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COUNTRY HIGHLIGHT: U.S.A



1. NEW ZINC-CROPS PROJECT LAUNCHED IN THE DRC



Dr. Andrew Green (IZA), Rob White (IZA-South Africa), Anna Samake (Lundin Foundation), representatives of the Farmer's Association of the DRC (AASF), and local farmers.

The Lundin Foundation and IZA have launched an agronomic program in the Katanga Province of the Democratic Republic of the Congo (DRC) which will help improve food security and malnutrition. The program will work with local farmers, researchers, NGO's, and government officials to promote the use of zinc fertilizers. The aim is to introduce zinc to zinc deficient soils to increase crop production as well as increase zinc dietary uptake throughout the local population. The Lundin Foundation is sponsoring this program.

The program, which will run for three years, has the following goals:

- Increase maize crop production
- Increase zinc nutrition in the grain
- Improve the farmers' incomes
- Create a long-term, self-sustaining agronomic program through dissemination of benefits and capacity building
- Initiate scale-up effort to expand activities to other regions and with other crops in the DRC

In the DRC, an estimated 57% of the population is at risk for zinc deficiency with over 147,000 children under the age of 5 dying each year due to pneumonia and diarrhea – two leading diseases related to zinc deficiency.

For more information on the DRC program, please contact Dr. Andrew Green.

2. CHINA COLLABORATIVE PROJECT TO EXTEND AFTER ACHIEVING MAJOR PROGRAM GOALS



2016 Zn Fertilizer Awards were presented to representatives of the Award winners at the NATESC Workshop, March 10-11, 2016, Haikou, China.

A collaborative project with China's Ministry of Agriculture (MOA), Teck Resources and IZA has been highly successful. The program partners recently met to review 2015 achievements as well as plan objectives for 2016. NATESC collaborators reported on the demonstrative, educational and promotional work completed, as well as the outcomes.

Key Outcomes:

- Increased total Zn fertilizer consumption by 50%, to 60,000 tons Zn in 2015
- Over 10 million farmers now use zinc fertilizers based on the Fertilizer Recommendation Guideline in the 16 participating provinces

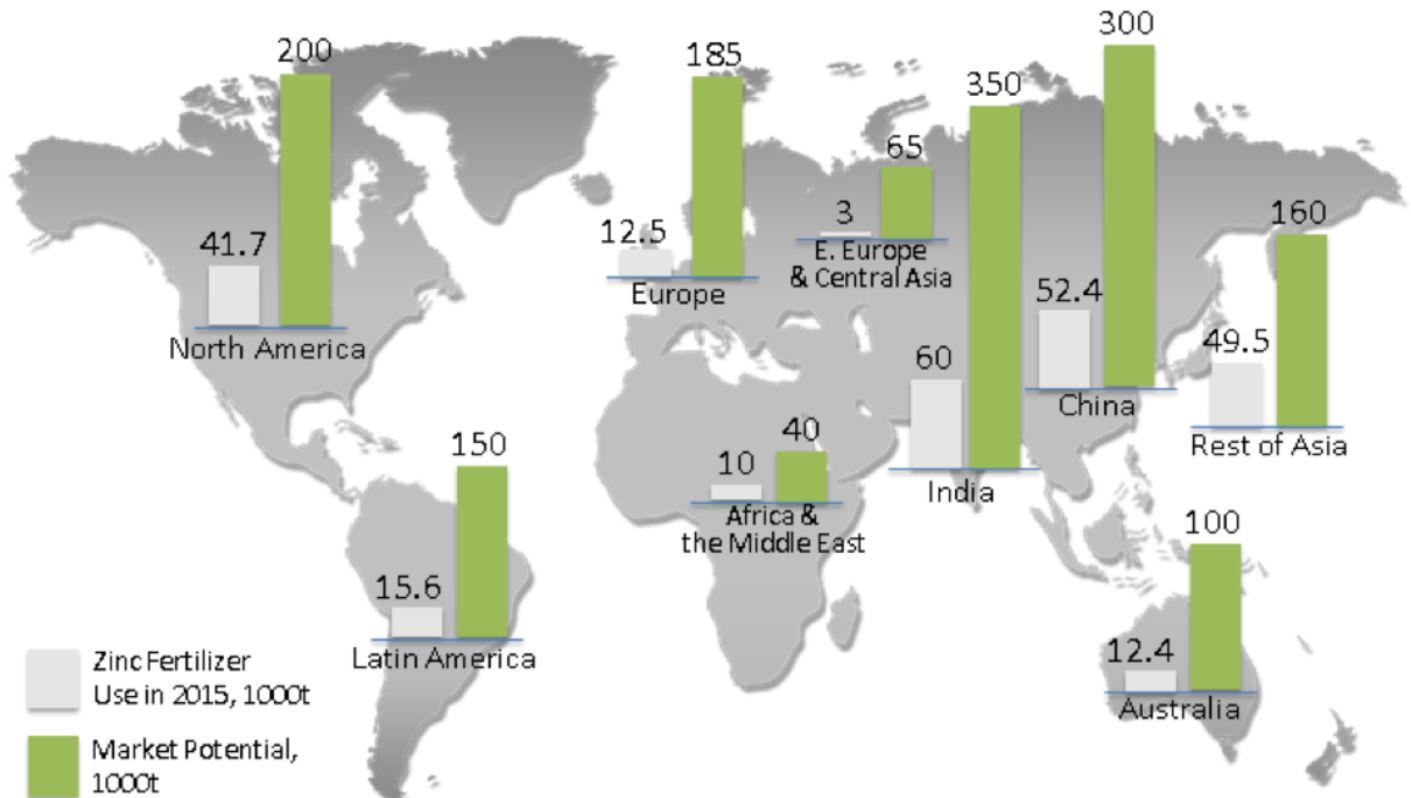
- Increased crop yield by average of 7% (or 2 million tons grain for 2,000,000 ha demonstration region in 2015)
- Increased the Zn enriched formula/compound fertilizer production in China to 2,000,000 tons
- Increased the total Zn fertilizer consumption by 50%, or 20,000 tons Zn, to 60,000 tons Zn in 2015
- Incorporated Zn fertilizer into the annual “National Fertilizer Recommendation Guidelines for Major Crop Productions” along with other key national programs like the Fertigation and Soil Test Fertilizer (Formulation) Recommendation program

