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Trends and Opportunities in Specialty Fertilizer

New Orleans

Blake Hurtik & Lauren Williamson

November 2017 for TFI Outlook

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The Argus view

- One of the world's leading PRAs, Argus is a team of more than 900 staff members in 20 global offices
- Publishing more than 11,000 daily spot and forward price assessments, plus market intelligence for world commodities markets
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Fertilizer Latino Americano

22-24 January 2018
Renaissance Hotel, São Paulo, Brazil

An Argus and
CRU collaboration



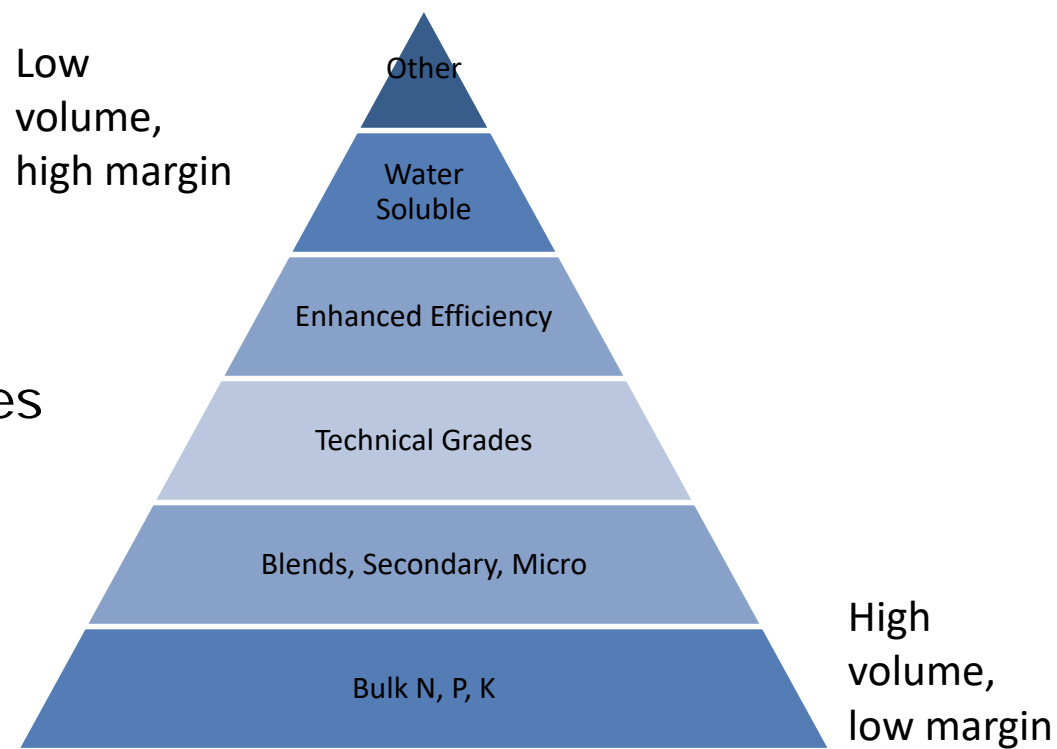
Micronutrients Forum on 22 January - Delegates will benefit from all the agronomic and commercial insight needed to leverage their position in this growing market.

A dedicated track of presentations focused on Innovation and R&D - Examine developments in soil analysis, crop requirements and new fertilizer blends to meet regional demand

