
 International Fertilizer Industry Association

IFA-FAI National Seminar
Sustainable Fertiliser
Management for Soil Health

 Kingenta
International
金正大国际

Improving Nitrogen Use Efficiency through Slow & Controlled Release Fertilizers

Jidong Zhai
New Delhi, India
March, 2015



Topics

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- 1 What's SCRF?
- 2 Advantages of SCRF
- 3 China SCRF Review & Outlook

Kingenta's Vision



To be:

The world's leading expert in plant nutrition and a provider of crop solutions

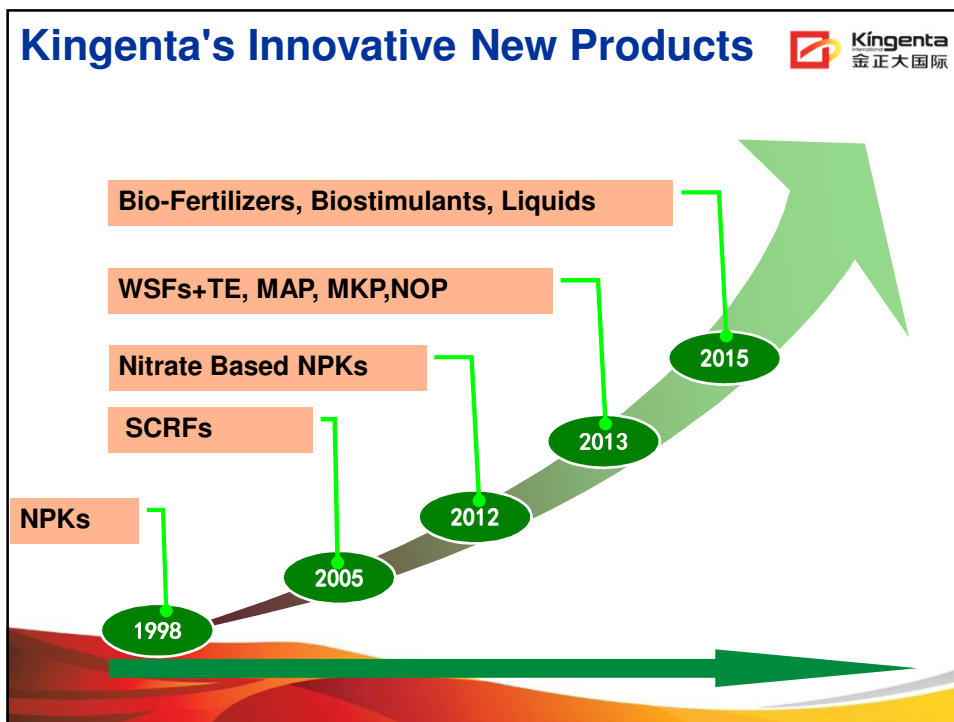


Key Data About Kingenta

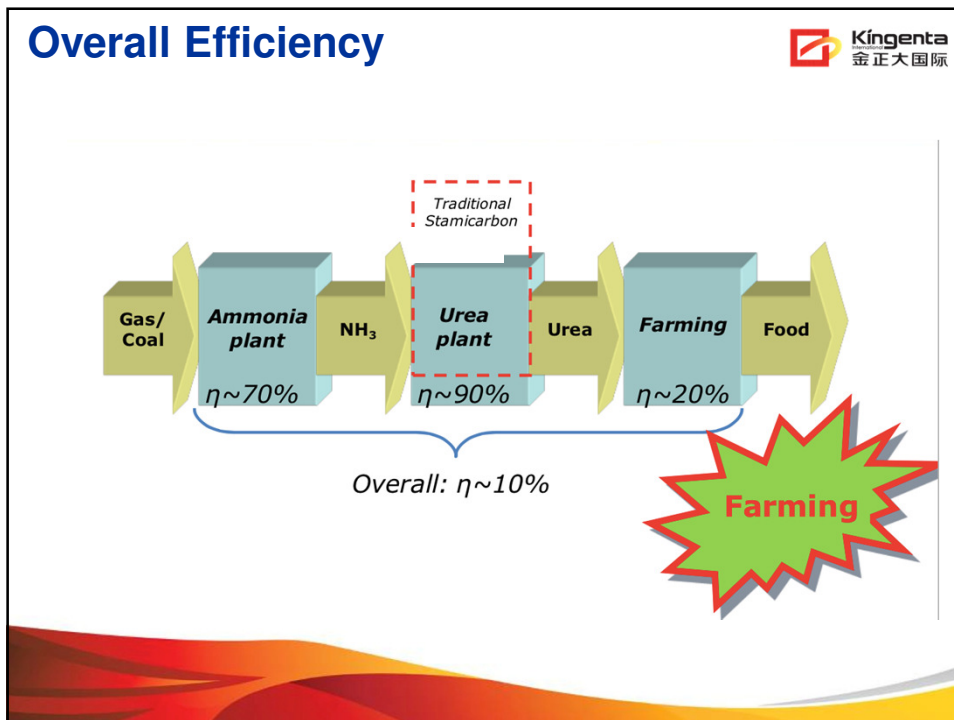
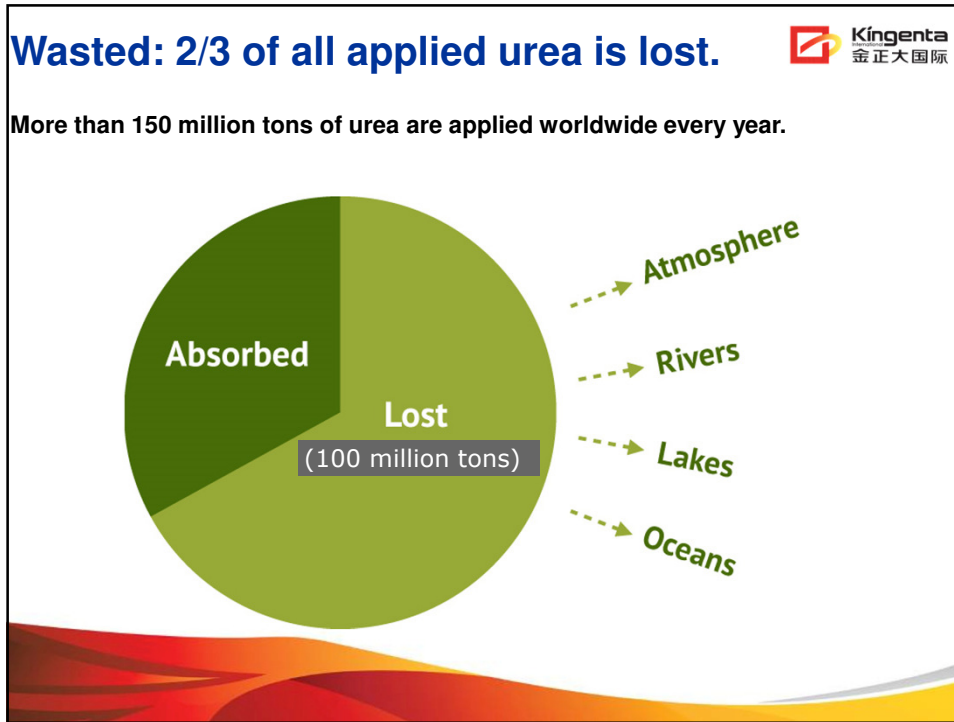


Data	Represents
US\$2.2 B	Revenue in 2014
US\$140 M	Net profit in 2014
7 Mmt	Total Annual Fertilizer Production Capacity SCRF, Nitrate-based compound, MKP, NOP,WSF, Conventional NPKs,Bio-fertilizer,MAP,Chelated-TE etc..
10000 -1500 -200	Total Employees Employees working for marketing, sales, Service Researchers working in R&D center
