

Ammonia Sector Provides Key Lessons for Energy Efficiency



Ammonia production uses 30 per cent less energy per tonne of ammonia today on average, than it did three decades ago. This success story was highlighted at a March workshop jointly organized by IFA and the International Energy Agency (IEA). Because ammonia production is energy-intensive, these gains represent a win-win situation: lower energy consumption is good for the environment and for a company's bottom line.

Some 80 to 90 per cent of total energy use in the fertilizer sector is dedicated to converting atmospheric nitrogen into ammonia. Since virtually all fertilizers that contain nitrogen are derived from ammonia, this sector is intimately linked to imperatives to

meet growing demands for food and bioenergy. Life-cycle analyses have shown that the energy and carbon captured by the extra biomass grown thanks to fertilizer use exceed (several times over) the amount consumed or emitted during fertilizer production.

Many natural gas-fired ammonia plants around the world are approaching the thermodynamic minimum for energy use. However, incremental improvements can still be made in other areas, particularly with regard to feedstock choices. There is also scope for better performance at sites where investments in the best available technology have not yet been made.

In addition to the ammonia sector's impressive track record in reducing energy consump-

tion, it enjoys a well-established benchmarking system through IFA. This system provides essential insights into the current state of the industry and allows companies to track their performance against others and over time.

The workshop, with the theme "Energy Efficiency and CO₂ Reduction Potential in Ammonia Production", was a contribution to the G8 dialogue on climate change, clean energy and sustainable development. Holding the workshop in Viet Nam emphasized the importance to ammonia production of emerging Asian economies.



From left to right: Dolf Gielen (IEA), Robert Dixon (IEA) and Luc Maene during the Opening Session of the Workshop on Energy Efficiency and CO₂ Reduction in Ammonia Production, in support of the G8 Plan of Action.

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Chinese Researcher Receives IFA Award for Correcting "Sins of the Past"

During the past thirty years, fertilizer use in China has grown rapidly. Unfortunately, information on how to use fertilizers wisely has not spread as quickly, leading to low nutrient use efficiency and related unwanted environmental impacts. The nutrient management research directed by Fusuo Zhang, who has been selected to receive the 2007 IFA International Crop Nutrition Award, has provided innovative approaches to help correct these problems.

Since 1998, much of his work has concentrated on the development of optimized nutrient management techniques for high-yield and high-efficiency crop production. This method involves better matching of applications to crop nutrient requirements by taking into account all sources of

nutrients, including significant quantities of nitrogen from atmospheric deposition (more than 60 kg N/hectare in parts of the North China Plain). His approach involves nutrient budgeting, dynamic monitoring of nutrient concentrations in the root zone (rhizosphere) at different points in the growth cycle, real-time soil testing and plant analysis.

Among his many other accomplishments, Professor Zhang has served as project leader for two large Sino-German research projects in the North China Plain concerned with sustainable farming (1998-2003) and modelling of material flows and production systems for sustainable resource use in intensified crop production



(2004-08). He led another project between 2003 and 2006, funded by the Ministry of Agriculture of China, on nutrient management in the country's main cropping systems to improve nutrient use efficiency, crop yield and environmental protection.

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- Pierre Becker Memorial Award



International Plant Nutrition Institute Launched with a World View



By Terry L. Roberts, IPNI President

Nothing is as strong as an idea whose time has come. This paraphrase of a quote by a great author, Victor Hugo, helps explain the founding of the International Plant Nutrition Institute (IPNI), which officially began operations on 1 January 2007. The idea for IPNI goes back several years, first introduced to the global fertilizer industry by IFA Director General Luc Maene, but it had to wait until the environment was right for it to take root and grow.



Terry Roberts

Science for Responsible Management of Plant Nutrients to Benefit All

IPNI was established in late 2006 through a resolution adopted unanimously by its founding members. It is a global, scientific, agronomic organization made up of fertilizer industry companies which are basic producers of nitrogen (N), phosphate (P), potash (K) and/or sulphur (S) for agricultural use. Large retail organizations that do not qualify as basic N, P, K or S producers may join as associate members. Other non-profit associations or organizations that support the goals of IPNI are eligible to become affiliate members. IPNI aims to provide a coordinated scientific foundation for fertilizer nutrient use.

It will also scientifically address associated environmental issues.

The Member Companies

There are 17 IPNI founding members: Agrium Inc.; Arab Potash Company; Belarusian Potash Company; Bunge Fertilizantes S.A.; CF Industries Holdings, Inc.; Groupe OCP; Intrepid Mining, LLC; K+S KALI GmbH; Mosaic; PotashCorp; Saskferco; Simplot; Sinofert Holdings Limited; Spur Ventures Inc.; SQM; Terra Industries Inc.; and Uralkali.

In December 2006 by-laws were adopted, an Executive Committee was formed and the Board of Directors was elected. Patricio Conteresse, President and Chief Executive Officer (CEO) of SQM, became the first Chairman; Mike Wilson, President and CEO of Agrium Inc., Vice Chairman; and Stephen R. Wilson, Chairman and CEO of CF Industries Holdings, Inc., Finance Committee Chair.

IPNI superseded the Potash & Phosphate Institute (PPI), with a heritage going back to 1935. The Board of Directors of PPI, which ceased to exist at the end of 2006, committed its staff to the new institute.



