

Is Fertilizer Use Sustainable?

NORCROSS, Ga. — Record-high natural gas prices...ammonia plant shutdowns...supply and price uncertainty for nitrogen fertilizers...OPEC raises prices for crude oil. Items like these in the news remind us of our dependence on non-renewable resources. Farmers have cause to ponder: Can we sustain our crop production if we continue this dependence?

Producing and delivering fertilizers uses fossil fuel energy. Natural gas comprises 80 to 90 percent of the cost of producing ammonia. Phosphate production doesn't use as much energy directly, but it depends on the petroleum industry for its supply of sulfur. It takes a ton of sulfur to produce a ton of P_2O_5 . Potash mining uses little in the way of fossil fuel, but it requires energy to transport and apply any kind of fertilizer.

The raw materials for fertilizers are also non-renewable resources. While the supply of atmospheric nitrogen is virtually unlimited — about 37 thousand tons above every acre on the earth — it takes natural gas to make plant-available fertilizer from it. The estimated world reserves of phosphate rock amount to at least three billion tons of P_2O_5 — roughly 80 years' supply at current rates of use. Known reserves of potash exceed 10 billion tons of K_2O — at least 400 years' supply.

But will North American reserves of phosphate rock run out within the next 25 years? Probably not. For both phosphate and potash, large resources that are uneconomical to mine with today's technology and prices could potentially supply us into the future for 10 times as long as the known reserves. As recently as 1980 a publication forecast that Florida

could run out of high-grade phosphate rock by the year 2000 — yet Florida today continues to supply most of North America's demand. As with fossil fuels, new reserves continue to be discovered as fast as old ones are consumed.

Sustainability of fertilizer use also depends on its benefits to soil quality and health. Sustainable use recognizes that fertilizers boost the crop's contribution of organic matter to the soil as well as its yield. Sustainable use aims to apply amounts in keeping with the needs of the cropping system, supplementing nutrients supplied by manures, crop residues, and other organic inputs. Sustainable use includes management that minimizes loss of nutrients to sensitive waters and the air, through knowledge of nutrient cycling.

The future will include more efficient capture of nutrients

from animal manures, crop residues, and other organic materials. Agriculture will redesign itself to increase this efficiency, but some nutrients will continue to be lost to the larger cycles of nature. Nutrient demands will increase as yields continue to climb. Supplementing with fertilizers is a responsible use of natural resources from off the farm. Energy costs of transport and application are minimized when more concentrated nutrient sources are used.

No physical process is sustainable indefinitely. The key to sustainability is to use resources wisely to meet human needs for today and for future generations. Using mineral fertilizers to build soil health and to increase its capacity to produce food is a more sustainable investment than many others that are being made today.

Deere Partners To Introduce System

SAN ANTONIO, Texas — Recent developments in agriculture are driving changes in the way today's growers manage their crop production practices.

The introduction of crops with customized traits requires a new level of recordkeeping and attention to detail in order to preserve value and to ensure traceability.

To meet this challenge, agribusiness leader John Deere has joined forces with VantagePoint Network, and Crop Verifeye, LLC to develop and introduce an innovative crop identity-tracing system call Crop-Tracer™. This new service combines John Deere's field data collection technology with VantagePoint's data warehousing

capabilities and Crop Verifeye's third-party certification and field auditing services to build an advanced crop-tracking system.

John Deere's Ag Management Solutions (AMS) group has developed a new product called Field Doc™ that works with existing equipment to enable collection of data on field operations in real time. Field Doc™ operates with the StarFire™ Global Position Satellite (GPS) receiver, the GreenStar® display, and GreenStar mobile processor.

"Field Doc software collects and records information on all field operations from planting to harvest," said Terry Porter, marketing manager of AMS. "All the information can be readily transferred to your home computer and/or stored on the VantagePoint Network Web site depending on your needs."

"New-generation GreenStar products and other systems from AMS will be offered in the near future to more fully automate this data collection process," Porter said.

CropVerifeye (patent pending) provides ISO9000 third-party verification of the most stringent contract specifications.

"We offer two levels of field audits (Gold and Silver). Our trained auditors will verify any and all details to meet your contract requirements from field practices, varietal purity, weed and insect control to storage site and/or equipment sanitation," said Dr. Jim Mock, co-founder and vice-president, marketing/sales, Crop Verifeye.com.

VantagePoint Network (www.vantagepoint.com) offers a private, secure site to document, store, and view the collected information.

"VantagePoint is a tool to help manage your information," said Dale Johnson, director of commercial accounts for VantagePoint Network. "This information can also be shared discretely with your trusted agribusiness suppliers, contractors, advisers, and food processors."

CNH Reports First Quarter Results

RACINE, Wis. — CNH Global N.V. (NYSE:CNH) reported first quarter consolidated net revenues of \$2.454 billion compared to revenues of \$2.608 billion last year. When adjusted for the impact of divestitures and foreign exchange rates, net revenues were essentially unchanged year-over-year. The company's industrial operating margin rose to \$91 million, compared to \$31 million for the same period in 2000.

On a net basis, CNH reported a loss, before restructuring, of \$67 million, or \$.24 per share compared to \$54 million, or \$.36 per share for the first quarter last year. When adjusted for the impact of the equity devaluation in Turkey of approximately \$.05 per share, the company's EPS was slightly better than expecta-

tions. (Per share results for the 1999 period are based upon a lower number of shares.) After restructuring, the net loss was \$70 million, or \$.25 per share compared to \$59 million, or \$.40 per share for the first quarter last year.

"Our overall performance was somewhat better than expected in the first quarter," said Paolo Monferino, president and chief executive officer. "Our sales of agricultural equipment in the Americas were encouraging and in Western Europe, our unit sales were up in a down market."

"Our restructuring plan is on schedule as our gross margin and SG&A improvements demonstrate. We are confident that we will achieve our full year objective of merger-related profit

improvements of at least \$300 million. These improvements will help us bring our industrial operating margin up to \$400 million for 2001. As a result, our financial outlook for the year remains unchanged: a year-over-year reduction of approximately \$100 million in net loss."

First quarter net sales from Equipment Operations totaled \$2.286 billion, down six percent compared to \$2.423 billion for the same period in 2000.

Equipment Operations gross margin as a percent of net sales of equipment improved to 17.1 percent in the first quarter of 2001, compared to 15.7 percent for the same period last year, in spite of the decline in construction equipment sales and an unfavorable product mix.

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