10	Production Subsidiaries located in 8 provinces in China
183	Patents
1998	Company established
2010-(002470)	Going public, listed in Shenzhen Stock Exchange (002470)





- ### Topics
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The world needs new smart fertilizers!

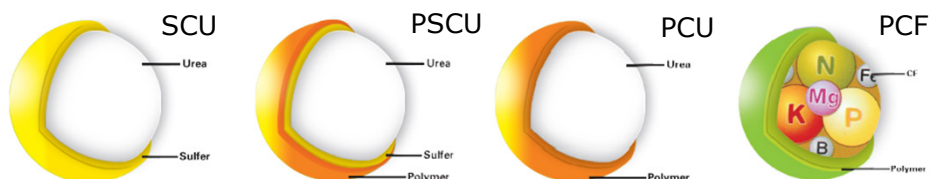


- Organic or synthetic source of plant nutrients
- Help to achieve efficient use of nutrients by plants.
- Release nutrients only at a time and an amount needed to increase crop production and decrease waste and pollutants.
- Include both slow-release and controlled release fertilizers(SCRF)







Main Product Types:



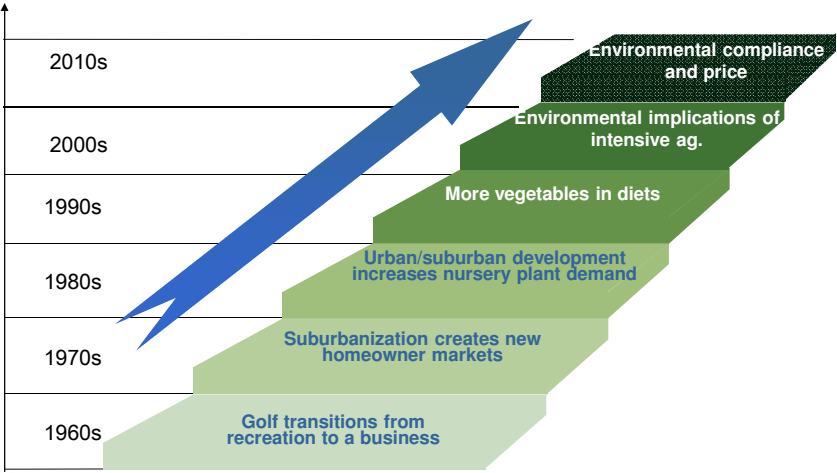
Slow Release Fertilizer(SRF)	Controlled Release Fertilizer(CRF)
Urea-Formaldehyde Formulations (UF)	Sulfer Coated Urea (SCU)
Isobutyledene-Diurea Formulations (IBDU)	Polymer and Sulfer Coated Urea (PSCU)
	Polymer Coated Urea (PCU)
	Polymer Coated Compound Fertilizer (PCF)