Christian Witt (back, centre), Director of the South-East Asia Programme – a joint mission of IPNI and IPI based in Singapore – at a meeting in Viet Nam.

Latin America, Northern Latin America and South-East Asia. (The South-East Asia Programme is a joint Mission with the International Potash Institute.) We anticipate establishing scientific agronomic programmes in Eastern and Western Europe, as well as in the Middle East. Additional staff members will be added in some existing programmes. Directors and Deputy Directors of IPNI regional programmes are all PhD-holding scientists, who are well-known and respected in academic as well as industry circles.

Some important assignments have already been made. Paul E. Fixen holds the title of IPNI Senior Vice President, Director of Research, and Americas Group Co-ordinator. Adrian Johnston is IPNI Vice President and Asia Group Co-ordinator. Cliff Snyder has been appointed to the new position of Nitrogen Programme Director. He will coordinate our focus on best management practices for N and related environmental issues, both in North America and internationally.

As the first President of IPNI, I see great opportunities for IPNI as a global organization ready to respond to the world's demand for food, fuel, feed and fibre. The current focus on biofuels and related shifts in crop production priorities increase the need for better understanding of fertilizer best management practices. Our scientific staff members are dedicated to helping define the basis for appropriate use and management of plant nutrients, especially in terms of environmental and economic issues. We provide com-

Strong Staff and Programmes

Under these circumstances, IPNI was able to go straight to work with a well-known and respected team of scientists in many key regions of the world, including China, India, Brazil, North America, the Southern Cone of



IPNI staff members have taken on broader responsibilities in their programs.



*Adrian Johnston, Jiyun Jin
and Gao Xianbiao.*

prehensive and regional information, based on science, to help farmers and the industry address environmental and agronomic problems.

Broad-based Communications Support the Range of Programmes

IPNI will carry out a broad-based effort to educate, train and communicate with diverse audiences in our programme regions. The quarterly *Better Crops with Plant Food* magazine is now published by IPNI. Each of the Institute's programme regions also produces

an array of communications, including print, software and other media, in local languages. Technical reports, manuals, proceedings and even publications directed to young students have their place in our portfolio. In some IPNI regions harvest field days, television, and video presentations are highly effective means of reaching mass audiences.

The IPNI web site (www.ipni.net) is intended to be a key link for the transfer of information. For example, a research database accessible on this site contains a wealth of background information and reports on results of research projects in the IPNI programme regions. Several portals – including N, P, K, secondary nutrients and others – will facilitate information searches and provide efficient navigation for visitors.

Establishing Common Ground

IPNI seeks cooperation with a wide spectrum of companies, organizations, agencies, associations, academic societies, environmental groups, NGOs and individuals as we endeavour to accomplish our mission. We see mutual benefits and strength in this approach, and we believe the time is right for IPNI to participate in the important work ahead.

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continued from page 1 **Chinese Researcher Receives IFA Award**

These projects demonstrate the impact of improper fertilizer application (especially the overuse of N fertilizer and unsuitable timing of fertilization) on major crops, including rice, maize, wheat, vegetables and fruit trees.

Professor Zhang's work has had impacts on a wide scale due to his numerous partnerships with fertilizer companies, government extension services and farmer associations. Starting in 1996, his techniques were successfully applied in 12 cropping systems located in 18 provinces, reaching approximately 4.9 million hectares. By reducing excessive nutrient applications, participating farmers were able to save money and to increase their total net income by USD 428 million.

Inspired by this outcome, the central government of China invested some USD 700 million in more than 1000 counties during 2005-06 to promote the adoption of fertilizer recommendations based on soil testing led by Professor Zhang. The Ministry of Agriculture estimates that grain yields in the project zones increased by eight to 15 per cent as a result and fertilizer use efficiency by five per cent. These efficiency gains avoided the unnecessary use of 2.3 million tonnes excess fertilizer.

Private sector partners have also contributed to more efficient fertilizer use, with some 240 companies providing soil testing, fertilizer use recommendations, appropriate products and crop advisers. As well as changing the quantities they apply, farmers have also embraced a better product mix. Wider use of compound and blended fertilizers has improved nutrient balances, another important element of fertilizer use efficiency. A growing number of fertilizer companies and government agencies have subsequently developed strategies to better manage phosphorus resources.

In recent years, Professor Zhang's work has been motivated by general concerns about natural resource management and the sustainable development of China's fertilizer industry. One of his research projects found that the country's high-grade phosphate rock would be exhausted by 2014 unless more efficient mining and processing technologies were put in place.

In 2005, the State Council of China awarded Professor Zhang the National Natural Science Prize (the country's most prestigious science award) in recognition of his work on rhizosphere nutrient management.



He is the only plant nutrition and fertilizer scientist in China to have received this prize.

As a highly respected scientist with solid international credentials, Professor Zhang has authored or co-authored numerous papers and book chapters, presented or published the world over. Many of his research projects entail international collaboration. Professor Zhang's laboratory has become an important national and international centre for scientific research on plant nutrition and one of the outstanding international platforms for scientific training in this field.

IFA member JSC Uralkali nominated Professor Fusuo Zhang for the IFA award, which he will accept on 22 May during the IFA Annual Conference. ●


 from principle to practice

Toros Agri: Committed to Agriculture and Human Well-being in Turkey

By Esin Mete, President, Toros Agri Industry and Trade Co. Inc.