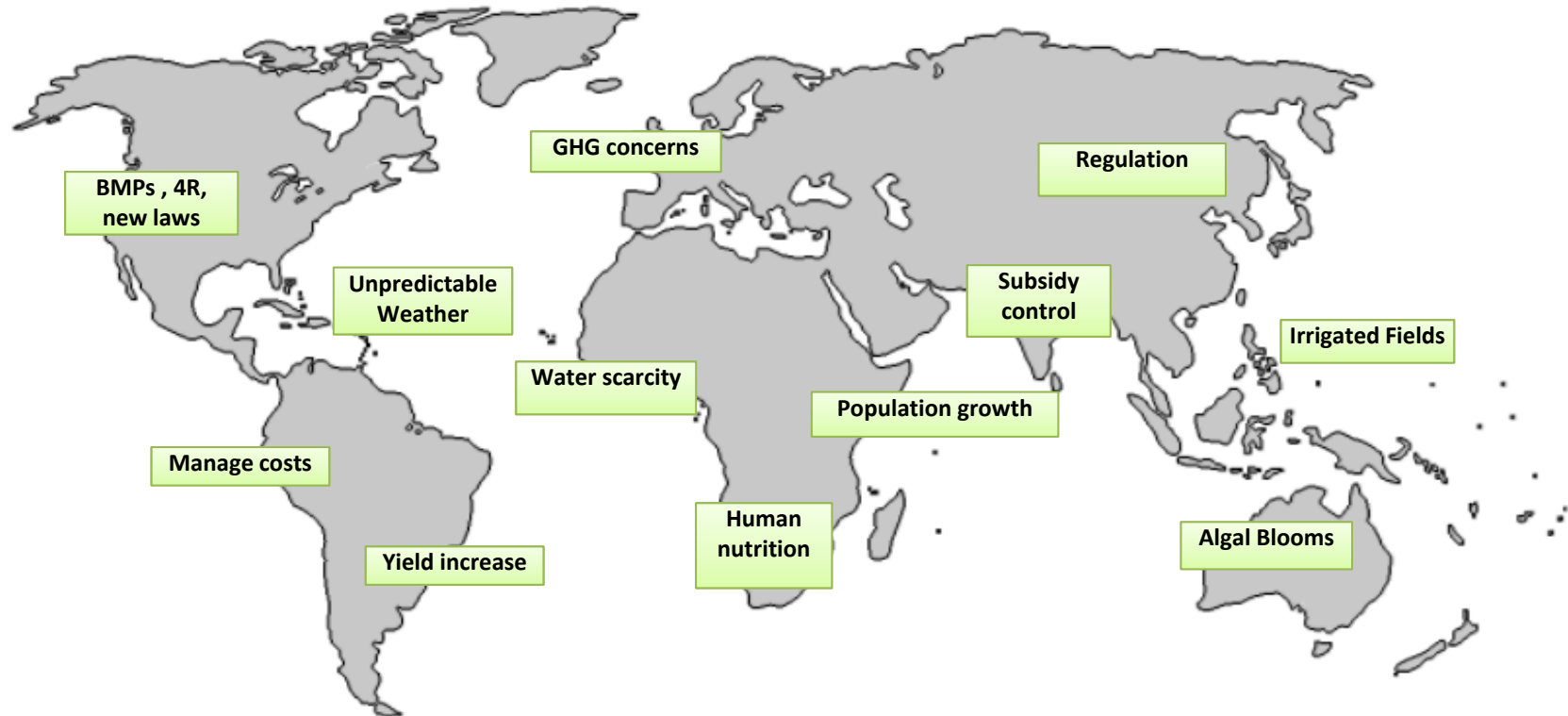
Register now at www.argusmedia.com/fla

Topics covered

- Drivers
- Enhanced Efficiency
- Specialty Blends
- Company Case Studies
- Future

