



## Food

**Today, fertilizers help produce up to 60% of all crop yields. Macronutrient and micronutrient fertilizers play a vital role in soil fertility and sustainable crop production.**

The United Nations estimates that world population will climb from 7 billion to 9 billion by 2050, and increasing global prosperity means more demand for meat—and for the grain to feed livestock raised for food. For that many human beings to thrive on our planet, the world’s farmers must produce more food, fuel and fiber. And they will need fertilizers to do it. By striving to produce and deliver the highest quality, most innovative crop nutrition products, we help farmers rise to the challenge.

The Mosaic Company is one of the world’s largest producers and marketers of concentrated phosphates and potash crop nutrients for the global agriculture industry. Farmers around the globe use our potash and phosphate products to help nourish their crops—and to optimize the food they can grow on every acre of farmland.

## Mine-to-Market Value

(G4-12) Mining, producing and delivering millions of tonnes of fertilizer each year to customers around the globe is complex. It requires teams of dedicated professionals working to make responsible decisions each day and at every step in the production and supply chains.



## Our Products and Brands

(G4-4) Through our broad crop nutrition product offering, we are a single-source supplier of phosphate- and potash-based crop nutrients and animal feed ingredients to customers in approximately 40 countries. Our quality nutrients play an important role in nourishing farmers’ soil, growing healthy plants, and increasing global food security.

We mine phosphate rock in Florida and process rock into finished phosphate products at facilities in Florida and Louisiana. We mine potash in Saskatchewan and New Mexico. We have other production, blending or distribution operations in Brazil, China, India and Paraguay, as well as strategic equity investments in a phosphate rock mine in the Bayovar region in Peru, and a joint venture to develop a phosphate rock mine and chemical complexes in the Kingdom of Saudi Arabia. Our distribution operations serve the top four nutrient-consuming countries in the world.

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## Phosphate and potash are 2 of 17 essential nutrients plants need for growth and reproduction



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### Phosphates

We are the largest integrated phosphate producer in the world and one of the largest producers and marketers of phosphate-based animal feed ingredients in the United States. We sell phosphate-based crop nutrients and animal feed ingredients throughout North America and internationally.

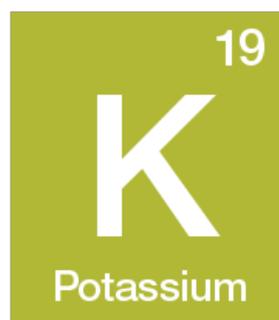
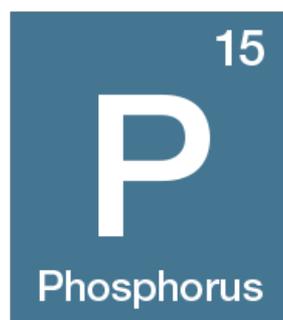
We account for approximately 14% of estimated global annual production and 79% of estimated North American annual production of concentrated phosphate nutrients.

### Potash

We are one of the four largest potash producers in the world. We sell potash throughout North America and internationally, principally as fertilizer, but also for use in industrial applications and, to a lesser degree, as animal feed ingredients. We account for approximately 13% of estimated annual global potash production and 43% of estimated North American annual potash production.

### International Distribution

Our International Distribution segment consists of sales offices, crop nutrient blending and bagging facilities, port terminals and warehouses in Brazil, Paraguay, India and China. Our international distribution activities have the capability to supply a wide variety of crop nutrients to our customer base.



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**Examples of Mosaic's products include:**