Toros Agri is a major producer and distributor of fertilizers in Turkey, with a 30 per cent market share. From the time it was established, the company has been committed to the development of agriculture,

farmers' progress and human well-being. It is continuously looking for new ways to increase its leadership and expertise in agriculture.

In Turkey, field crops are mainly farmed using traditional methods. Up to 35 per cent of the population is actively engaged in agriculture and farms are small. The main field crops are wheat, barley and cotton. Most of the country's wheat is grown in Central Anatolia, where there is no irrigation and yields are low. Thus, agriculture is not carried out under the best economical conditions and farmers remain in a low income bracket.

During the period 1992-95, a multi-institutional project (see cover article of the May

2005 issue of *Fertilizers & Agriculture* for more details) involving Turkish and international researchers studied the impact of zinc-deficient soils in Central Anatolia on crop yields and quality. Funded by NATO, the project was led by the Çukurova University of Turkey and the International Maize and Wheat Improvement Center (CIMMYT). The outcome confirmed that more than 65 per cent of the soils in Central Anatolia were deficient in zinc, with a direct effect on wheat yields. Because wheat is a key component of local diets, it also became clear that the lack of zinc in the soil was in large part responsible for zinc deficiencies in the local population.

Although this study had promising theoretical results, it was crucial to apply this concept concretely throughout Turkey. Researchers were looking for a fertilizer producer willing to provide fertilizers containing zinc. This manufacturer would need to convince farmers to use the new product, follow up on crop performance and use the results to expand consumption to every region of the country. Toros Agri undertook this challenge.

Letting Farmers "Think with their Eyes"

The programme was launched in the following months by adding zinc to trial quantities (2.118 million tonnes) of NP (20.20.0) and NPK (15.15.15) compound fertilizers. In addition to wheat, target crops included barley, cotton, potato, rice and vegetables. Toros Agri sold these fertilizers at the same price as those that did not contain zinc, in order to reduce the perceived risk of experimenting with the new products.



Wheat trials: crop on the left is fertilized with DAP, and on the right with 20.20.0+Zn.



Cotton trials: left side fertilized with 15.15.15, right side with 15.15.15+Zn.

Knowing that it would be difficult to convince farmers to change their habits, Toros Agri adopted the motto: "Farmers think with their eyes". Prominent farmers and community leaders in regions with the highest potential were invited to participate in field trials. This allowed farmers to see for themselves the different results between zinc-added compound fertilizer and traditional applications.

In 1997 trials began at nearly 2000 different locations in Turkey to test the zinc-added product in relation to different crops, soil conditions and farmer practices. The provinces of Ankara and Konya in Central Anatolia were chosen for wheat and barley, Izmir and Urfa for cotton, Nevsehir and Afyon for potatoes, Balikesir for rice and several locations in the Aegean region for field tomato production.

The Importance of Zinc for Human Health

Zinc is vital for many biological functions and plays a crucial role in more than 300 enzymes in the human body. Zinc deficiency is ranked as the fifth leading risk factor in causing disease, especially diarrhea and pneumonia in children, which can lead to high mortality rates in underdeveloped regions. Other severe deficiency symptoms include stunted growth and impaired development of infants, children and adolescents. Early zinc deficiency also leads to impaired cognitive function, behavioural problems, memory impairment and problems with spatial learning and neuronal atrophy. Furthermore, zinc influences how the body absorbs other elements, such as iron. About 50 per cent of the world population suffers from zinc and iron deficiencies, which can be addressed using cost-effective zinc fertilization.



Farmers enthusiastically embraced compound fertilizers enhanced with zinc.

All the trial fields were monitored. Farmers were given agronomic guidance from Toros Agri marketing and sales teams and dealers. At the end of the season, 22 field meetings were organized before the harvest, in order to share the results with regional farmers and academics.

The results were very convincing. The yield increases in plots receiving zinc ranged between 27 and 109 per cent. On some irrigated plots, the increases reached almost 400 per cent. Farmers were astonished to see the extent of the difference. The positive effects of the zinc-enhanced compound fertilizer were also reflected in lower pesticide use because of the crops' improved resistance.

To ensure the most efficient use of its fertilizer containing zinc, Toros Agri continued to provide farmers with free soil analysis and advice on fertilization after the trial year. Instructions for application methods and dosages were printed on every fertilizer bag distributed countrywide, as was an offer for free soil analysis from Toros Agri to identify the most appropriate grades and dosages for their particular soil conditions.



Producers explaining the effects of 15.15.15+Zn to others at a field meeting.

Zinc Fertilizers Have Proven their Mettle in the Field and the Market

In the decade following the launch of compound fertilizers with zinc, consumption grew rapidly. Toros Agri at first sold around 45,000 metric tonnes of these fertilizers. This amount tripled over the next four years and has continued to grow.

In time, the zinc-added product was differentiated from other grades through higher prices. Farmers accepted this easily, as the added value of the zinc micronutrient had become clear. Competitors on the local market were compelled to produce similar grades containing zinc. Total sales of compound fertilizers with zinc, which had not even existed in 1996, reached 380,000 metric tonnes in 2006. This represents 25 per cent of total national consumption of compound fertilizers. Toros Agri still accounts for half of the sales of zinc-containing compound fertilizers and close to one-third of the total market for compound fertilizers in Turkey.