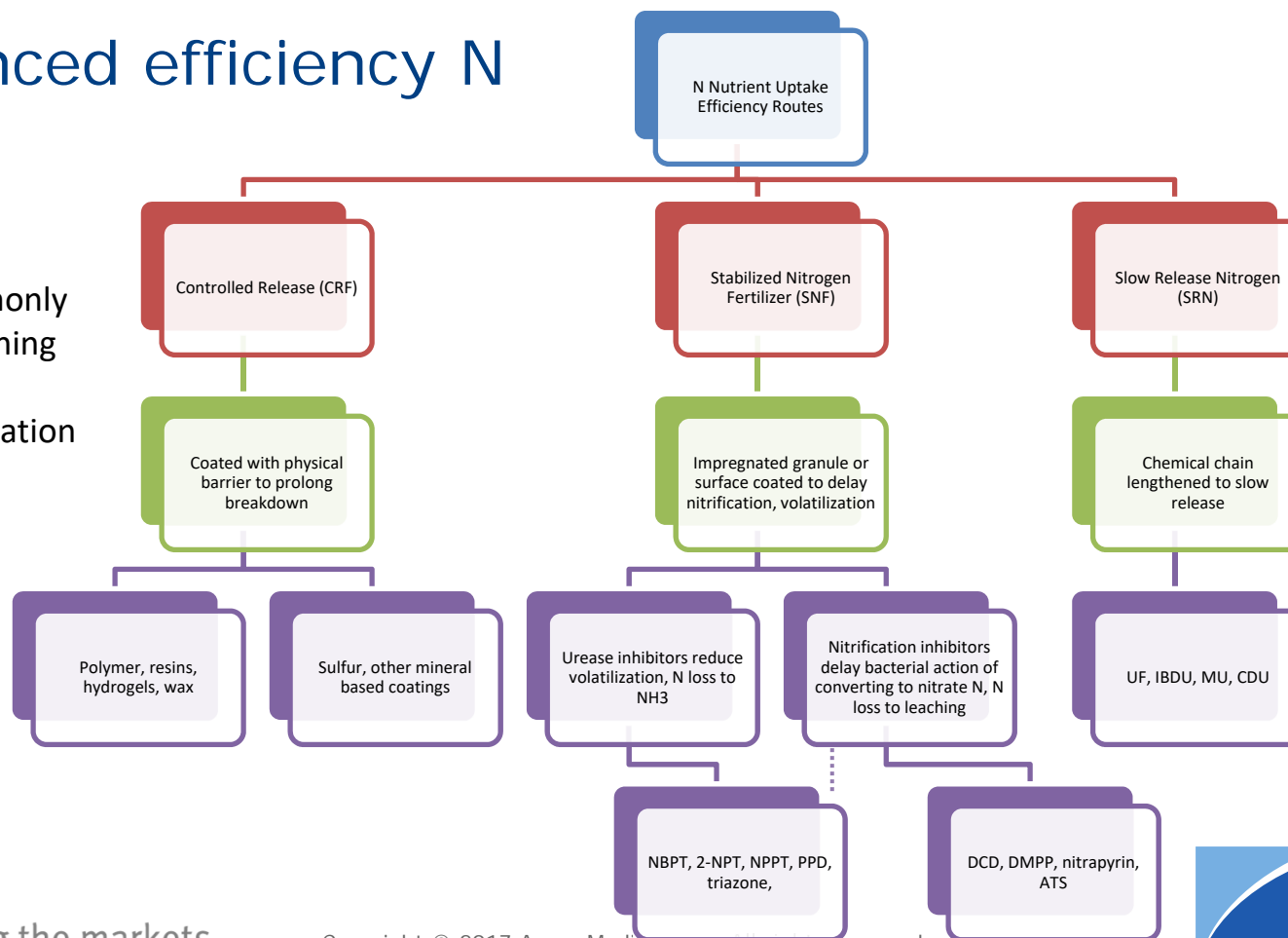


Drivers: Resource management, ag profitability, population



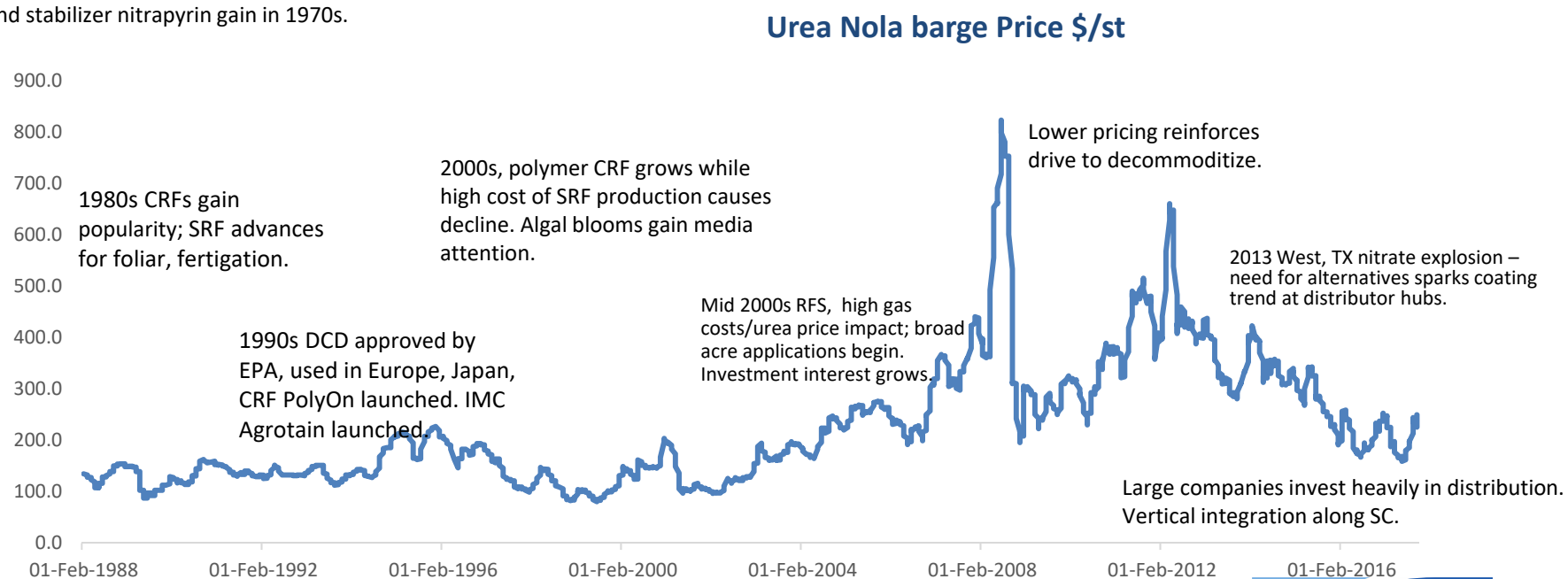
Enhanced efficiency N

N loss is commonly
~30% to leaching
and
~10% to nitrification

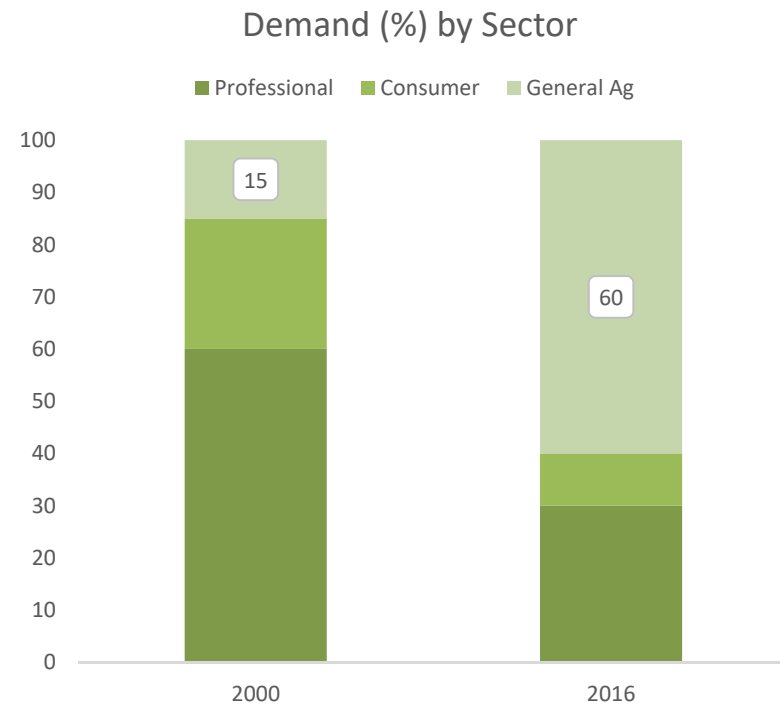
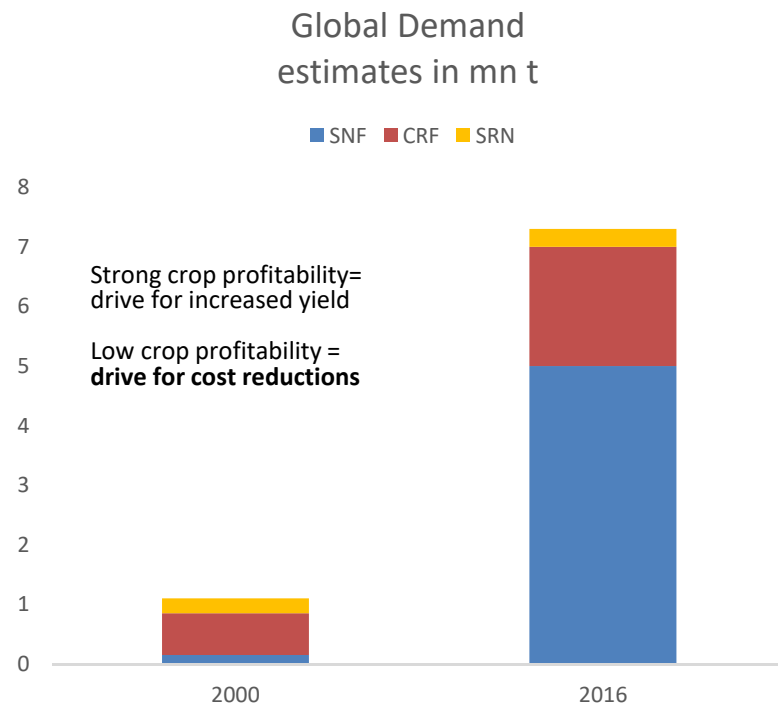


Evolution of N management

SRF patents 1920-60s Europe, US. CRF Scott's Osmocote patent 1967. SCU Nu-Gro and stabilizer nitrapyrin gain in 1970s.