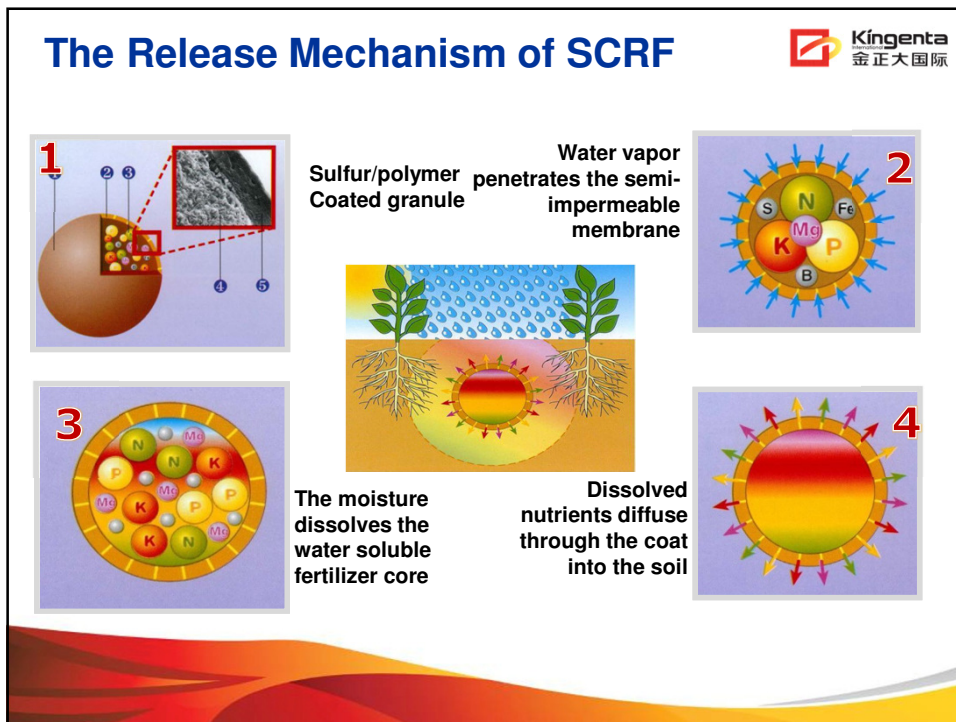
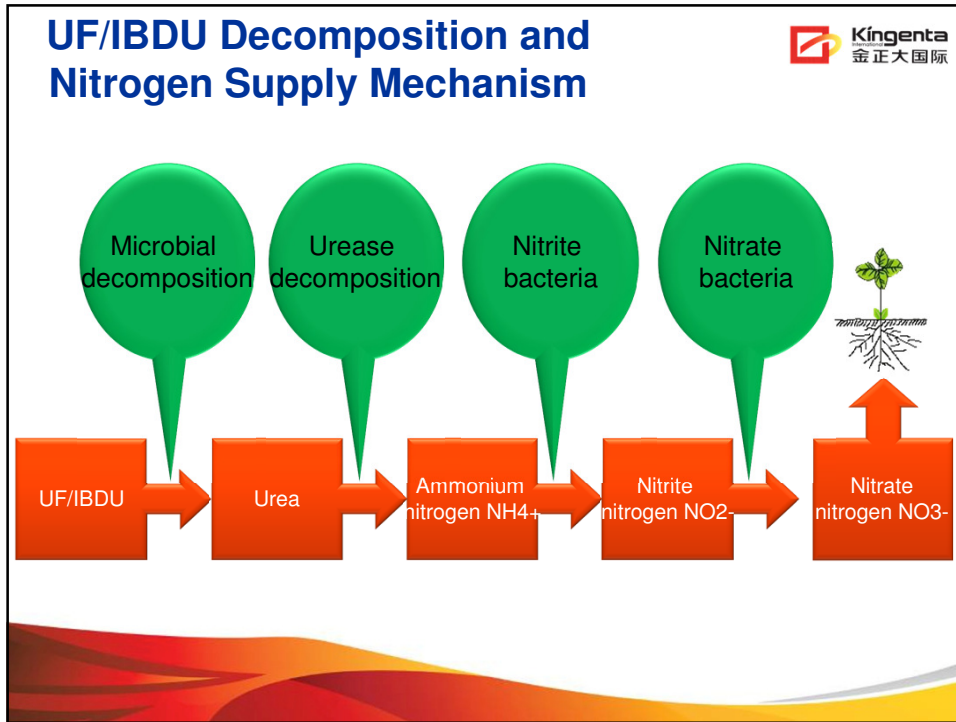
History of SRF/CRF materials Kingenta 金正大国际