The long-term positive effects on public health of adding zinc to compound fertilizers are difficult to quantify. Nonetheless, the Turkish Ministry of Agriculture and CIMMYT estimate that the economic benefits of zinc fertilization in Turkey amount to some USD 100 million per year. The success of this project provides a model for other countries where the population suffers from iron and zinc deficiencies. Toros Agri is proud of having pioneered this project in Turkey and of its contributions to both the economy and the well-being of society.

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continued from page 1 IFA/IEA Workshop

Speakers from around the world addressed the outlook for the ammonia sector, presented the fertilizer industry's perspective on challenges and opportunities ahead and explored technology prospects for incremental improvements in efficiency and the reduction of greenhouse gas emissions. Key points included:

- In India, which is experiencing strong growth in fertilizer demand, recent plant revamps and feedstock changeovers have led to significant increases in industrial efficiency and reduced emissions.
 - China, which will bring more coal-based ammonia capacity online in coming years, can make similar advances by investing in coal gasification technology.
 - Carbon capture and storage (CCS) for CO₂ mitigation remains too costly for the ammonia sector without additional financial incentives. Still, the ammonia sector may present interesting early opportunities for CCS, well ahead of the power sector.
 - How to foster investments in cleaner technology and processes was also addressed in discussions. Participants from industry and governments agreed that emissions trading schemes and similar market mechanisms are effective means of "pricing" carbon, as long as they are based on current performance standards (and not historical emissions). To avoid distorting competitive advantages, it is also essential for coverage to be global. Such incentives need to be part of a stable, long-term regulatory environment, in order to provide the necessary visibility for ammonia producers to make sound economic decisions with regard to investments in energy efficiency and lower-emitting technology.
- The IEA will incorporate the insights gained through the workshop into its report on industrial energy efficiency, to be presented to the G8 summit hosted by Germany in June 2007. The two organizations will continue to work together to improve sustainable energy use. ●

For more detailed information on the workshop discussions, see www.fertilizer.org/ifa/technical_2007_hcmc/2007_tech_hcmc_papers.asp

highlights

Senior Executives Discuss Safety, Health and the Environment in Fertilizer Production

Senior executives from around the world came together to discuss key safety, health and environment (SHE) issues during a global roundtable held on 12 March in conjunction with the IFA Technical Committee meeting in Ho Chi Minh City, Viet Nam. The session was organized by IFA and chaired by Tore Jenssen, Vice President for SHEQ at Yara International and Convenor of the IFA working group on Safety, Health and Environment.

This half-day session offered production managers and SHE executives the opportunity to share their diverse experience and concerns with regards to SHE management systems in the production, storage and transportation of fertilizers.

has led to award-winning SHE performances in recent years.

Kemira GrowHow showcased its experience with product stewardship, which requires taking responsibility for fertilizers throughout the value chain from raw materials to end use by the farmer. Corporate-wide dissemination of codes of practices and continual life-cycle assessment (LCA) were identified as key elements to developing and maintaining an effective product stewardship programme.

Finally, Yara discussed its behaviour-based safety approach to achieving consistent, low lost-time injury across global operations. Through such an approach, which relies on strong management commitment and daily employee involvement, the overall design safety of a production site can significantly be enhanced.

A case study by Gulf Petrochemicals Industries Co. (GPIC) demonstrated the need for a holistic, integrated approach to safety management, which in GPIC's case

Abdul Rahman Jawahery, IFA Technical Committee Chairman



IFA Member PetroVietnam (PVFCCo) welcomed delegates to the technical visit of the Phu My fertilizer plant.



From left to right: Tore Jenssen (Yara), Yasser Rahim (GPIC) and Soili Ylisuutari (Kemira GrowHow) during the Safety, Health and Environment (SHE) Roundtable.

The lively and rich discussions from the roundtable will form the foundation for the action plan of the IFA Technical Committee's newly formed working group on SHE. This roundtable and the working group reflect the Committee's increasing focus on promoting excellence globally in SHE practices. ●

Getting a Grasp on REACH

The European Union's (EU) REACH legislation, which will enter into force on 1 June 2007, has important implications for the global fertilizer industry. Adopted in December 2006, REACH – short for Registration, Evaluation, Authorization and Restriction of Chemicals – aims to improve the protection of human health and the environment while maintaining competitiveness and enhancing the innovative capacity of the EU chemicals industry.

REACH requires the registration, over a period of 11 years, of some 30,000 chemical substances. Because REACH applies to substances imported into the EU as well as those manufactured in Europe, it will have ripple effects on all companies doing business with any part of the European chemical industry. As well as requiring data for all substances manufactured or imported above one tonne per year, REACH requires registrants to identify appropriate risk management



measures and to effectively communicate them to users. The impacts of REACH will also be felt by downstream users of registered substances, so purchasers of EU exports are advised to analyze how their supply chain might be affected.

With the implementation of REACH, the onus of ensuring good management of chemical substances is squarely on the shoulders of industry. But there is a positive side to this

development: REACH-compliant organizations will be perceived as forward-thinking, responsible and efficient. In addition, coming to terms with REACH helps companies from losing business and facing possible legal repercussions.

