NUTRIENTS ARE ESSENTIAL FOR HUMAN HEALTH

Fertilising Crops to Improve Human Health

'**Plant Nutrition and Health Risks Associated with Plant Diseases**' by Don M. Huber.

Part 04

Fertilisers & Human Health
An 8 Part Series

Main Message

The key message is centred around the increased susceptibility to infectious disease being a common result of nutrient deficiency (as cited in the publications of Datnoff et al., 2007; Evans et al., 2000; Huber, 1991; Huber and Graham, 1999).

Infectious diseases intensify nutrient deficiency of plants and further reduce their nutritional value for food or animal feed. Therefore, adequate nutrition is an important means of reducing many diseases.

Nutrient deficiencies can be overcome by a range of actions including increased nutrient availability, more efficient plant uptake, increased physiological efficiency and improved disease control.

A well-balanced nutrition program, (integrated with other crop production or traditional practices), generally provides the best opportunity for maximum disease suppression, increased production efficiency and greater crop yield and quality.

Key Points

- A common result of nutrient deficiency in plants is increased susceptibility to infectious disease.
- Infectious diseases intensify the nutrient deficiency of plants and reduce their nutritional value.
- A well-balanced nutrition program, (integrated with other crop production and/or fertiliser practices) generally provides the best opportunity for maximum crop disease suppression.
- Key benefits of plant nutrient sufficiency are achieved through increased production efficiency, and greater productivity of more nutritious and safer foods.

> "The global community should be outraged by the millions of children that either die or are disabled each year because of malnutrition. We know how to prevent and treat it. The missing link is the political will to place nutrition squarely on the development agenda and to commit the necessary resources to implement programs, particularly food fortification, that we know can deliver sustainable improvements not only to the current generation of people at risk but to the lives of generations to come".

Source: Marc Van Ameringen, Executive Director, GAIN
Quoted in 'Investing in the Future, A United Call to Action on Vitamin and Mineral Deficiencies', 2009

RLF-treated cucumber crop in Wudatai Village, Anhui Province, May 23, 2018.

RLF. 25+ Years of Plant Nutrition.

RLF Specialty Liquid crop nutrition fertilisers have been developed, manufactured and continually refined over a period of more than 25 years to a position today where our products are targeted to provide the nutrition needs of any particular crop, or for any particular deficiency.

RLF's acclaimed Integrated Fertiliser Management (IFM) approach is designed to fully support the needs of the plant or crop, and this includes the important issue being discussed of increased susceptibility to infectious disease because of nutrient deficiency.

The three crucial pathways of Seed, Soil and Leaf are all employed, and by treating seeds with fertiliser to enable seedlings to set higher potential, form greater root exploring ability **and be better able to resist stress and disease** has proved to be highly beneficial.

Complete Scientific Review Extracts are:

From: ***Plant Nutrition and Health Risks Associated with Plant Diseases*** *by Don M. Huber, Chapter 9, Fertilizing Crops to Improve Human Health: A Scientific Review, October 2012 (ISBN: 978-0-9834988-0-3).*

Fertilizing Crops to Improve Human Health: A Scientific Review, is a joint publication by the International Plant Nutrition Institute (IPNI) and the International Fertiliser Industry Association (IFA).

Plant nutrient deficiency is caused by an insufficient level of an essential element at a critical time to maintain normal plant function.

Major causes of nutrient deficiency are an inadequate supply, lack of access to forms of nutrients available for absorption, or disease denial of nutrients necessary to maintain plant health and nutrient quality.

Balanced nutrition may be as important as the presence of any particular element since the intimate effects of nutrient deficiency occur at the cellular level, but may be manifest in altered growth and nutritional quality of the whole plant.

Increased susceptibility to infectious disease is a common result of nutrient deficiency (Datnoff et al., 2007; Evans et al., 2000; Huber, 1991; Huber and Graham, 1999).

Infectious diseases intensify nutrient deficiency of plants and further reduce their nutritional value for food or feed. Thus, adequate nutrition is an important means of reducing many diseases.

Nutrient deficiencies can be overcome by increased availability, more efficient plant uptake, increased physiological efficiency, and improved disease control.

A well-balanced nutrition program, integrated with other crop production practices, permits a broad utilization of this cultural disease control, and generally provides the best opportunity for maximum disease suppression.

Each of the 14 plant-essential mineral elements and several functional elements are known to influence disease severity. Disease suppression through manipulation of nutrient availability may be achieved by direct application of a nutrient to enhance resistance, by cultural practices which modify abiotic and biotic environments influencing nutrient availability, and by modifying the plant genotype relative to its nutrient uptake or interaction with the abiotic or biotic environment.

Benefits of nutrient sufficiency of the plant are achieved through increased production efficiency and greater productivity of more nutritious and safer food. A healthy plant will be more efficient and able to meet its nutrient needs more effectively from the generally limited resources available.

- Increased susceptibility to infectious disease is a common result of nutrient deficiency.
- Infectious diseases intensify nutrient deficiency of plants and further reduce their nutritional value for food or feed.
- A well-balanced nutrition program, integrated with other crop production practices, permits a broad utilization of this cultural disease control, and generally provides the best opportunity for maximum disease suppression.
- Benefits of nutrient sufficiency of the plant are achieved through increased production efficiency and greater productivity of more nutritious and safer food.