II Global supply & demand of glyphosate

II-1 Supply situation

- Glyphosate technical

The glyphosate industry is undergoing changes in structure and operation in a way and at a speed that has not been witnessed previously. The drivers for such change have arisen from two main common themes namely regionalisation and brisk demand.

Over XX glyphosate technical producers are distributed in China, with only X X outside China. Table II-1.1 shows the 2008 world rankings for glyphosate producers based on capacity.

Table II-1.1 Key players of glyphosate technical in the world, '000 tonnes

Glyphosate producers	PMIDA			Glyphosate technical	
	Production 2008	Source		Capacity 2009	Production 2008
		Captive	Outsourcing		
Chinese (about 50 producers)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Monsanto (US, [redacted])	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

- Glyphosate formulation

Monsanto is the leading glyphosate formulation producer in the world, taking up [redacted] of the market share.

Table II-1.2 Key players of glyphosate formulation in the world (convert to 95% technical, '000 tonnes)

Key suppliers	Brand	Sales ($billion)	Sales volume '08	Share
Monsanto	Roundup	[redacted]	[redacted]	[redacted]
Nufarm	Credit	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total	-	[redacted]	[redacted]	[redacted]

II-2 Demand situation

II-2.2 Distribution

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CCM International divides the investigation area in this report into North America, South America, Europe, Asia Pacific and Africa to research on the distribution of glyphosate. As there is no glyphosate consumed in Antarctica, Antarctica is not considered here.

The most important glyphosate consumers are North America and South America, with the two totally consuming [redacted] tonnes glyphosate, accounting for [redacted] of world's total in 2008.

Table II-2.2.2 Major used field and characters of glyphosate consumption in different area

Area	Major fields	Characteristics
South America	[redacted]	[redacted]
Europe	[redacted]	[redacted]
Asia Pacific	[redacted]	[redacted]
Africa	[redacted]	[redacted]

……

III-4 North America

III-4.1 USA

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There are dozens of glyphosate brands from more than [redacted] companies in the United States, such as Roundup, Touchdown, [redacted] etc.

Table III-4.1.1.1 Basic information of key glyphosate producers in USA

Key supplier	Technical capacity (t/a)	Brand	Market share
Monsanto	[redacted]	[redacted]	[redacted]
Mey	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

……

III-4.1.2 Glyphosate consumption

Glyphosate use in the United States is increasing rapidly with the introduction of glyphosate-resistant (Roundup-Ready) crops and the development of glyphosate-resistant weeds. The glyphosate consumption in USA is rising stably year on year, and the CAGR reached [redacted] from 2004~2008. And the growth rate still maintained at [redacted] in 2008, which indicated a flourishing glyphosate demand.

Table III-4.1.2.2 Glyphosate consumption in major crops in USA, 2004-2008 (converted to 95% technical, tonne)

Year	Corn	Soybean	Wheat	Cotton	Sorghum	Orchard	Rapeseed	Beet	Others	Total
2004	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2005	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2006	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2007	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2008	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Table III-4.1.2.3 Glyphosate consumption in different growing periods of major crops, 2008 (converted to 95% technical, tonne)

Crops	Pre-seeding	Pre-emergence	Post-emergence	Total
Corn	[redacted]	[redacted]	[redacted]	[redacted]
Soybean	[redacted]	[redacted]	[redacted]	[redacted]
Wheat	[redacted]	[redacted]	[redacted]	[redacted]
Cotton	[redacted]	[redacted]	[redacted]	[redacted]
Sorghum	[redacted]	[redacted]	[redacted]	[redacted]
Rapeseed	[redacted]	[redacted]	[redacted]	[redacted]
Beet	[redacted]	[redacted]	[redacted]	[redacted]

Table III-4.1.2.4 Glyphosate consumption in major orchard, 2008

Orchard	Area applied, percent	Applications, number	Rate per application, kg per ha	Rate per crop year, kg per ha	Total applied (converted to 95% technical, tonne)
Apple	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Pear	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Orange	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Grape	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