**MicroEssentials®**



**K-Mag®**

**Nexfos®**

**Aspire®**

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- Diammonium Phosphate (DAP): DAP is the most widely used high-analysis phosphate crop nutrient worldwide. DAP is produced by combining phosphoric acid with anhydrous ammonia. DAP is a solid granular product.
  - Monoammonium Phosphate (MAP): MAP is the second most widely used high-analysis phosphate crop nutrient and the fastest growing phosphate product worldwide. MAP is also produced by first combining phosphoric acid with anhydrous ammonia. MAP is a solid granular product.
  - Muriate of Potash (MOP): MOP is the primary source of potassium for the crop nutrient industry. Red MOP has traces of iron oxide. The granular and standard grade Red MOP products are well suited for direct fertilizer application and bulk blending. White MOP has a higher percent potassium oxide. White MOP, besides being well suited for the agricultural market, is used in many industrial applications.
  - MicroEssentials®: MicroEssentials fertilizers are a line of value-added ammoniated phosphate products that are enhanced through a patented process to include micronutrients such as sulfur or zinc. These products provide for uniform nutrient distribution, resulting in improved nutrient uptake, which allows plants to maximize their yield potential.
  - K-Mag®: K-Mag delivers potassium (K), magnesium (Mg) and sulfur (S) in a single granule, reducing the need for fertilizer blends.
  - Nexfos®: In 2011, Mosaic unveiled Nexfos, a new animal feed-grade phosphate product that increases efficiency, enhances bioavailability and contains a higher sustainable concentration of phosphate over traditional livestock feed products. Nexfos represents the first innovation in feed-grade phosphate in more than 40 years. Nexfos also reduces purchasing, storing and handling costs for consumers, and offers significant reductions in requirements during production. Production design changes have resulted in increased water and energy efficiencies.
  - Aspire®: Aspire is the first-of-its-kind micronutrient-enhanced potash-based fertilizer. Aspire with Boron premium potash combines potassium and boron in each granule to achieve uniform distribution and increased yields to meet the growing need for micronutrients in crops like corn, soybeans, alfalfa and cotton.

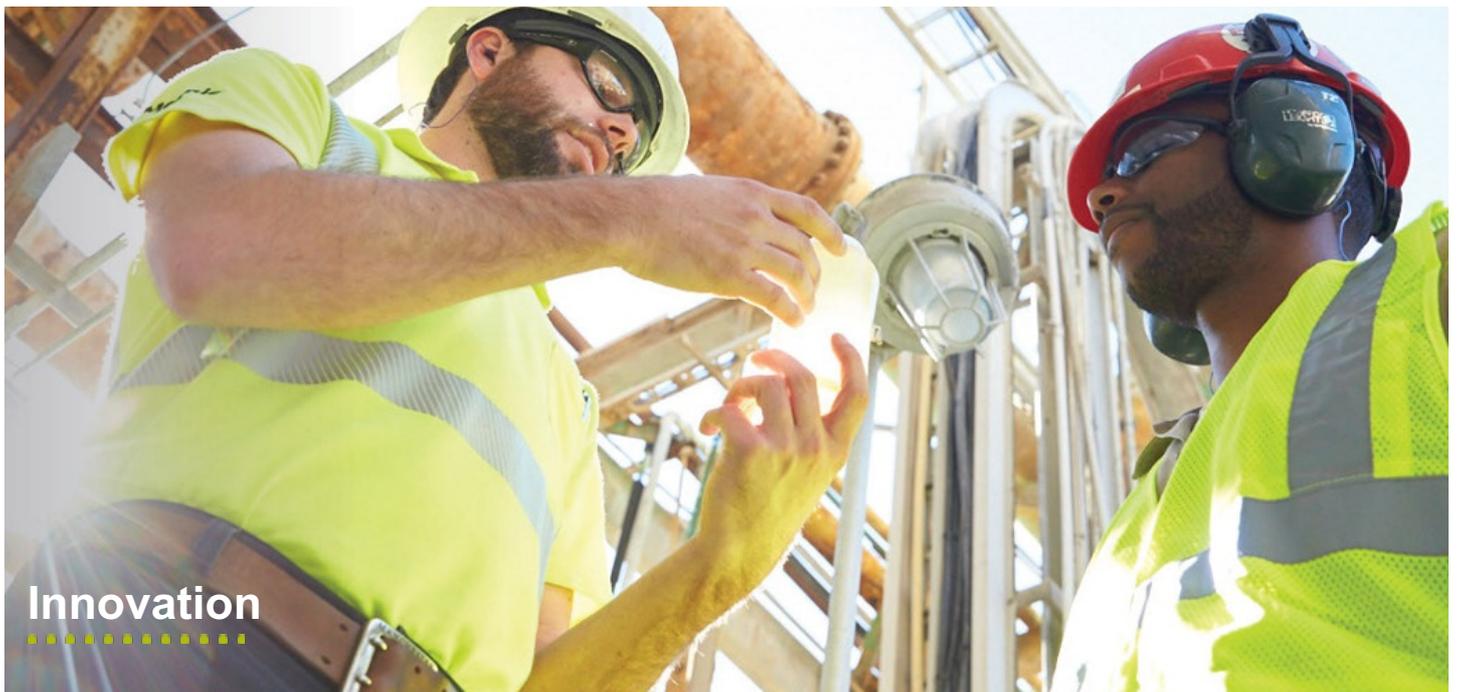
# Helping Smallholder Farmers Produce More Food and Break the Poverty Cycle

Since 2008, The Mosaic Villages Project in India and Guatemala has helped smallholder farmers move out of poverty and achieve greater food security through improved crop productivity. Our investment includes cash grants and the time and talents of Mosaic agronomists, who work alongside implementing partners to train local farmers on balanced crop nutrition and agricultural best management practices. As a result, crop yields have increased dramatically over traditional farming practices.