The EU is establishing a new European Chemicals Agency in Helsinki later this year to manage the implementation of REACH.

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Designed by the IFA Production and International Trade Committee for all IFA Members

The 28th annual edition of the IFA Production and International Trade Conference will be an excellent opportunity to interact with senior industry representatives from the main fertilizer producing and trading companies. There will be a special emphasis on logistics, as Vancouver is a major port for potash and sulphur exports from Canada.

The programme consists of three half-day plenary sessions open to all participants, starting on the afternoon of Wednesday, 24 October and continuing all day Thursday, 25 October.

Plenary sessions will cover developments in the main fertilizer markets and trends in the use of fertilizer products. Keynote addresses will focus on supplies of potash, sulphur and nitrogen and phosphate fertilizers. Logistics will be a dominant theme, with presentations on terminal operations and related environmental regulations as well as on the pan-Pacific freight market. Finally, energy and emerging fertilizer-related policies will be covered.

There will be a half-day technical tour of two major terminals in the vicinity of Vancouver on the morning of Friday, 26 October.

As usual, functions will be organized to facilitate contacts and stimulate discussions among participants.

In addition to the plenary sessions, members of the Production and International Trade Committee will hold their annual meeting at the end of Wednesday morning (24 October), preceded by the meetings of the four Working Parties of the Committee (by invitation only) on Tuesday, 23 October and the morning of Wednesday, 24 October. ●

IFA/IFDC Production Technology Workshops



IFA and the International Center for Soil Fertility and Agricultural Development (IFDC) are this year organizing two week-long training workshops for engineers who have recently assumed new responsibilities. The first, on phosphate production technologies, will be held in Brussels, Belgium, from 18 to 22 June. The other, on nitrogen production technologies, takes place in Port Louis, Trinidad, from 4 to 9 November.

At each workshop the latest developments and improvements in technology and processes will be explored, using lec-

tures and hands-on experience. Participants in the phosphate workshop will visit phosphoric acid producer Prayon and the granulation facility of specialty fertilizer producer Rosier. The nitrogen workshop in Trinidad and Tobago (a country which is currently experiencing healthy growth in nitrogen-based fertilizer production) will provide an excellent occasion for discussing the latest trends and technology developments in this sector.

For more information, please visit the IFA Technical Committee web portal at www.fertilizer.org/ifa/memberarea/tech_conferences.asp. ●

Latest Fertilizer Market Information

The papers presented at the IFA Crossroads Asia-Pacific 2006 Conference “Growing markets, nurturing success”, which included the IFA Production and International Trade Conference, are now available on the IFA web site in PDF format. A cd-rom containing these documents is also available upon request.



The “Summary Report – World Agriculture Situation and Fertilizer Demand, Global Fertilizer Supply and Trade 2006-2007”, based on the reports presented at the 32nd IFA Enlarged Council Meeting held in Buenos Aires, Argentina, in December 2006, was posted on the IFA web site in PDF format.

Statistics and reports reserved for IFA members

IFA members can now request the following from the Secretariat of the IFA Production and International Trade Committee:

- Quarterly production and trade statistics covering the period from January to December 2006: ammonia, urea, phosphate rock and processed phosphates, sulphur
- Final 2004-2005 sulphur and sulphuric acid statistics
- 2006 annual potash production and trade statistics on both a nutrient (K_2O) tonne and product tonne basis
- Summary overview of sulphur supply/demand 2004-2011. Prepared by Ferrecon Research Centre on the basis of the comprehensive report distributed at the Sulphur Working



Party of the IFA Production and International Trade Conference held in Chiang-mai (Thailand) in November 2006. ●

highlights

Agriculture Committee – News in Brief

IFA's training programme on fertilizer demand forecasting focuses on Asia

In its effort to improve the reliability of national, regional and global fertilizer demand forecasts, IFA is organizing a regional training for its correspondents in some of the main fertilizer-consuming countries in Asia. This programme, which involved four trainers and nine trainees over 2.5 days, was aimed at promoting the use of a crop-based, expert-based forecast methodology. IFA plans to organize regional training sessions on an annual basis. Latin America and Eastern Europe have been identified as priority regions for the 2008 and 2009 training sessions. Should you be interested in becoming an IFA correspondent, in participating in a future training session or in receiving a copy of the IFA guidelines for crop-based forecasting, contact pheffer@fertilizer.org.

IFA members involved in specialty fertilizers meet in Budapest

Members of the IFA Working Group on Special Products met on 20 March in Budapest. On that occasion, they reviewed progress toward the release of publications about zinc, micronutrients and enhanced-efficiency fertilizers, as well as on the database concerning the market for specialty fertilizers. They also decided to initiate a publication on fertigation and considered amendments to the discussion paper on the contribution of the fertilizer industry to the nutrition security challenge.



The participants noted progress on the organization of the Zinc Crops 2007 conference, to be held from 24 to 26 May in Istanbul. At the end of March, the programme was largely finalized and some 130 delegates had

already registered. Updated information on this event can be found on the dedicated web site at www.ZnCrops2007.info.

Fertilizer best management practices

The industry met in Brussels with partners to agree on the strategy for improving fertilizer management practices.