At a NATESC workshop in Haikou, Hainan, representatives from NATESC and IZA presented “The 2016 Zn Award” to 51 outstanding agricultural extension workers and fertilizer industry leaders for their contributions and achievements in promoting Zn fertilizer use in China.

In order to further the use of zinc in fertilizers and correct zinc deficiency in Chinese agriculture, NATESC, MOA, Teck Resources Inc. (TECK) and IZA agreed to continue the ongoing China Collaborative Project on promotion of Zn fertilizer use in Chinese agriculture in 2016.

For more information on the China project, please contact Dr. Ming Xian Fan.

3. GLOBAL ZINC FERTILIZER DEMAND AND USE DATABASE



As a service to IZA Members and to help guide activities, IZA monitors and tracks the zinc fertilizer market.

Market data comes from multiple sources, including zinc chemical producers, traders, consultants and industry related publications.

This data allows IZA to estimate Zn nutrient demand or Zn fertilizer market potential and the Zn fertilizer consumption in major regions and countries. **The latest estimate shows India, China and the United States as the largest Zn fertilizer consumers and having the biggest market potentials or Zn demand (Figure 1). Annual consumption of zinc in fertilizers is now 160,000 tpa.**

To keep this database as accurate as possible, IZA requests that ZNI members provide any updated information to Dr. Ming Xian Fan (mfan@zinc.org). All information provided will be treated in confidence.

4. INTERNATIONAL ZINC CONFERENCE HIGHLIGHTS POSITIVE MARKET OUTLOOK FOR ZINC IN AGRICULTURE

Speakers at IZA's 2016 International Zinc Conference held February 21-24 in Scottsdale, Arizona forecast a very positive outlook for the zinc market, especially the Zinc Nutrient market in agriculture.

Presentations covering zinc nutrient market dynamics were unanimous in predicting continued strong consumptions of zinc sulphate and zinc oxide in the agricultural and feed sector.

Stefan Schlag, Senior Director at IHS Chemical, provided an overview on the zinc chemical market. Current zinc consumption in Agriculture was estimated at 255,000 tonnes. Asia and the America's are the major zinc agricultural markets accounting for 80% of global consumption. Schlag noted that more zinc sulphate (188 ktpa Zn or 66%) is used in Agriculture than zinc oxide (88 ktpa ZnO or 34%) and that 60% of ZnO used in agriculture was in feed, and 40% in fertilizer; whereas 77% of zinc sulphate is used as fertilizer and 23% is used in animal feed.

Stephen Orscheln, Senior Product Manager (Mineral Nutrition) at Phibro Animal Health Corp, gave a presentation on Zinc in Animal Nutrition noting that 980 million tonnes of animal feed was consumed worldwide in 2015 which equates to 45,000 tonnes of zinc.

Dale Edgington, Purchasing and Production Manager at Advanced Micronutrient Products, gave an overview on Zinc in Fertilizers, Supply and Demand. He noted that corn is the largest crop produced in in the United States, amounting to 47% of total crop production. The US corn crop consumes 60,000 tons of zinc sulphate per year, or 20,000 tonnes of metallic zinc.