In India, it is estimated that between 70 and 80 percent of farmers have landholdings of less than two hectares. In the districts of Mewat and Alwar, two of India's most impoverished and isolated areas, Mosaic has partnered with the Sehgal Foundation to create the *Krishi Jyoti* Project, which means "enlightened agriculture." *Krishi Jyoti* has now reached 45 villages and has been responsible for the cultivation of nearly 9,000 acres of farmland. The project has directly benefited more than 20,000 farmers.

In Guatemala, where more than 56% of the population lives in poverty, the rural economy is based in agriculture with corn as the main staple crop. Unfortunately, indigenous farmers in rural areas grow only about 75% of what they need to feed their families. Mosaic's implementing partner, HELPS International, works to increase farmers' productivity in corn crops, improve native seed quality through seed banks and offer access to growing cash crops, corn storage technology, cook stoves and water filters.

An independent evaluation by Deloitte in 2014 confirmed that average yields have reached four metric tonnes per hectare (MT/ha) compared with 0.8 MT/ha before the program began, representing a five-fold increase. Deloitte's evaluation also found that best practices from the program are spreading by word of mouth to the surrounding villages without any level of intervention by Mosaic or HELPS. In many of these neighboring villages, the doubling of average yield is being observed.



**Innovation**

**At Mosaic, we foster innovation and encourage ideas that make us better. Innovation occurs across every level of our operations—from mining and manufacturing, to our product development, crop nutrition science, agronomy and nutrient stewardship.**

**Product and Process Innovation**

We are constantly striving to be better, lower our costs and operate more sustainably—whether it’s by reducing our water consumption, cogenerating electricity at our facilities, or improving the safety of our plants and mines.

We seek to deliver product technology that optimizes yields while helping farmers care for the environment.

- Our fertilizer and feed products are designed to efficiently and sustainably increase agricultural production.
- Commercial retailers are able to gain a differentiating edge in a competitive market by selling Mosaic’s innovative premium products, while growers who use them are able to achieve efficiency, yield gains and greater profit potential.

**2015 Innovation Progress**

Mosaic’s premium product MicroEssentials® is the leading premium fertilizer brand in the world. It ensures uniform nutrient distribution, increased nutrient uptake, and season-long sulfur availability across a variety of crops and soil conditions. In 2015, we continued our efforts to further expand MicroEssentials production capacity. Our conversion project, set to expand our total MicroEssentials capacity to 3.5 million tonnes by 2017, is progressing well.

We continue the expansion of potash capacity, with the addition of K3 shafts at our Esterhazy mine that are expected to add approximately 0.9 million tonnes to our potash operational capacity. In December 2014, our Board approved an approximate \$1.5 billion investment in the K3 project over the next 10 years. The project is on track to start producing ore in 2017. Once complete, we expect that K3 will be one of the largest, most competitive potash mines in the world.

Our phosphates concentrates facilities use molten sulfur to produce sulfuric acid, which is used in the phosphoric acid manufacturing process. Sulfur is an important raw material that has often been subject to volatile pricing and availability. We are constructing a sulfur melter that heats prilled sulfur to liquid form. The melter, which will have the capacity to melt approximately one million long tons of sulfur annually, will allow Mosaic to leverage economic benefits within the global sulfur marketplace.

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We seek to deliver

**PRODUCT  
TECHNOLOGY**

that optimizes yields while helping farmers  
care for the environment

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**Product  
Responsibility**  
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## Materials Stewardship Programs

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**G4-DMA: In December 2013, Mosaic's Belle Plaine facility received Product Stewardship Excellence certification from the International Fertilizer Association's (IFA) Protect & Sustain Product Stewardship initiative. This certification covers the product life cycle including: management systems, product development and planning, sourcing and contracting, manufacturing techniques, and supply chain to the customer.**

Communications are directed up and down the value chain, such as supplier certification requirements as part of sourcing and procurement of inputs, (material) safety data sheets (M/SDS), labels, registrations, quality/traceability information, training and educational materials.