Forty delegates from the fertilizer industry and partner organizations met from 7 to 9 March in Brussels to define the general principles of fertilizer best management practices (FBMPs) and the strategy for their wider adoption. They also discussed the role of the fertilizer industry in developing and promoting FBMPs and identified priority areas for action.



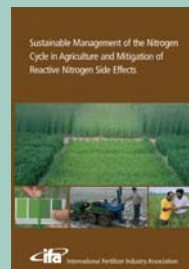
Luc Maene; Rajiv Sinha, Convenor of the TF on FBMPs; John Ryan and Fusuo Zhang, the winners of the 2006 and 2007 IFA Awards respectively.

The workshop was a unique occasion for exchanging information on experiences, reviewing achievements and identifying the gaps, understanding the actors and identifying the key partners. It was action-oriented and made it possible to draw up the broad lines of a future action plan for the global fertilizer industry. This plan will be refined over the next few months by the IFA Task Force on FBMPs. ●

Sustainable Management of the Nitrogen Cycle in Agriculture and Mitigation of Reactive Nitrogen Side Effects

IFA. First version, February 2007. 53 pp. ISBN 2-9523139-1-1

The IFA Task Force on Reactive Nitrogen recently published a booklet providing scientific responses to frequently-asked questions on nitrogen and the environment. The potential of different N sources to meet demand; what we know, what we guess and what we don't know about the environmental and health effects of lack of N or excess N; the prospects for increasing N use efficiency; and the commitment of the fertilizer industry to improve N management are discussed in this publication.



Optimizing Reactive Nitrogen Use for Sustainable Agriculture

IFA, Brief, February 2007. 4 pp. In parallel to this scientific booklet, the task force has developed a four-page brief targeting a much larger audience.



N

o n o n

N came in one night
blown on the wind
through the window
probably sometime soon
after I was born.

With no n
we can neither scorn
nor score points.
We lose the chance
to entrance or entertain.

N is an ingredient
in everyone's living room
morning, noon and night.

Without n
life is so empty
there is a positive
lack of life.

onon

Reprinted from Dark Angels (published by Cyan Books), with permission of author John Simmons

Information resources

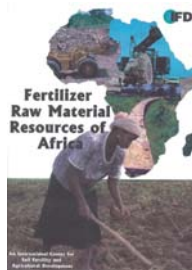
Fertilizer Raw Material Resources of Africa

S.J. Van Kauwenbergh.
IFDC, Muscle Shoals,
AL, USA, December
2006. 435 pp.

This book describes the fertilizer raw materials resources in all African countries. An overview of fertilizer products, deposits, production and fertilizer projects is given.

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Forecast of Food, Farming and Fertilizer Use in the European Union 2006-2016

EFMA, Brussels, Belgium. 8 pp.

Producing Bioenergy and Making the Best of European Land

EFMA, Brussels,
Belgium. 16 pp.

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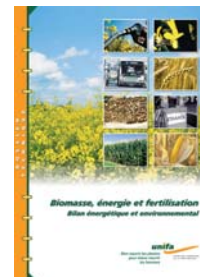


Biomasse, énergie et fertilisation Bilan énergétique et environnemental

UNIFA, Paris, France,
December 2006. 16 pp.
This French publication is largely based on EFMA's "Producing Bioenergy and Making the Best of European Land" (see left).

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Fertilizer Use by Crop

FAO Fertilizer and
Plant Nutrition Bulletin
No. 12, Rome, Italy,
2006. 124 pp. ISBN
978-92-5-105592-2

This publication is based on 21 country reports on fertilizer use by crop issued by FAO between 2002 and 2006. It considers farming systems, fertilizer supplies and consumption, use by crop, economics and constraints, among others.

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NEW IFA RELEASES

IFADATA Statistics from 1973/74 to 2004/05



Includes: production, imports, exports and consumption statistics for nitrogen, phosphate and potassium fertilizers.
Cd-rom, January 2007.

Contact: Olivier Rousseau,
IFA Agriculture Service
rousseau@fertilizer.org

32nd Enlarged Council Meeting Meeting cd-rom



December 2006, Buenos Aires, Argentina
Papers on the short-term situation and outlook for the fertilizer industry.
Cd-rom, January 2007.

2006 Conference papers cd-rom



This cd-rom compiles papers presented at IFA's conferences in 2006 (except the 2006 Technical Symposium in Vilnius, Lithuania) and papers presented by the IFA Secretariat at outside events.

The relevant IFA events were:

- Agriculture Conference: Optimizing resource use efficiency for sustainable intensification of agriculture, Kunming, China
- 74th IFA Annual Conference, Cape Town, South Africa
- IFA Crossroads Asia-Pacific 2006: Growing markets, nurturing success, (including the Production and International Trade Conference) Chiangmai, Thailand
- 32nd Enlarged Council Meeting, Buenos Aires, Argentina

Cd-rom, April 2007.

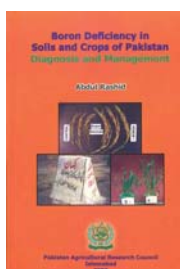
These cd-roms are reserved for IFA members.

