



CERTIFIED
CROP ADVISER

Fertilizers for Food and Nutrition Security

by Dr. Tom Bruulsema, CCA

The use of fertilizer contributes in a big way to food and nutrition security. It is estimated that at least half of the world's population now depends on fertilizer for growing their food supply. Increasing agricultural productivity over the last 50 years has contributed to making more people food secure than ever before. However, large areas of the world still suffer from chronic hunger and persistent shortages, and micronutrient deficiencies affect the lives of over two billion people. The strategy for sustainably intensifying food production must direct fertilizer stewardship to improve human nutrition security.

Considerable history lies behind the term “food and nutrition security.”

In 1943, representatives of 44 nations gathered in Virginia to consider the goal of “freedom from want” in relation to food and agriculture. According to the Committee on World Food Security of the United Nations, they concluded it meant a secure, adequate and suitable supply of food. “Secure” meant access to food, “adequate” meant enough supply, and “suitable” referred to its quality in terms of nutrient content. In the war-torn Europe of the day, the prevailing levels of hunger focused attention mainly on calories and protein.

By the mid-1990s, “food and nutrition security” had come to mean more than just access. It had become a measure of people actually having gained adequate nutritional status. To achieve it therefore required more than just increased production; it would entail as well education and motivation for people to consume the right foods, along with fitness, health and sanitation improvements to ensure that those consuming the foods could absorb and utilize them.

Food and nutrition security also addresses the “triple burden” of malnutrition: first, hunger, or insufficient intake of dietary energy; second, hidden hunger, related to deficiency of micronutrients, vitamins and trace elements;

and third, overweight and obesity, arising from excess intake of dietary energy. The number of people in the first category has declined from over one billion to 842 million globally, over the past 21 years. While more than 98% of them are found in developing countries, governments in Canada and the USA still report substantial percentages—7% to 14%—of their populations that are “food insecure” as well. Globally, people in the second and third categories greatly outnumber those in the first.

How is all of this relevant to fertilizer use?

First, fertilizers are improving both the quantity and quality of food. Many of the minerals essential for plant growth are also essential or beneficial for human health. A farm's adaptive management cycle can assess the outcome of plant nutrition decisions in terms of the nutritional qualities of its crops as well as their quantity. Fertilizing cereals with zinc, for example, increases zinc availability in the human diet.

Second, on a more strategic level, farmers and the service providers that support them can consider how to diversify agriculture to better meet human nutritional needs. Many malnutrition issues are due not to an overall shortage or surplus, but to lack of balance – not enough production of the crops needed for health, and too much consumption of those that, in excess, diminish human health. The fertilizer industry seeks to become the plant nutrition resource for those working to align agriculture's production to current human nutritional needs.

Third, the fertilizer industry recognizes that sustainable agricultural intensification minimizes the losses of fertilizer nutrients that might affect the health of ecosystems on which human health depends.

Improving food and nutrition security comprises a grand challenge that continues to demand attention. The fertilizer industry, along with many sectors including those beyond agriculture, plays an important role.

For copies of this article and a complete catalogue of previously published columns, check our website www.ccaontario.com under the “Agronomic Articles” tab.

Dr. Tom Bruulsema is a Certified Crop Adviser employed by the International Plant Nutrition Institute as their Northeast Director located in Guelph. Contact Tom at (519) 835-2498 or tom.bruulsema@ipni.net

There are over 500 Certified Crop Advisers (CCA) in Ontario. Each CCA has demonstrated their knowledge about Ontario crop production by passing the required exams. In addition, they have the crop advisory experience, the education, the commitment to continuing education and have signed a comprehensive code of ethics, which places the grower's interests first.

This industry driven program helps ensure that Ontario crop producers are well served by those providing their crop production advice. This article was written by one of those CCAs.