Mosaic's research and development processes include internal and external research and science-based data generation to advance product advocacy and customer results.

Finally, process improvements include an Environmental Health and Safety Management System that is aligned to ISO 14001/OHSAS 18001 and ANSI-10, enterprise mechanical integrity programs and contractor accountability programs.

We believe Mosaic's products are among the most responsibly sourced in the world, and we are committed to the sustainable manufacturing of our products. For example, in 2015, Mosaic developed improved raw material sourcing guidance for sulfuric acid and zinc to prevent contamination of our products with trace metals.

We are similarly committed to responsible use of our products. Crop nutrients must be applied sustainably to mitigate potentially negative environmental impacts stemming from improper use. Among industry organizations to which we belong and the farmers who use our products, we encourage the adoption of the 4Rs of nutrient stewardship: Right source, Right rate, Right time and Right place.

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## Received the "Product Steward Excellence" certification



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## Product Responsibility

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(G4-PR3) Mosaic complies with safety, environmental, labeling and registration required by country and local governments where we sell and distribute fertilizer, animal feed and industrial products. Where U.S. standards are more stringent, we follow those more rigorous standards on the products that we produce both in the United States and for export.

Mosaic provides the required country, state and local product documentation for all shipments. This includes detailed labels, data specification sheets and a safety data sheet (SDS) for all products. These documents provide information about proper product handling, safety precautions and guaranteed analysis. Situations requiring disposal are also addressed in the SDS. For product undergoing vessel transport, the SDS includes certification that the discharge of cargo hold rinsate is not harmful to the marine environment.

Mosaic promotes customer education following the 4R Nutrient Stewardship framework of the Right nutrient source, applied at the Right rate, at the Right time and at the Right place. Our agronomists share this message worldwide.



## SPOTLIGHT

# 4R Nutrient Stewardship Certification Program – 1 Million-Acres Milestone

The Mosaic Company Foundation supports the Nutrient Stewardship Council's 4R Nutrient Stewardship Certification Program. This voluntary certification program is regionally focused on significantly reducing and preventing applied nutrients from running off fields by providing 4R nutrient recommendations or application services. By the end of 2015, the Nutrient Stewardship Council announced that it reached an important milestone: More than 1 million acres in the Western Lake Erie Basin (WLEB) are now under the guidance of nutrient service providers that have earned certification through this program.

"At Mosaic, we support and promote the 4R Nutrient Stewardship framework to help farmers achieve the benefits of fertilizer while reducing nutrient loss to the environment," said Rick McLellan, board member of The Mosaic Company Foundation and Senior Vice President – Commercial for The Mosaic Company. "We are proud to partner with the Nutrient Stewardship Council, and we look forward to ongoing collaboration that builds on this significant certification milestone."

25 Certified  
Branch  
Locations



2,645 farmers/  
1.2 mm acres



more than  
20% of total  
farming acres  
in WLEB

(G4-PR4) Mosaic has automated systems to manage, track and monitor incidents related to noncompliance with regulations and voluntary codes concerning product and service information and labeling. We are committed to quality and responsible labeling and we investigate all questions or claims about the labeling, quality or guaranteed analysis of our products and work with the customer and/or appropriate agency to resolve any claims that arise.

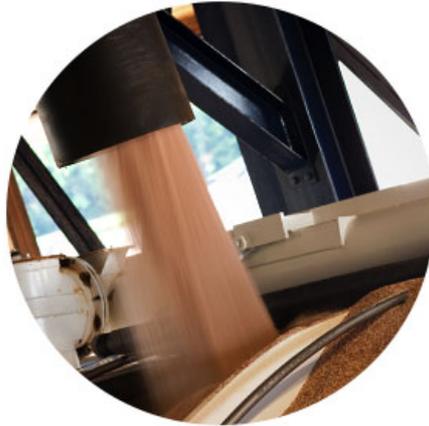
### Reducing the Environmental Impacts of Our Products and Services

(G4-EN28) Mosaic products, predominantly fertilizer and animal feed ingredients, are used in various stages of agricultural operations with multiple steps and biological processes.