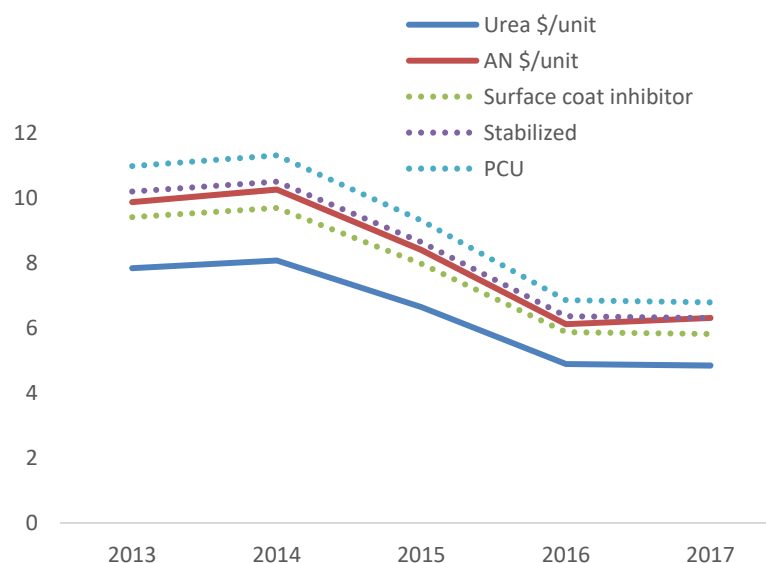
Huge growth in 15 years, but adoption tied to logistics



Pricing challenges for heterogeneous products

- N savings must be higher than the price premium for the product
- In Europe, take \$/unit N value of nitrate and capture difference to \$/unit N value of urea
- Freight from production point for homogenized products can distort and fragment pricing
- Time lag with underlying commodity price movements creates exposure
- Huge variations in contracts, price formulas, particularly between specialty crops vs cash crops

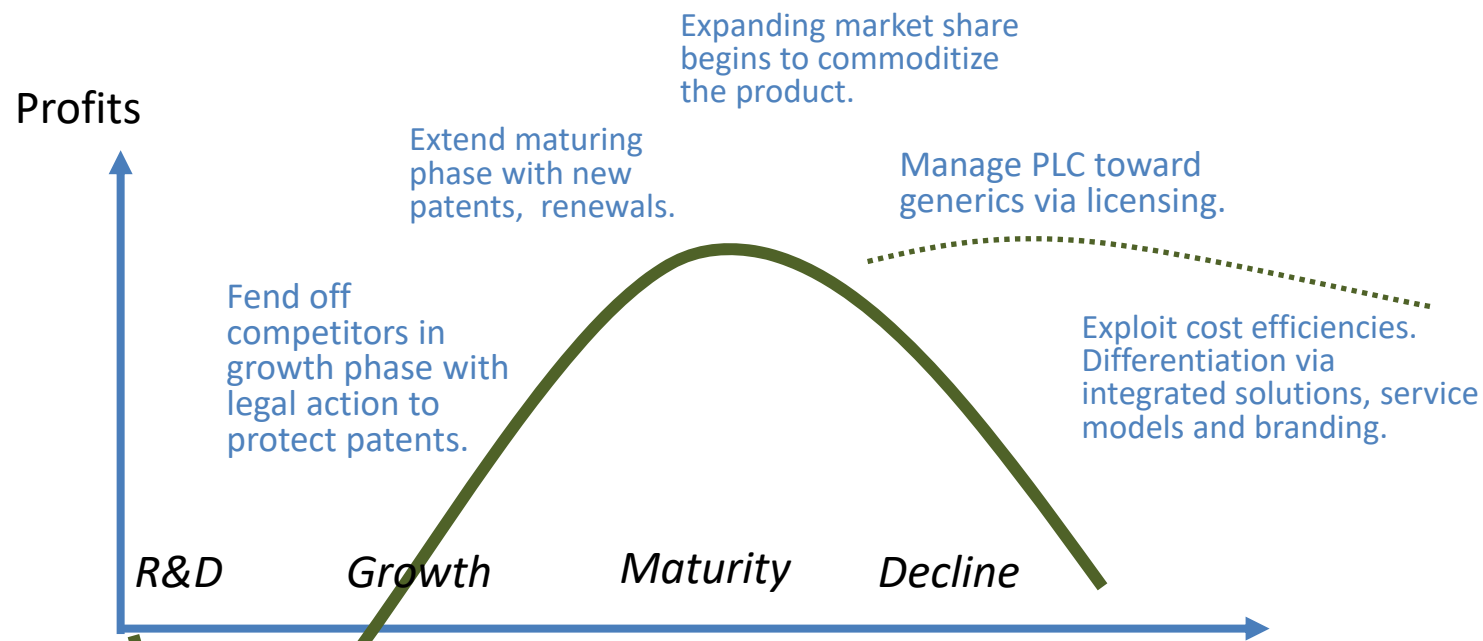
Theoretical Interior US Distribution Hub
Pricing



A busy decade of investment - PE's next goal?

