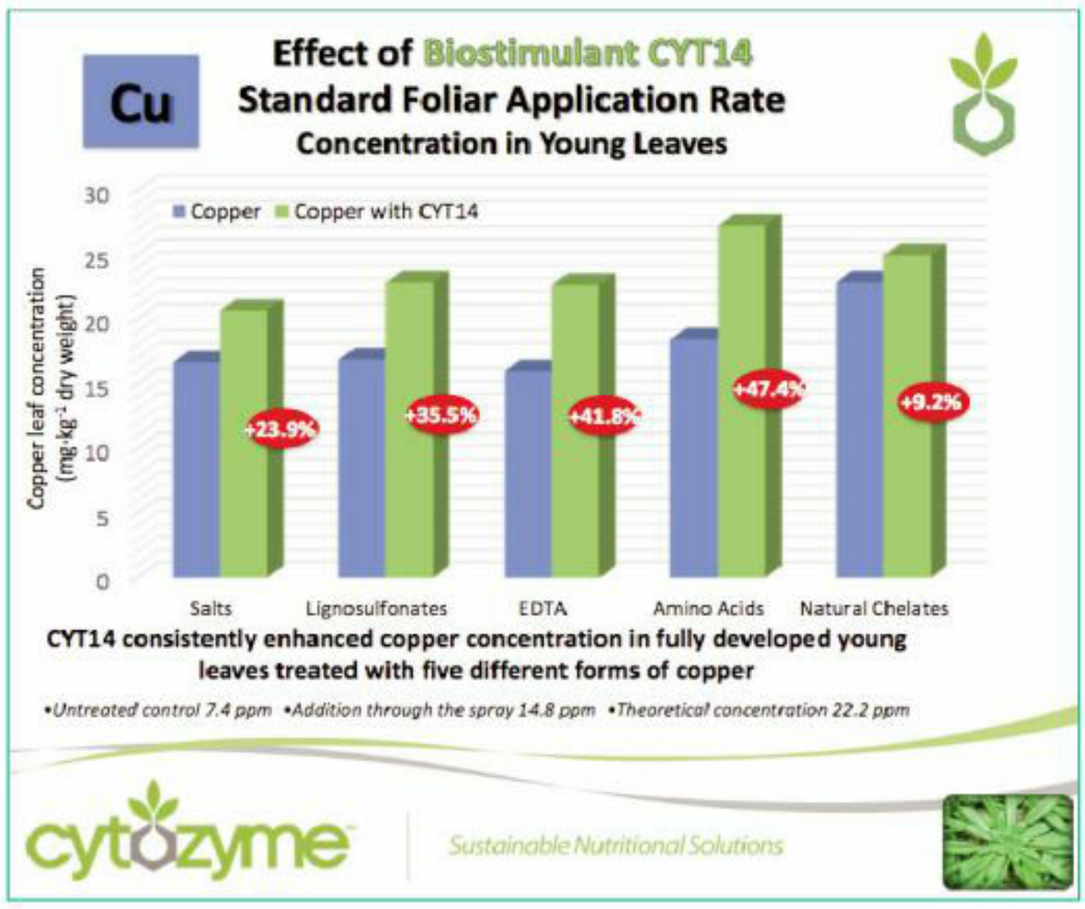

Two experiments were applied with 10 treatments (each replicated three times):

In young leaves, CYT14 consistently enhanced copper concentration in fully developed young leaves treated with five different forms of copper. CYT14 enhanced iron concentration in fully developed young leaves treated with iron salts, lignosulfonates, EDTA and amino acids. CYT14 enhanced manganese concentration in fully developed young leaves treated with manganese salts, lignosulfonates and natural chelates. CYT14 consistently enhanced zinc concentration in fully developed young leaves treated with five different forms of zinc. In older leaves, CYT14 enhanced copper concentration in fully developed leaves treated with five forms of copper, especially with EDTA, amino acids and natural chelates.

A second experiment showed the effects of CYT14 and CYT15 on foliar nutrient uptake at excessive application rate.CYT14 reduced damage caused by excessive application of nutrients complexed with EDTA, amino acids and natural chelates.CYT14 reduced nutrient concentration when co-applied with excessive amounts of salts, EDTA, amino acids and natural chelates. CYT15 reduced damage caused by excessive application of salts and nutrients complexed with EDTA, amino acids and natural chelates. CYT15 reduced nutrient concentration when co-applied with excessive amounts of salts, EDTA, amino acids and natural chelates.

The conclusion of these experiments is that natural chelates/complexes perform better than other foliar nutritional products. "Biostimulants with MAC Technology enhance standard foliar nutrient applications and also, they are able to reduce leaf damage caused by excessive foliar nutrient applications."concludes Mike Canady.

BIOHEALTH: A MIXTURE OF HUMIC ACIDS, SEAWEEDS AND BIOCONTROL AGENTS

Yasser Dergham, Technical & Sales Manager, Humintech GmbH, Germany presented Biohealth, a suppressor of soil-borne pathogens, based on humic acids and biocontrol agents.

Yasser Dergham

Biohealth is formulated with potassium humate, seaweed and with 2 natural microbes: Trichoderma harzianum, Bacillus subtilis. It is host specific, non-toxic to humans and does not contaminate water. Trichoderma harzianum is present in nearly all agricultural soils and agriculturally used as biocontrol agent and as a plant growth promoter. Trichoderma species exhibit effective antagonism against a wide range of soil borne plant-pathogenic fungi such as Pythium, Rhizoctonia and Fusarium. Trichoderma penetrates the host cell walls by secreting lytic enzymes: Chitinases, Proteases, Cellulases. Bacillus subtilis as biological control agent naturally occurring that is common in agricultural soils. It competes by colonization of the rhizosphere and induces resistance by activation of defense genes in plants. Bacillus subtilis promotes plant and root growth (cytokinin-like, auxin-like). Humic acids stimulates the growth and proliferation of desirable soil microorganisms. They feed the saprophyte soil borne microorganisms e.g. Trichoderma, Bacillus and Pseudomonas; increase the permeability of plant membranes and the speed as well as the rate of seed germination; stimulate the root growth, especially lengthwise and increase their respiration.

Humintech has conducted many trials in Europe, Egypt, Ecuador and South Korea. Biohealth was used as seed treatment on rice and vegetables, but also for soil application or for substrate preparation.

On different crops and under several climate conditions, Biohealth application reduced root disease infection as biocontrol agent against wide range of soil borne plant-pathogenic fungi such as Pythium, Rhizoctonia, Fusarium.

"Biohealth promotes the root and plant growth" concludes Dergham, "it increases the yield as well and induces plant resistance by activation of defense genes in plants".

HOW TO BRING INNOVATIVE BIOSTIMULANTS TO THE ASIAN FAMERS?

Since 1980, Valagro has developed sustainable solutions to enhance food production and improve nutritional quality of crops."The increasing demand from the world's population for food and well-being requires an effective response."explains Benoit Genot, Global Marketing Director, Valagro Spa, Italy.

"Trusting in a return to purely natural cropping techniques of the old times is not a realistic alternative, because it is not sufficient to meet the global needs. On the other hand, relying excessively on chemistry is not a sustainable