. Fertilizers were biofortified with zinc, boron, and sulphur. Yields for rice crops increased up to 343% with sunflower, 300% with sesame, 250% with mustard, and 275% with sorghum.

**Finland**
Combating heart disease
From 1984, the government mandated the addition of selenium to all multi-nutrient fertilizers in order to help combat heart disease.

**Ireland**
Eradicating iodine deficiencies through fertigation
Adding potassium iodate to irrigation canal water in the Galway province resulted in a three-fold increase in soil iodine levels, a 50% reduction in infant mortality, and an almost total elimination of iodine deficiency disorders in the area.

**Australia & New Zealand**
Functional foods: selenium enhanced
Biofortifying wheat with selenium fertilizers helps enhancing nutrient levels and market the wheat as a with likely human health benefits. Broccoli is one of the most promising anti-cancer foods.

**Turkey, India, Australia & South Africa**
More grain nutrients and production in semi-arid regions
Zinc deficiency in wheat often occurs when water supplies to soil are impaired due to limited precipitation and irregular distribution of rainfall. Maintaining a high amount of plant available Zn in soil in semi-arid regions contributes to grain Zn concentration and also better grain yield. Over 8 million ha of land in southern Australia were brought into grain and the pasture production in the 1950s after recognizing that micronutrient deficiencies were a major constraint to profitable yields.

**Finland**
Combating heart disease
From 1984, the government mandated the addition of selenium to all multi-nutrient fertilizers in order to help combat heart disease.

**India**
Up to four times higher yields for smallholder farmers in Karnataka State, through the Bhoochetana government program in partnership with ICRISAT. Fertilizers were biofortified with zinc, boron, and sulphur. Yields for rice crops increased up to 343% with sunflower, 300% with sesame, 250% with mustard, and 275% with sorghum.

**China**
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Smart fertilization practices provide the necessary micronutrients for healthy plants and balanced human nutrition.