	Year		Year
Agrium buys Pursell tech \$75mn	2006	Hanfeng Evergreen sells plants on financial difficulties	2014
Chisso, Asahi, Mitsubishi form JCAM (invest new PCF Taiwan plant 2016)	2009	Koch buys Agrium Advanced Tech; (Yara buys Brazil distributor Galvani stake)	2014
Koch buys Agrotain \$94mn (and buys UK dist Bunn, incorporates MU from GP)	2011	Koch licenses N-tegration technology Yara buys Agrium USWC upgrade facilities	2015
K+S sells Compo (est 1956) to PE	2011	Solvay partners with EcoAgro (est 2014)	2015
Gavilon exclusive distributor Arborite in US, Mexico	2011	Kingenta buys Ekompany (est 2010) and portion of Compo – other division sold to PE	2016
ICL buys division of Scotts \$270mn	2011	Stamicarbon invests \$6mn in Pursell Agri Tech	2017
EuroChem buys BASF Entec technology (also buys US dist BenTrei in 2015 and Brazil Tocantins 2016)	2012	Yara invests in UAS production in Sliuskill	2017
PE firm establishes Verdesian Life Sciences (also acquires Specialty Fert Products 2015)	2012	Koch Enid Super U expansion	2017

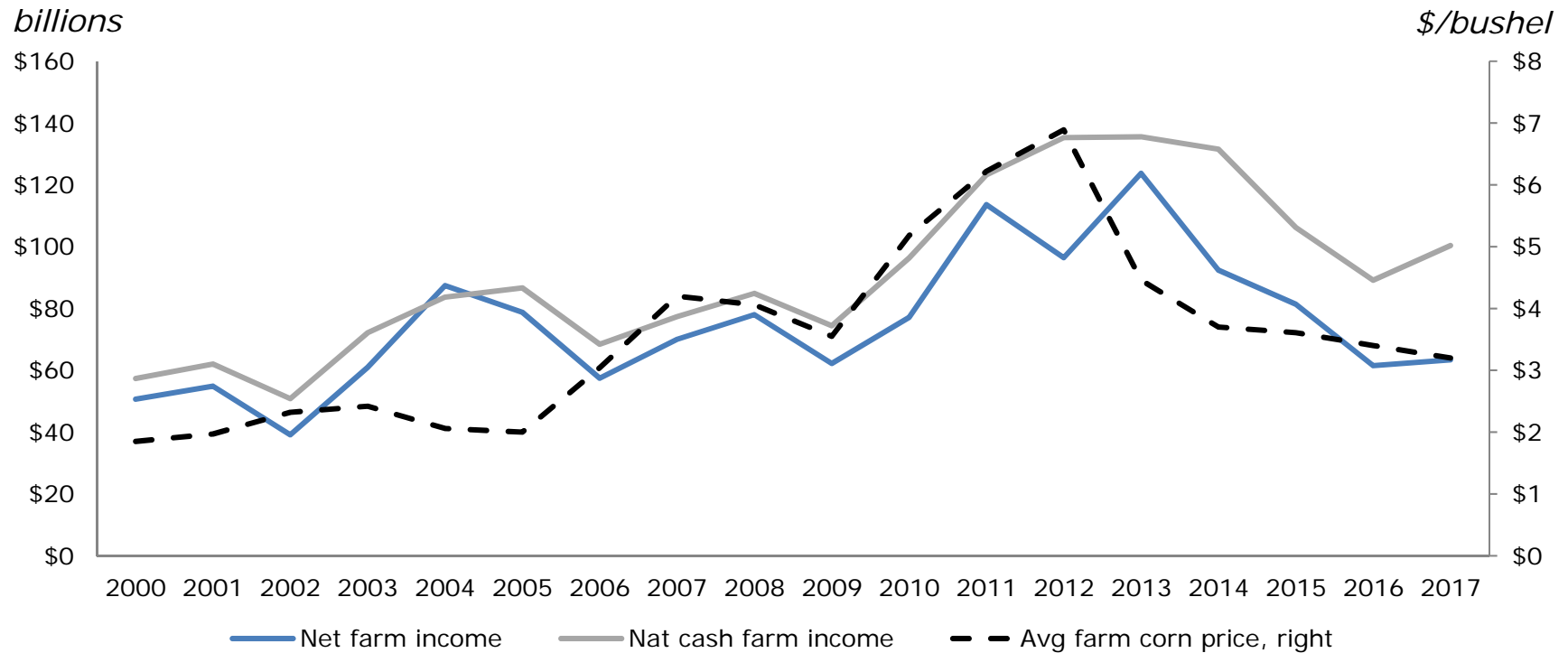
Product life cycle – first mover advantage?