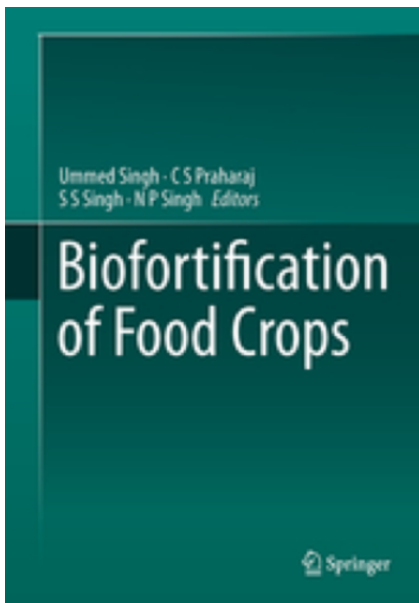
Dr. Andrew Green of the International Zinc Association (IZA) reported that the Zn fertilizer market has increased by an additional 40,000 tonnes per year in 2015 as a result of ZNI activities, and is projected to reach approximately 200,000 tonnes per year by the end of 2016. This growth is mainly attributable to policy changes and promotion activities achieved in India and China.

According to Green, the global potential market for zinc fertilizer could be increased to 585,000 tonnes as more countries include zinc in balanced fertilization or other best nutrient management practices to increase food production, nutritional values, and economic benefits for farmers in developing nations.

The 2016 International Zinc and Zinc Oxide Conferences were attended by over 300 representatives from zinc mining, refining, end users and related industry and government organizations.

For more information on the market information presented at these conferences, or to receive a copy of the ZNI presentation (if you are a Member), please contact Dr. Green.

5. BOOK CHAPTER ON 'ZINC IN CROPS AND HUMAN HEALTH' PUBLISHED IN INDIA



A chapter on ‘Zinc in Crops and Human Health’ authored by Drs. Soumitra Das and Andrew Green of the Zinc Nutrient Initiative (IZA) has been published in ‘Biofortification of Food Crops’ by Springer, and edited by Ummed Singh et al. The chapter describes the role of zinc in crop production and human health. It highlights the initiatives of the International Zinc Association in addressing zinc deficiency in soils, crops and humans through increased use of zinc fertilizers.

The contents of the book highlight biofortification to provide nutritional benefits to plants, humans and livestock. The information presented in this book will provide ideas of advanced techniques and will stimulate innovative thoughts and directions amongst researchers and policy makers in the field of biofortification.

For more information on this book/book chapter, please contact Dr. Soumitra Das.

6. ZINC NUTRIENT INITIATIVE PROJECT LAUNCHED IN BANGLADESH

The Zinc Nutrient Initiative (ZNI) is launching a project on 'Zinc Fertilizer Use for Food and Nutritional Security' in Bangladesh. The project will be a collaborative effort between the International Zinc Association (IZA) and the Bangladesh Agricultural Research Institute (BARI).

Despite being a densely populated country, food grain production has increased substantially in the past three decades. Unfortunately, this intensification of cropping, introduction of high yield plant varieties, expansion of irrigated area and use of chemical fertilizers has led to widespread soil fertility depletion. Bangladeshi farmers are reluctant to apply micronutrients such as zinc and boron - this imbalanced use of fertilizers has further contributed to nutrient deficiencies in soils, crops and human health.



Today, Bangladesh has one of the worst zinc deficiency problems in Asia. Nearly 50% of its agricultural land is considered highly zinc deficient and 55% of its population is at risk for zinc deficiency. An unfortunate side effect of low-zinc diets is stunted growth.

It is expected that this project will improve food and nutrition security by accelerating zinc fertilizer usage. In addition to soil and crop research, 'Field Days' and 'Crop Demonstration Trials' will also be conducted.

For more information on the Bangladesh project, please contact Dr. Soumitra Das.

7. ZNI PARTICIPATES IN ZINC & IODINE DAY IN INDIA



Dr. Ismail Cakmak and Dr. Katja Hora (centre) along with the Zinc Scientists from Punjab Agricultural University during Zinc and Iodine Day on 3 March 2016 in Punjab, India

A Zinc and Iodine Day was co-organized by Harvest Zinc and the Punjab Agricultural University, in collaboration with partners including IZA, IPNI, IFA, Mosaic, K+S, Bayer and SQM. The event, held on 3 March 2016 in Fatehgarh Sahib, Punjab, India, hosted about 500 farmers, as well as academic, fertilizer and metal and mines industry experts.

Dr. Ismail Cakmak of Sabanci University, Turkey spoke on the 'Role of Zinc in Crop Production' and Dr. Katja Hora of SQM and World Iodine Association, Belgium spoke on 'Role of Iodine in Human Nutrition'. Speakers from Punjab Agricultural University, Ludhiana included Dr. Hari Ram, Dr. Kiran Grover and others.