1940s	Urea formaldehyde (UF)	
1960s	Sulfur-coated urea (SCU)	
1970s	Isobutylidene diurea (IBDU) Methylene urea (MU)	
1980s	Plastic-coated urea (PCU)	
1990s	Plastic-coated, S-coated urea (PCSCU) Resin-coated N-P-K	
2000s	Refinement of earlier technologies	

Key Driving Factors for SCRF Development Kingenta 金正大国际



2010s	Environmental compliance and price
2000s	Environmental implications of intensive ag.
1990s	More vegetables in diets
1980s	Urban/suburban development increases nursery plant demand
1970s	Suburbanization creates new homeowner markets
1960s	Golf transitions from recreation to a business



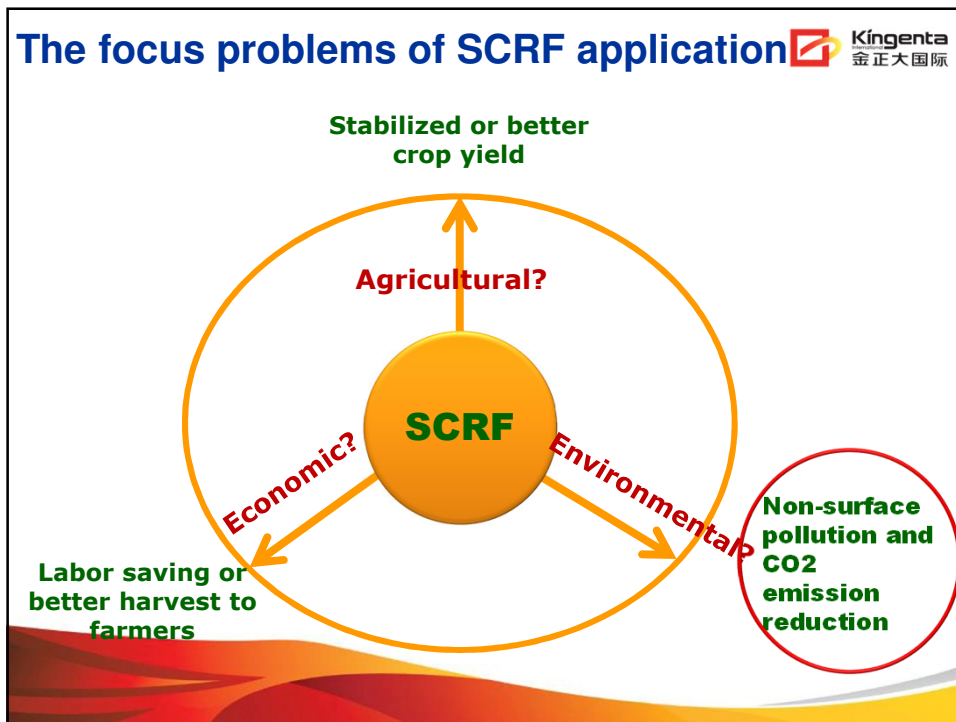
Topics

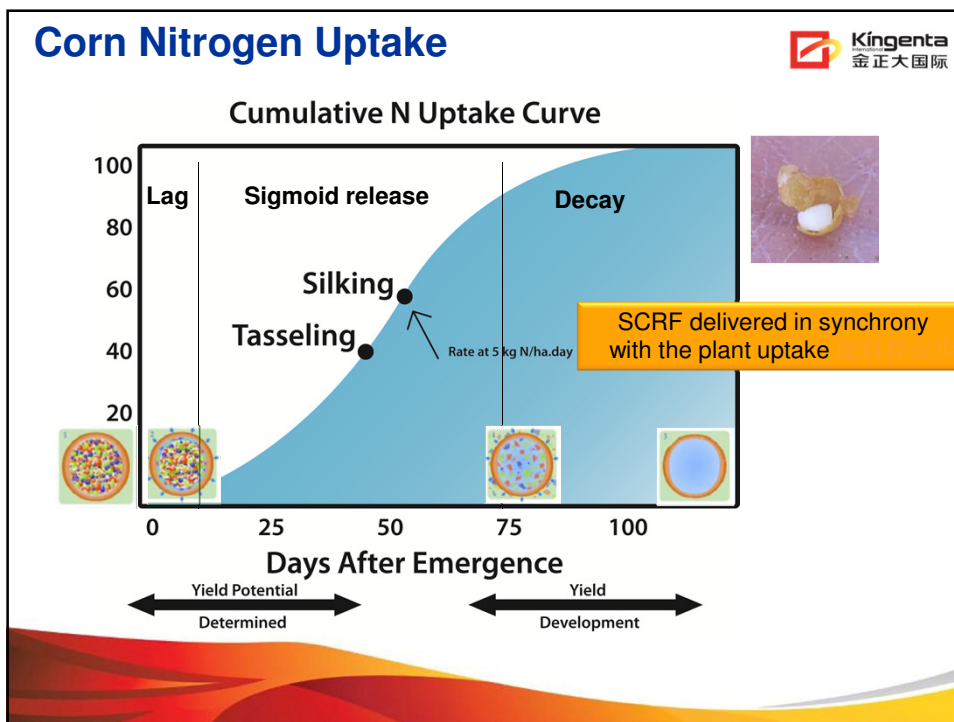
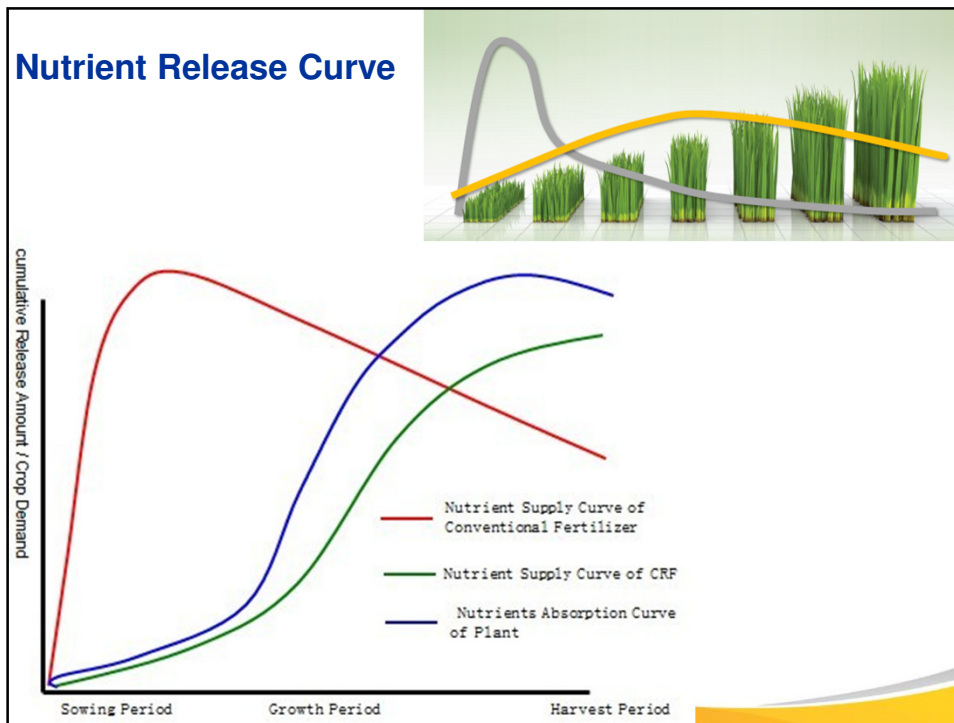


1 What's SCRF?

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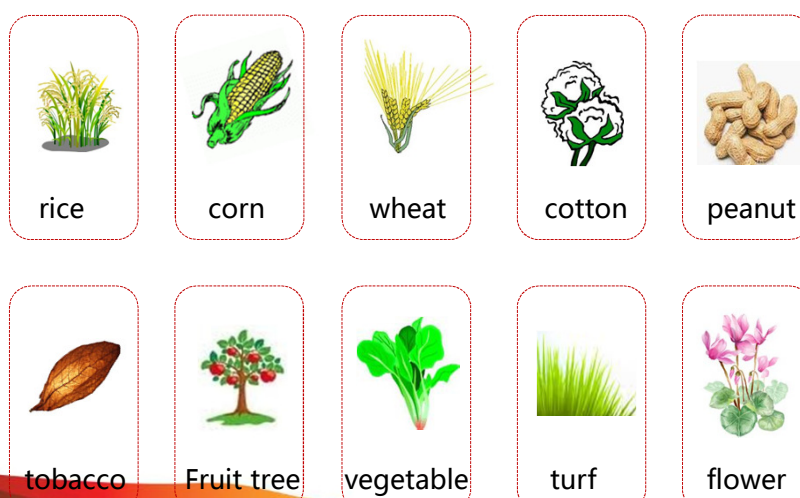
N losses comparison of PCU with conventional urea



Treatment	Nitrogen Applied	N losses in runoff	The leaching loss of N
	kgN/ha	(N%)	(N%)
PCU	240	9.22	8.55
Urea	240	12.6	10.2
PCU-Urea	--	-3.38 (-27%)	-1.65 (-16%)

Compared PCU with common urea, N-runoff is 27% less, N-leaching is 16% less.