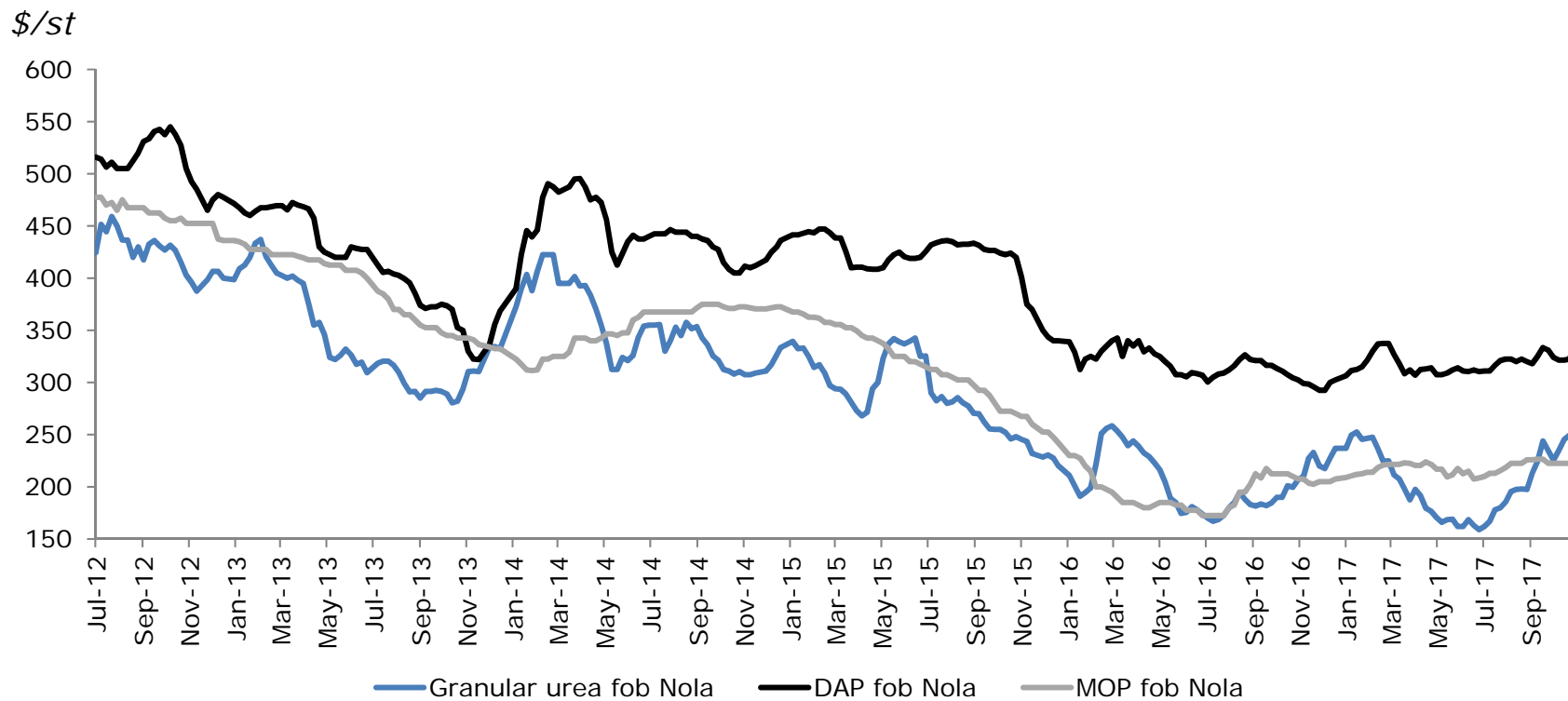
Opportunities: vary depending on market position



Limitations: US farmer profitability improving but still low



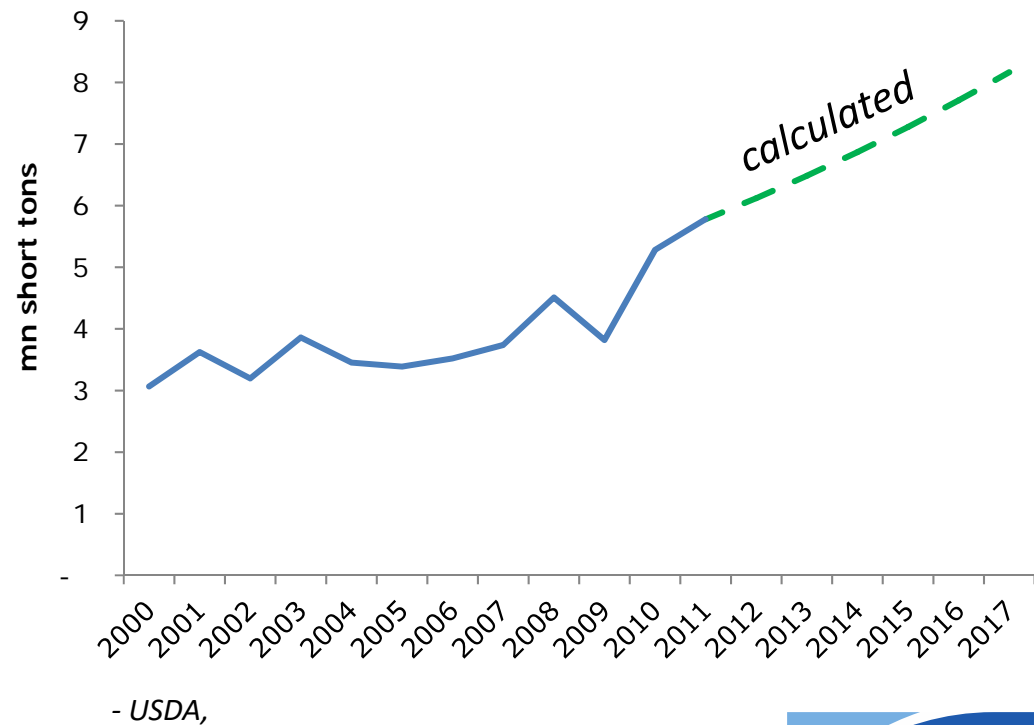
Micronutrients not immune to macro pricing



Micronutrient and secondary demand

- Key micronutrients

- Sulfur
- Magnesium
- Zinc
- Boron
- Manganese
- Copper
- Iron
- Calcium



So what do specialty blends look like?