To the extent possible, bulk transport is used to minimize the need for extensive packaging throughout the supply chain. Mosaic supports and helps promote The Fertilizer Institute's (TFI) Bulk Blend Workshops and Manual, which eliminates the need for packaging of major raw materials or the final product. This process completely eliminates the need for bags as the product is transferred from dealer to farmer. Because of the sizing and blending capabilities of our bulk materials, we

encourage the use of the bulk blending and delivery system in farming operations. In 2015, more than 75% of the sales volumes (tonnes) from our Phosphates, Potash and International Distribution segments were sold in bulk.

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## **We encourage the use of the bulk blending and delivery system in farming operations**

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Agricultural operation processes are not within Mosaic's purview to control; however, the nutrient elements of our products often are recycled into these or other agricultural systems. Examples of these systems include:

- Fertilizer is applied to the soil and then taken up by plants; the plants can be used for human or animal food. This food is processed and excreted by humans and animals as manure or biosolids, which may be recycled and used as nutrients similar to mineral fertilizers, depending on infrastructure (e.g., publicly-owned treatment works reuse water distribution systems).
- Animal feed materials are taken up by animals as food and excreted as manure. These materials may be recycled and used as nutrients similar to mineral fertilizers, depending on infrastructure (e.g., feed lot versus free-range grazing).

To further encourage stewardship of our products, Mosaic has formed a product stewardship team from various disciplines and is pursuing opportunities to cooperate with supply chain and logistical partners to identify and implement stewardship enhancements on a global basis.

(G4-EN27) Mosaic has a dedicated agronomy team that conducts field trials to evaluate the performance of our products and promote and support 4R Nutrient Stewardship. In 2015, we conducted 350 small-plot trials in Argentina, Brazil, Chile, China, Canada, India, Northern Latin America (Mexico to Peru) and the United States. These trials were conducted by highly regarded private researchers and universities that follow rigorous scientific standards. In addition, more than 200 demonstration plots were conducted in the same countries via collaborations with customers and growers. In total, more than 500 plots of research were established in 2015.

As another example of our research efforts, Mosaic continues its collaboration with a highly regarded crop sciences professor and researcher at the University of Illinois to develop advanced agronomic systems aimed at sustainably increasing corn and soybean productivity by combining fertilizer best management practices with other agronomic technologies. This research evaluates nutrient requirements of modern corn hybrids and soybean varieties under different field conditions. A complete understanding of field conditions is a precondition of a balanced crop nutrition program.

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## **CropNutrition.com is a digital hub of soil fertility and balanced crop nutrition information**



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## Educational Tools

Mosaic supports an educational initiative to help the industry understand fertilizer best management practices as a way of reducing the impact of fertilizers on the environment.

[CropNutrition.com](https://www.cropnutrition.com) is a resource for retailers, growers and media members seeking to better understand soil science, grow healthier crops, and increase productivity and yield – sustainably. By simplifying highly technical and agronomic information, CropNutrition.com is a digestible digital hub of soil fertility and balanced crop nutrition information. Retailers and growers benefit from Mosaic sharing information that will allow them to think progressively about crop fertility.



## Industry Initiatives

4R Nutrient Stewardship (4Rs) is about doing everything “right” in applying fertilizer and effectively reducing agriculture’s potential for negative externalities. 4R Nutrient Stewardship encompasses science-based fertilizer best management practices to achieve specific cropping system goals, including environmental protection. To achieve those goals, the 4Rs framework promotes a focus on the Right nutrient source, at the Right rate, at the Right time, and in the Right place.

The concept of [4R Nutrient Stewardship](#) is simple, but implementation is knowledge-intensive and site-specific. Other agronomic and conservation practices, such as tillage practices and cover crops, play a valuable role in good nutrient stewardship. As a result, fertilizer best management practices are most effective when applied with other agronomic and conservation practices. Mosaic partners with the fertilizer industry to enhance understanding, adoption and promotion of 4R Nutrient Stewardship among stakeholders.

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## The 4Rs of Nutrient Stewardship



**Right Source**

**Matches fertilizer type to crop needs**



### **Right Rate**

**Matches amount of fertilizer to crop needs**



### **Right Time**

**Makes nutrients available when crops need them**



### **Right Place**

**Keeps nutrients where crops can use them**

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## **Partnerships**

Mosaic established and continues to fund the [Mosaic Fertilizer Technology and Research Centre](#) at the University of Adelaide, Australia. The centre focuses on soil chemistry and fertilizer technology, and uses the latest technology to develop innovative fertilizer formulations to improve nutrient use efficiency.