CRF field trial and demonstration for different crops in China



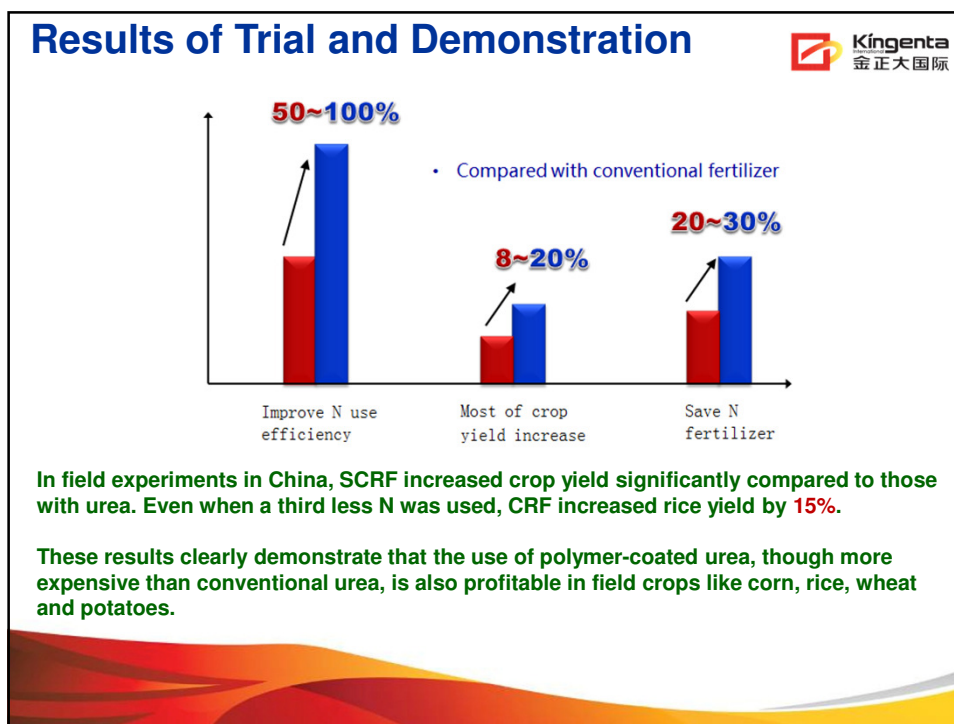
Peanut Yield Increase by 33.3%



Potato Yield Increase by 15.85%



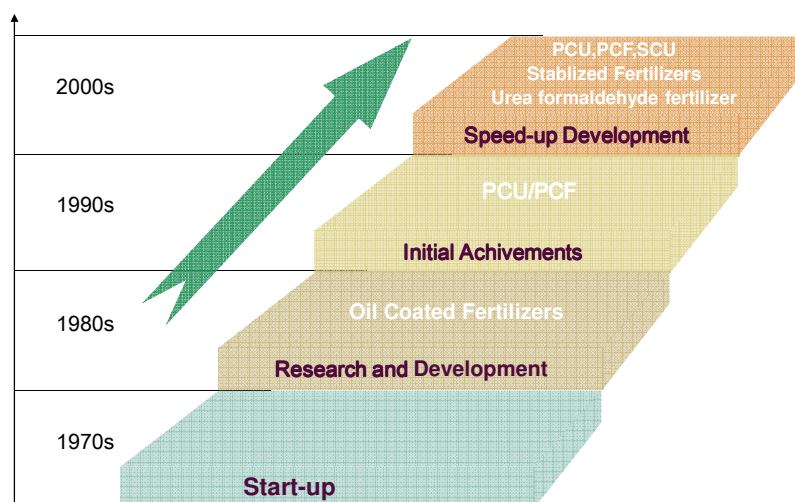


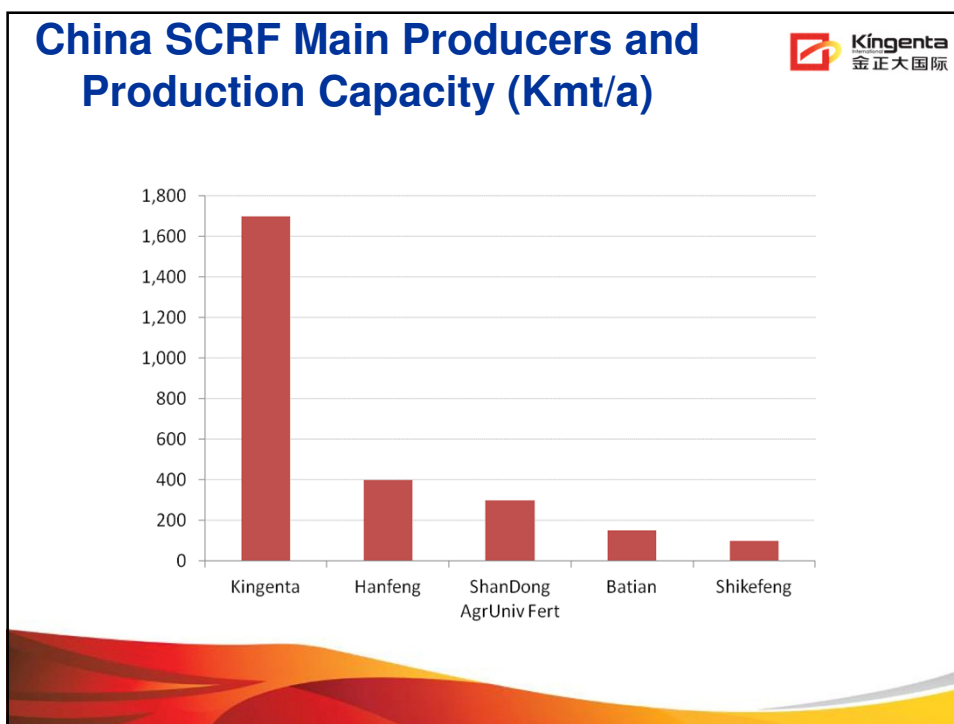
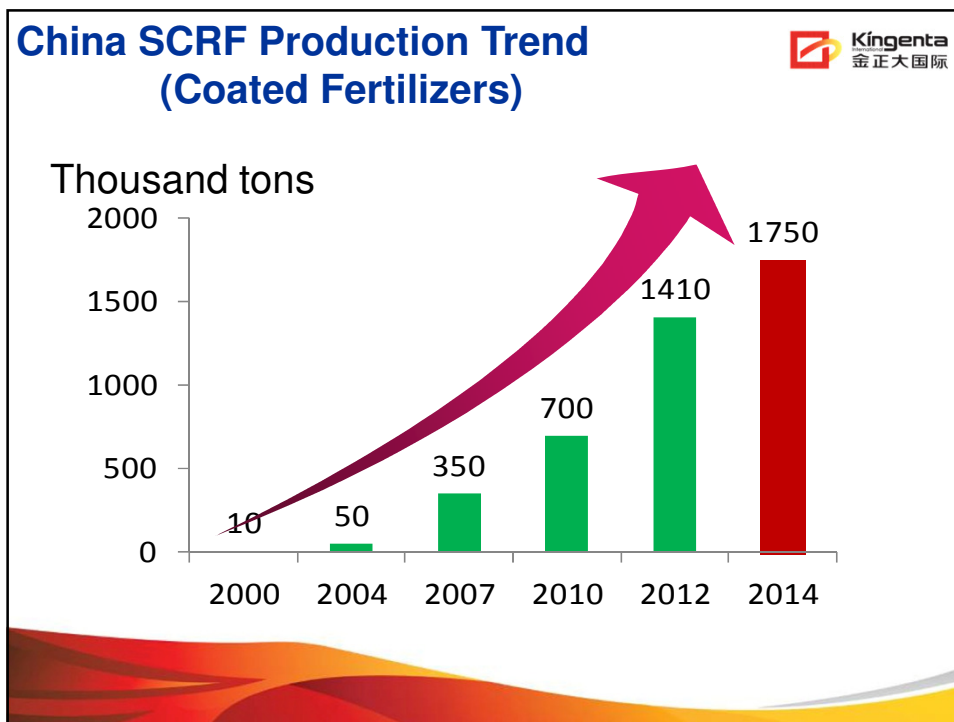


Numbers Related to Fertilizers in China Kingenta 金正大国际

Numbers	Represents
9%	of the world arable land
22%	of the world population
40%	Crop yields are contributed by fertilizers
1/3	of the world fertilizer production
30%-35%	Nitrogen using efficiency
15%-20%	Phosphate using efficiency
35%-40%	Potash using efficiency
21Mmt	Nitrogen nutrients consumption every year
45%	Applied nitrogen volatilized, leaching or running off every year
9.45 Mmt	Nitrogen nutrients (equal to 20.5million tons urea) lost every year