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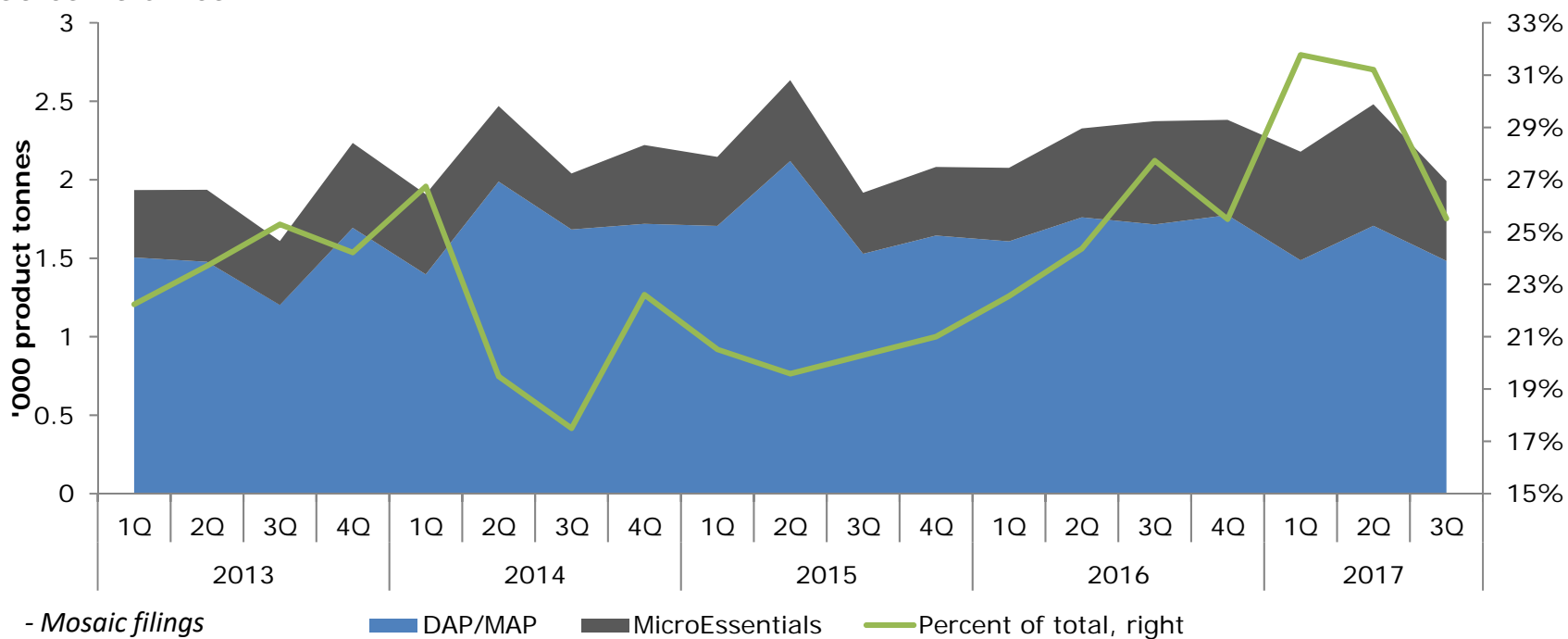


Majors go micro

- Mosaic introduces MicroEssentials, expands capacity by 1.2mn t/yr to 3.5mn t/yr — 30pc of total capacity
- Morocco's OCP offers range of enhanced phosphates targeting African market
 - Licenses Shell Thiogro technology to add sulfur to finished phosphates
- Compass Minerals buys Wolf Trax in 2014
- ICL converts UK potash mine to focus on polyhalite; Sirius Minerals begins construction of 10mn t/yr polyhalite mine in UK