Mosaic also has a long-term partnership with a globally recognized plant nutrition expert at Sabanci University in Turkey, whose research focus is balanced crop nutrition and nutrient interactions conducted through greenhouse experiments.

We accepted the 2015 Research Partner Award from The University of Florida's Institute of Food and Agricultural Sciences for

supporting and advancing its research, teaching and extension efforts.

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## Watch this video to learn more

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**Customer  
Satisfaction**

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**Driven by our mission to help the world grow the food it needs, Mosaic helps improve crop yields through the science-based and efficient use of crop nutrients.**

Our continual focus on developing and testing new products, such as our premium product line, ensures we can help meet the unique needs of growers in every part of the world. In 2015, we proceeded with plans to further expand MicroEssentials® capacity to bring total capacity to 3.5 million tonnes by 2017. We currently have 12 potential products or product variations in various stages of development.

Using more than 500 research plots around the world, we evaluate agronomic practices, test crop nutrition performance, and develop recommendations to mitigate potentially negative environmental impact stemming from improper use. Please see [G4-EN27](#) for more information.

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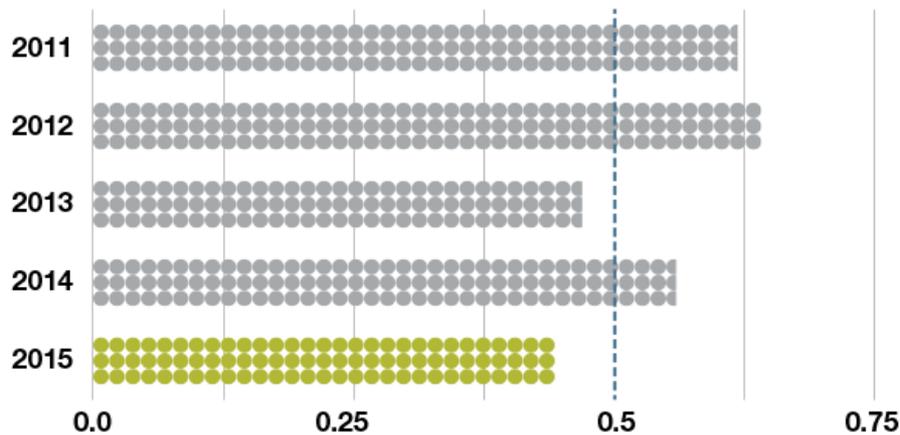
(G4-DMA, G4-PR5) At Mosaic, customer satisfaction and loyalty are paramount to sustaining and growing our world-class organization. On an annual basis, we adhere to a trusted feedback methodology to measure satisfaction levels among our customer base. This global feedback system also allows us to monitor recent performance, identify which performance factors are likely to have the biggest impact on customer loyalty, and look for potential trends impacting our business relationships.

We use the same methodology throughout Mosaic's global operations. In 2015, Mosaic earned a score of 7.6 on a scale of 0 to 10. This score is described as "Quite Satisfied."

Our key customer loyalty metric—Net Promoter Score (NPS)—is a standard index across a variety of industries around the world. We use this metric to benchmark our results against others', allowing us to identify and target opportunities for improvement. Year over year, we work to improve our performance by providing quality products and ensuring on-time delivery and logistical support. In 2015, Mosaic earned an NPS score of 44%. The survey results are shared across our commercial business and with key customers around the world, which serves as an opportunity to gain additional insight into the factors that contribute to the score. Further, we conduct analyses to determine how we can continue to improve our business relationships and future NPS scores.

## Mosaic Global Net Promoter Scores

Weighted Average



--- Threshold for a Score of Excellence

Net Promoter, NPS and Net Promoter Score are trademarks of Satmetrix Systems, Inc., Bain & Company and Fred Reichheld.

Note: Net Promoter Score indicates customer loyalty and 0.50 is considered the threshold for excellent companies.

Additionally, we conduct an annual brand awareness tracking study for our premium product brands, including MicroEssentials®, K-Mag®, Aspire® and Pegasus®, which includes a product satisfaction measurement. Compared to nine other premium fertilizer products, three of four Mosaic products received the highest satisfaction rating with 85 to 91% of respondents reporting that they are highly to extremely satisfied with the product.



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© 2016 The Mosaic Company. All Rights Reserved. We support and promote 4R Nutrient Stewardship: Right Source, Right Rate, Right Time, Right Place.



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