Boron Deficiencies in Soils and Crops of Pakistan Diagnosis and Management

A. Rashid, Pakistan Agricultural Research Center,
Islamabad, Pakistan,
2006. 34 pp.
ISBN 969 409 184 5

Contact

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Islamabad, Pakistan
Fax: +92 51 925 5034
abdul.rashid@comsats.net.pk





word: Association

Healthy Diets: the Front against Pandemics

“Let food be your medicine and medicine be your food.” As scientific knowledge about health and disease increases, the wisdom of these words, spoken by the Greek doctor Hippocrates some 2400 years ago, becomes ever clearer.



*Luc M. Maene
IFA Director General*

Mothers have been teaching their children about the importance of starting the day with a hearty breakfast since the dawn of time. However, researchers are only now beginning to understand just how much influence nutrition has on health. In some cases diet can be the deciding factor between whether a genetic predisposition towards a certain disease is expressed or not. This is particularly true with regard to “lifestyle” ailments such as diabetes, heart disease, strokes and some cancers.

The Green Revolution saved millions of people from hunger by dramatically increasing crop production, especially production of grains such as maize, rice and wheat. Per capita calorie intake rose, but little attention was paid to effects on dietary balance. While helping to correct undernourishment (too few calories), the Green Revolution may have exacerbated

malnourishment (nutrient deficiencies) by displacing traditional crops rich in certain essential micronutrients.

Dieticians have known for decades that nutrient deficiencies can have devastating effects on human development. The public health sector has initiated countless initiatives to improve nutrient intake, ranging from simple measures such as salt iodization to complex campaigns entailing the distribution of food supplements.

As several new pandemics have emerged in recent years, the importance of good nutrition has once again come to the forefront. This time the emphasis is on how a balanced diet helps the body fight infection. What is the point, ask some people, of providing expensive medicines (e.g. retroviral drugs) for people who are barely eating well enough to survive, let alone thrive? Surely the first step is to strengthen the body’s natural defenses by ensuring adequate nutrition.

The result has been renewed attention to food supplies, dietary balance and agriculture. Fertilizer use has attracted new interest from unlikely allies, as policy makers have realized that targeted fertilization may be the most cost-effective way to deliver certain essential micronutrients frequently lacked by undernourished people, and that such fertilization is a necessary complement to efforts to increase

nutrient content through selective breeding.

Development programmes have therefore become more nuanced. Instead of poverty and hunger, we now hear about fostering good health and human well-being. This change of vocabulary could be the sign of first-stage success. While universal coverage does not exist, the blunt-edged victories of the Green Revolution are now giving way to more refined approaches that try to achieve balanced nutrition through precise adjustments to how food is produced.

For the fertilizer industry, this opens up a new area for market development. In coming years, traditional NPK fertilizers are likely to be complemented by micronutrient fertilizers. Integrated products may also become more common. Perhaps more importantly for the men and women who work in this sector, the opportunities to increase human well-being through targeted fertilization provide a reminder of the original mission of our industry and a point of pride. We have become so accustomed to acknowledging the negative side effects associated with the wide and sometimes excessive use of fertilizers, we do not always remember the contribution they have made to human well-being. The new nutrition paradigm makes this positive role very clear, pointing out that the fertilizer industry can do well by doing even more good in the future than it has already done in the past. ●

Strengthen the body's natural defenses by ensuring adequate nutrition

continued from page 6 **Getting a Grasp on REACH**

Seeking Help to Understand the Impacts for Your Company?



The European Fertilizer Manufacturers Association (EFMA) has been engaged with the European authorities, the overall EU chemical sector and other partners during the development of the REACH legislation. REACH is covered by EFMA’s online product stewardship module, an update of which will come out mid-year. EFMA has a dedicated task force to address issues related to REACH and the Organisation for Economic Co-operation and Development’s work on High Production Volume (HPV) chemicals.

www.efma.org



The European Chemical Industry Council has set up a professional services body to help the industry attain REACH compliance in a timely and cost-effective manner. A number of its tools, newsletters and guidelines are available free of cost while other services are provided on a paying basis. www.reachcentrum.org



The European Commission provides a wealth of background documents, tools and guidelines to help stakeholders understand and implement REACH. http://ec.europa.eu/enterprise/reach/index_en.htm



Calendar

IFA - 2007

21 - 23 May

75th IFA Annual Conference Istanbul, Turkey #

24 - 26 May

Zinc Crops 2007 - Improving Crop Production and Human Health
Istanbul, Turkey

Regular updates at www.zncrops2007.info

18 - 22 June

IFA/IFDC Phosphate Fertilizer Production Technology Workshop
Brussels, Belgium

Information and registration: hrd@ifdc.org

23 - 26 October

IFA Production and International Trade Conference #
Vancouver, BC, Canada

Registration opens in July 2007

5 - 9 November

IFA/IFDC Nitrogen Fertilizer Production Technology Workshop
Port of Spain, Trinidad and Tobago

Information and registration: hrd@ifdc.org

27 - 29 November

33rd IFA Enlarged Council Meeting #
Doha, Qatar

Registration opens in July 2007

17 - 19 December

IFA Crossroads Asia-Pacific
Bali, Indonesia

Registration opens in July 2007

Restricted to IFA members

Non-IFA - 2007

21 - 25 May

IFDC* – Agribusiness Information Points and Market Information Systems Kigali, Rwanda

27 - 30 May

RUENA – 15th Nitrogen Workshop Lleida, Spain

Fax: +34 915 640 800 jadiez@ccma.csic.es

www.nitrogen15workshop.udl.es

11 - 15 June

IFDC* – Agro-Input Marketing and Dealer Development
Pretoria, South Africa

While every attempt is made to provide accurate information, IFA cannot guarantee the details for non-IFA events. Contact the organizers for confirmation.