Mosaic sees MicroEssentials growth

Sales volumes

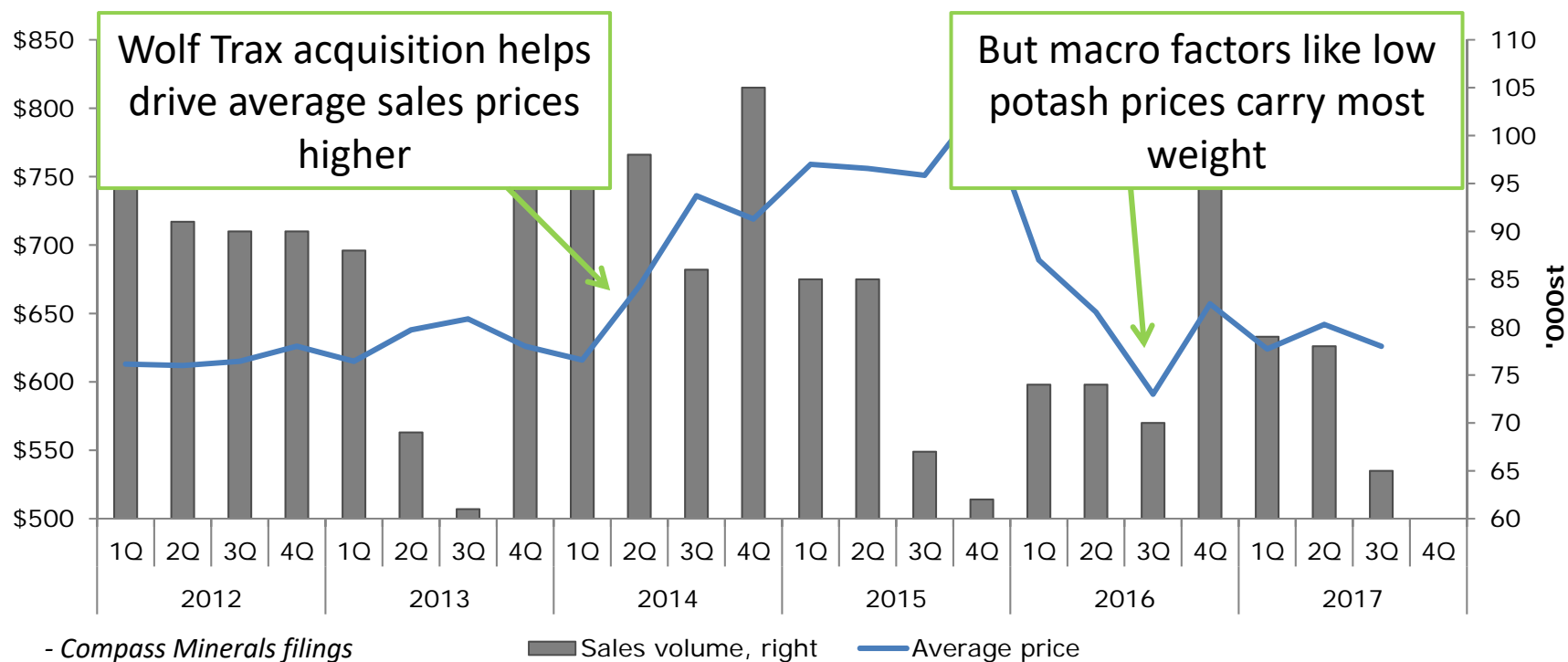


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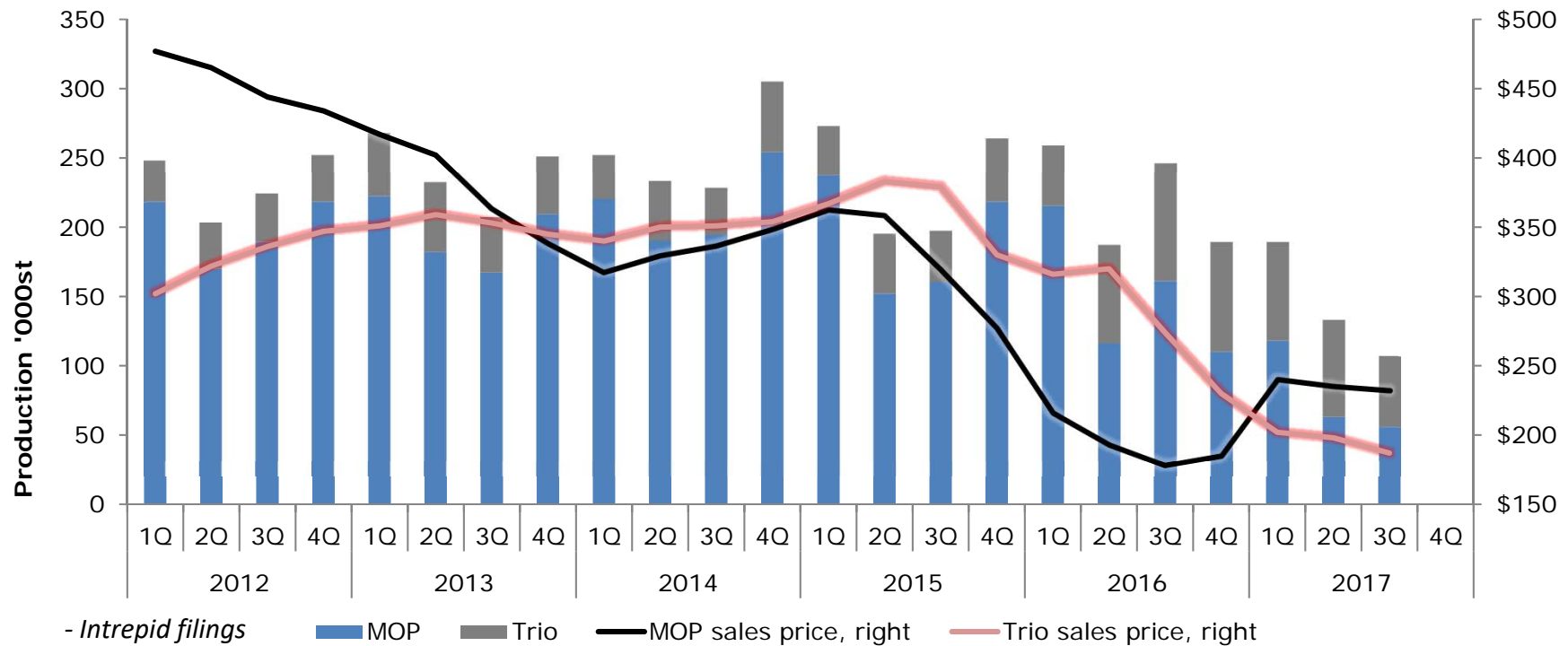
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Micronutrients impact: Compass Minerals

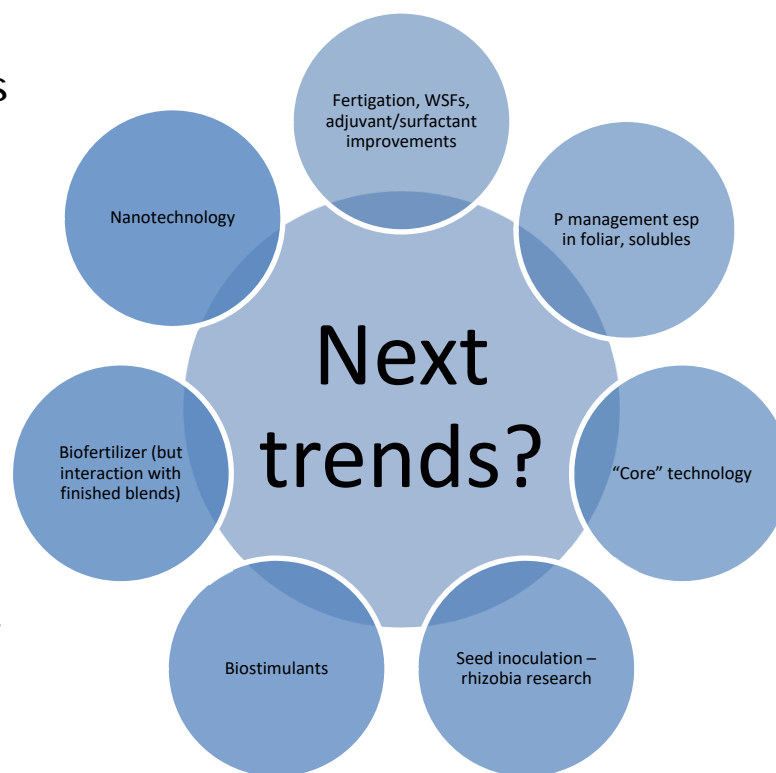


The risk of commodification: Intrepid Potash



Key takeaways

- Drivers supporting specialty products to remain constant for the foreseeable future
- Limitations tie to traditional agricultural risks and fundamentals
- Different companies have made different market entries, with mixed results
- More specialties in the mainstream now leave room for the next wave of niche products – but adoption takes time, proof of concept key



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