SCRF Development in China Kingenta 金正大国际





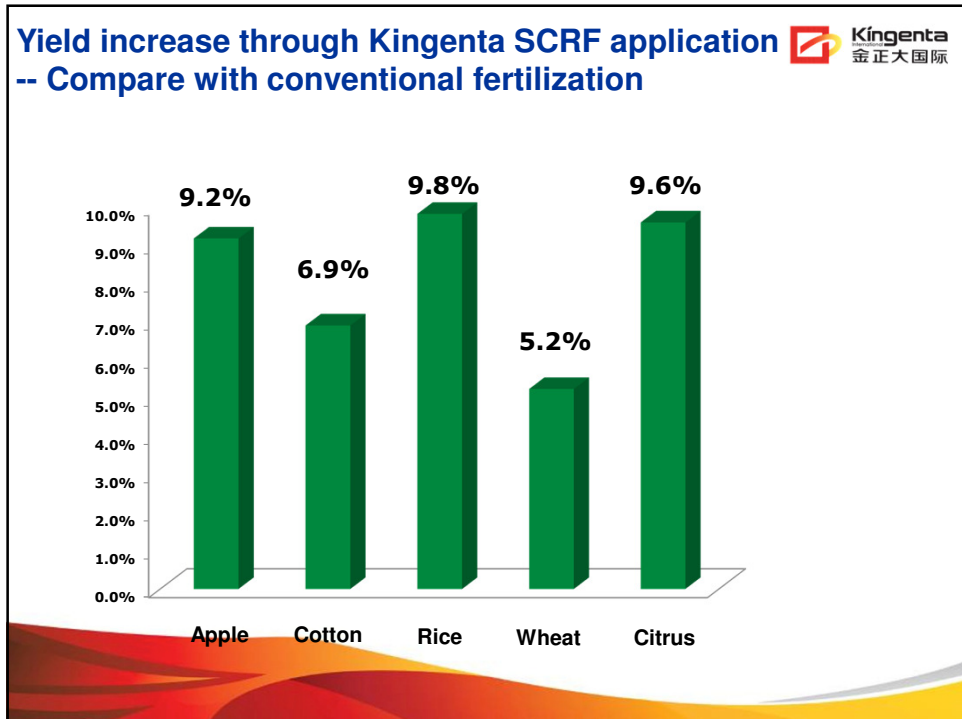
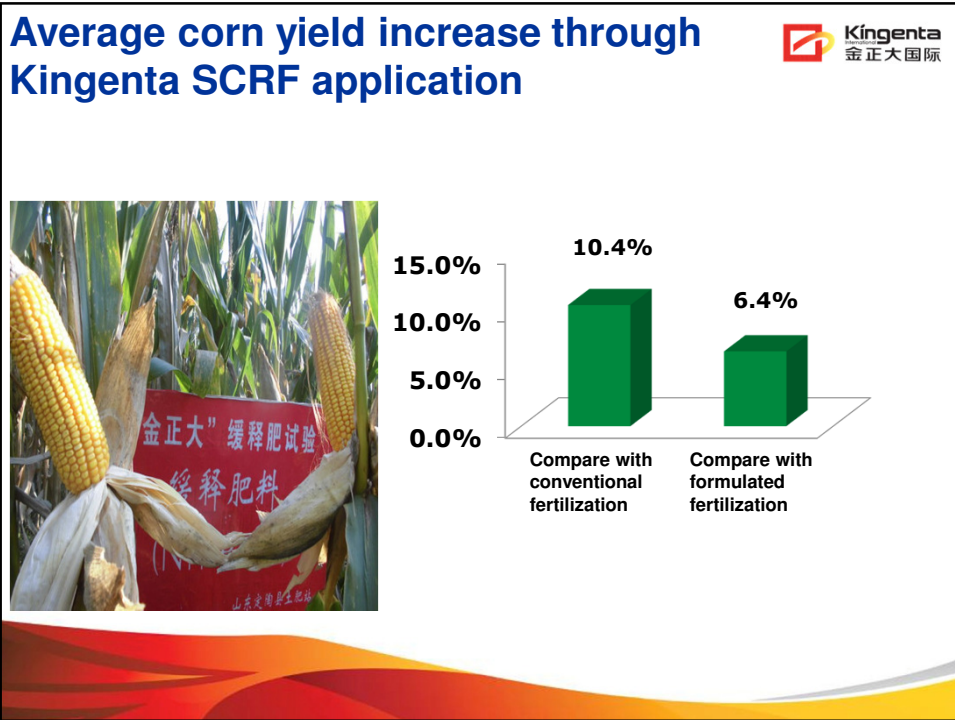
Kingenta has conducted SCRF application experiment demonstration and evaluation broadly



- ◆ Built than 2000 demonstration fields in China and 13 demonstration fields abroad, covered 12000MU.
- ◆ Cooperate with 6 American Universities and 3 experimental station of USDA.

In 2014, Kingenta cooperated with National Agro-Tech Extension and Service Center(NATESC), built 92 demonstration fields in 25 provinces in China.





Seed-Fertilizer Sowing Machine



Kingenta has been bought more than 30,000 seeds & fertilizer sowing machines for farmers and has trained more than 50,000 machine operators.

Organizing SCRF fertilization educational activities and training class more than 3600 times, trained farmers more than 320000 people.

Freely distributing fertilization manual more than 2 million volumes.



Agrochemical Service to Farmers



S-F sowing machine for maize



S-F sowing machine for wheat



S-F sowing machine for rice



Kingenta's Environmental Assessment of SCRF



In Summary



- 1. China has more than 30 SCRF science & technology Research institutions and more than 70 SCRF Industrial development and application units.**
- 2. In 2014, SCRF production was over 2 million tons.**
- 3. The yearly average increasing rate of SCRF production capacity is about 30%, while the yearly average increasing rate of SCRF consumption is about 20%.**
- 4. But the ratio of SCRF in the total fertilizer consumption is still very low, about 1%.**
- 5. With the strong support of Chinese government, the SCRF market in China is going to be booming in coming years.**

Future Fertilizer Innovations



- ➔ Improvement of Nutrient Uptake Efficiency
- ➔ Precise Application to Reduce Losses, Air & Water Quality Concerns
- ➔ Nutrient Release Synchronized with Plant needs
- ➔ Easy & Convenient Application, Labor and Time Saving
- ➔ Mechanically Applied, Fertigation & Irrigation
- ➔ Economical & Environmentally Sustainable
- ➔ Wide Application, Agri-/Horti-culture, from farming to landscaping, from field to home.



**Thank You For
Your Attention !**

Welcome to Cooperate with Kingenta

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