11 - 15 June

10th International Symposium on Soil and Plant Analysis
Budapest, Hungary

Fax: +36 1 2243640 koos@rissac.hu

17 - 20 June

BSC – GazChem 2007 Port of Spain, Trinidad and Tobago

Fax: +44 20 7903 2432 conferences@crugroup.com

www.britishtsulphurevents.com

9 - 13 July

Information Agriculture Conference Springfield, IL, USA

Fax: +217 762 8655 hreetz@ppi-far.org www.infoag.org

6 - 10 August

FIFA – Australian Fertilizer Industry Conference
Queensland, Australia

Fax: +61 2 6248 9860 nick.drew@fifa.asn.au

www.fifa.asn.au/default.asp?V_DOC_ID=1134

3 - 7 September

IFDC* – Agro-Input Policy and Regulatory Systems and Harmonization Ouagadougou, Burkina Faso

16 - 19 September

16th International Symposium: Mineral Versus Organic Fertilization, Conflict Or Synergism? Ghent, Belgium

Fax: +32 92 646247 patrick.dossche@ugent.be

www.soilman.ugent.be/ciec

17 - 20 September

AIChE – 2007 Ammonia Safety Symposium Las Vegas, NV, USA

Fax: +1 212 591 884 iliak@aiche.org www.aiche.org

1 - 5 October

INI – 4th International Nitrogen Conference Bahia, Brazil

nitrogen2007@nitrogen2007.com www.nitrogen2007.com

28 - 31 October

BSC – Sulphur 2007 Montreal, QC, Canada

Fax: +44 20 7903 2432 conferences@crugroup.com

www.britishtsulphurevents.com

17 - 19 October

FMB – 21st European Fertilizer Conference & Exhibition
Prague, Czech Republic

Fax: +44 208 979 4573 fmb@fmb-group.co.uk www.fmb-group.co.uk

*IFDC – An International Center for Soil Fertility and Agricultural Development

Fax: +1 256 3817408 hrd@ifdc.org www.ifdc.org

To view a more exhaustive list of conferences click on "Conferences and Events" on IFA's web site.



Invite nominations for candidates for the **2007 Pierre Becker Memorial Award**

The invitation is open to:

- Engineers who have achieved advances in the efficient and economic processing of phosphate raw materials and the production of phosphate fertilizers and other downstream products.

Nominations will be accepted from:

- Any individual, company, research institute, industry association or non-government agency. They may be drawn from the fertilizer industry, public or private sector, or from research institutes and education establishments.

In his lifetime, Pierre Becker was not only hailed as a world authority on phosphates and phosphate fertilizer processing technology, but was revered by all who knew him as a man of unique talents and deep humanity. To perpetuate his memory and spirit of enquiry, **Fertilizer International** launched the Pierre Becker Memorial Award in 2003.

The recipient of the Pierre Becker memorial award will receive £1,000 and will be invited to attend a presentation in Paris in 2008.

The criteria for making the Award will be originality of the work undertaken, practical application, plus any associated improvements in fertilizer processing and application efficiency, and environmental sustainability.

The award decision, made by the Editorial Board of **Fertilizer International** together with a representative of IFA, will be final.

Nominations should be sent in the first instance to:

Mark Evans, Editor Director, *Fertilizer International*, **BC Insight Ltd.**,
Southbank House, Black Prince Road, London, SE1 7SJ, United Kingdom.
Tel: +44 20 7793 2564 E-mail: mark.evans@bcinsight.com Web: www.bcinsight.com

- International Fertilizer Industry Association (IFA)
- 28, rue Marbeuf
- 75008 Paris, France
- Tel: +33 1 53 93 05 00
- Fax: +33 1 53 93 05 45 / 47
- ifa@fertilizer.org
- www.fertilizer.org

IFA comprises around 450 member companies in more than 80 countries and includes manufacturers of fertilizers, raw material suppliers, regional and national associations, research institutes, traders and engineering companies.

IFA collects, compiles and disseminates information on the production and consumption of fertilizers and acts as a forum for its members and others to meet and address technical, agronomic, supply and environmental issues.

IFA also sponsors research related to the efficient use of plant nutrients in agriculture, and liaises closely with relevant international organizations, such as the World Bank, FAO, UNEP and other UN agencies.

IFA President

Sihai Wu
President, SACF, China

IFA Director General

L.M. Maene

IFA Request Form fertilizersagriculture.com May 2007

Please tick the box below and return to IFA by fax: +33 1 53 93 05 45 / 47
or send an e-mail to publications@fertilizer.org

Note: most IFA materials are available via the web site at www.fertilizer.org

- Nitrogen Cycle in Agriculture and Mitigation of Reactive Nitrogen Side Effects
- Optimizing Reactive Nitrogen Use for Sustainable Agriculture Leaflet
- 2006 IFA Conference cd-rom *restricted to IFA members*
- 32nd Enlarged Council Meeting cd-rom *restricted to IFA members*

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Letters

We invite your contributions of letters, documents, articles, photographs, etc.

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