Dr. Ismail Cakmak of Sabanci University, Dr. Shashikant Bhende of Mosaic India and Dr. Soumitra Das of ZNI-India, IZA along with the progressive farmers of Punjab during the Zinc and Iodine Day on 3 March 2016 in Punjab, India

8. ZNI PARTICIPATION IN KEY AGRICULTURAL & FERTILIZER EVENTS IN INDIA

103rd Indian Science Congress

IZA spoke on “Zinc in Food and Nutritional Security” at the 103rd Indian Science Congress held in January 2016 at the University of Mysore, Karnataka, India. The Congress was inaugurated by the Prime Minister of India – Mr. Narendra Modi and attended by over 15,000 delegates across the globe including five Nobel Laureates.

The Prime Minister called on participants to bridge the gap between science and indigenous knowledge in his talk titled: ‘Science and Technology for Indigenous Development in India’. He emphasized issues pertaining to agriculture, rural development and malnutrition and highlighted health and nutritional challenges in the urban population in his address.



Prime Minister Narendra Modi (centre) at the inauguration of 103rd Indian Science Congress in the University of Mysore, Karnataka, India

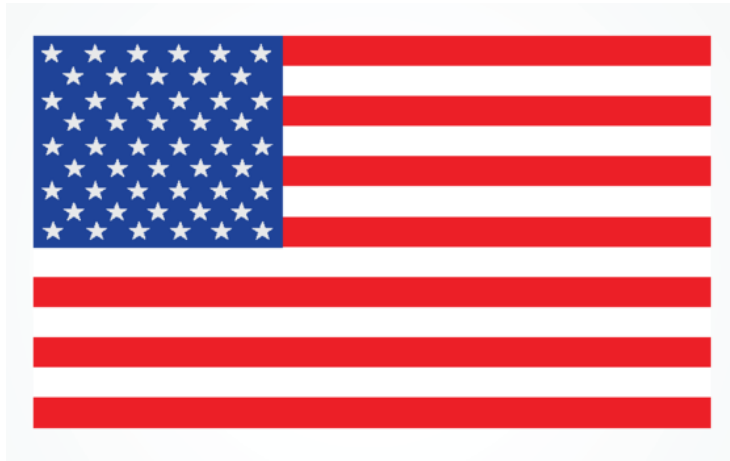
FAI Program on Business Development

IZA spoke on ZNI in the FAI Program on 'Business Intelligence, Forecasts and Planning for the Fertilizer Sector' held in January 2016 in Jaipur, Rajasthan, India. The program was attended by over 40 participants from the fertilizer industry.

The goal of the program was to assess market indicators and help formulate policy decisions that ensure fertilizers are available to farmers in the right quantity, at the right time, and in the right places. Key to this are realistic projections relating to fertilizer demand, supply, import requirement and various other factors including nutrient management.

For more information on ZNI Activities in India, please contact Dr. Soumitra Das.

COUNTRY HIGHLIGHT: ZINC DEFICIENCY IN THE U.S.A.



Population: 322 million

Crop Production Land (Exclude Hay and Forage): 320 million acres; Livestock farming—mainly cattle, hog, and poultry farming—is also included in the agriculture sector. *Agriculture accounts for about 1.1% of the US GDP (gross domestic product) contribution.*

Annual consumption of Fertilizer (N,P₂O₅,and K₂O): 22 million tons, account for approximately 11.5% of world fertilizer consumption

Major crop production: corn (90 million acres), wheat (54 million acres), Soybean (84 million acres), cotton (9.6 million acres) and rice (2.8 million acres). *US accounts for about 30% of total global trade in wheat, corn, soybeans and cotton.*

Soil Zn deficiency: higher-yielding and intensive crop production extract larger levels of soil nutrients - particularly phosphorus and zinc.

According to a soil testing summary data from over 7.5 million samples (IPNI 2016), soil Zn deficiency in North America is getting more severe. The percentage of soil samples testing below 1 ppm Zn in north America increased from 37% of 2010 to 42.4% in 2015; accounting for 128 million acres, or 58 million ha.

Zn fertilizer demand: 200,000 to 250,000 tones Zn

Current Zn fertilizer consumption: 40,000 tones Zn.

ZNI AFFILIATE MEMBERS



Membership Benefits



ZNI Members enjoy a number of exclusive benefits, including:

- Access to communications materials such as fact sheets, brochures, and flyers
- Your logo company displayed on our website, in global/local presentations, and in our newsletter
- Comprehensive zinc fertilizer training program led by IZA's ZNI team with over 50 years collective technical expertise

About this Newsletter



This newsletter is published by The International Zinc Association (IZA), a non-profit organization headquartered in Durham, North Carolina. IZA launched the Zinc Nutrient Initiative (ZNI) in response to the critical issue of zinc deficiency in soils, crops, and humans. *For more information, please visit www.zinc.org/crops, or contact Dr. Andrew Green. ©2015.*