IV Flow of glyphosate in global market and future trend

IV-1 Trade situation in major countries

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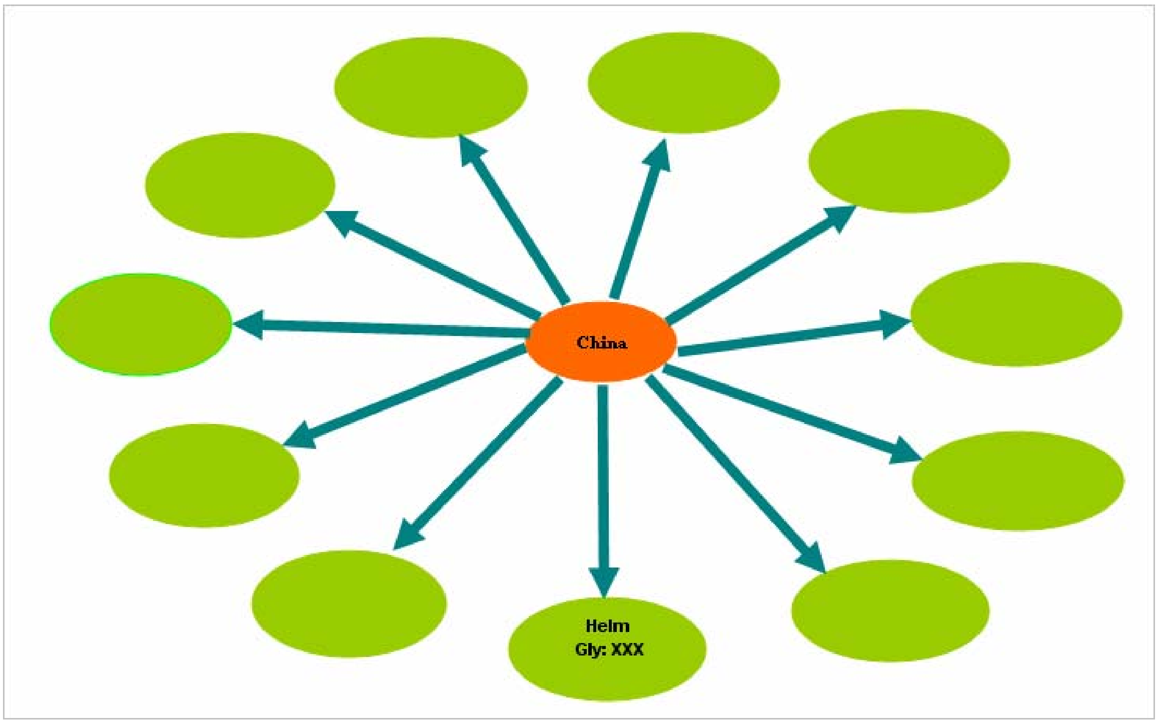
Table IV -1.2.1 Destinations of U.S. glyphosate and PMIDA, 2008 (tonne)

Destination	PMIDA	Gly. Tech.	41% IPA	62% IPA	Other formulations
Belgium	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Argentina	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

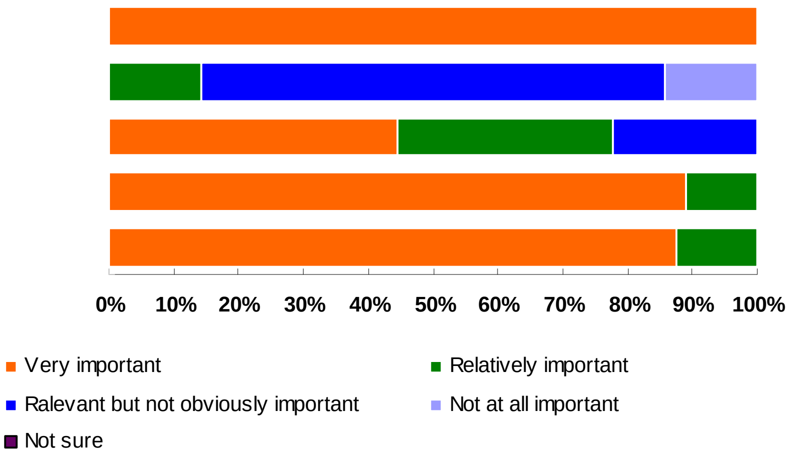
……

Figure IV-1.2 Major overseas importers of Chinese glyphosate technical and PMIDA, 2008



V Price of glyphosate in international market and its future trend

Figure V-2 Influencing factors on glyphosate technical price



VI-2 Future prospect of global glyphosate industry

VI-1.1 Driven forces

Figure VI-1.1.1 Growth rates of glyphosate consumption and related drivers, 2004-2008

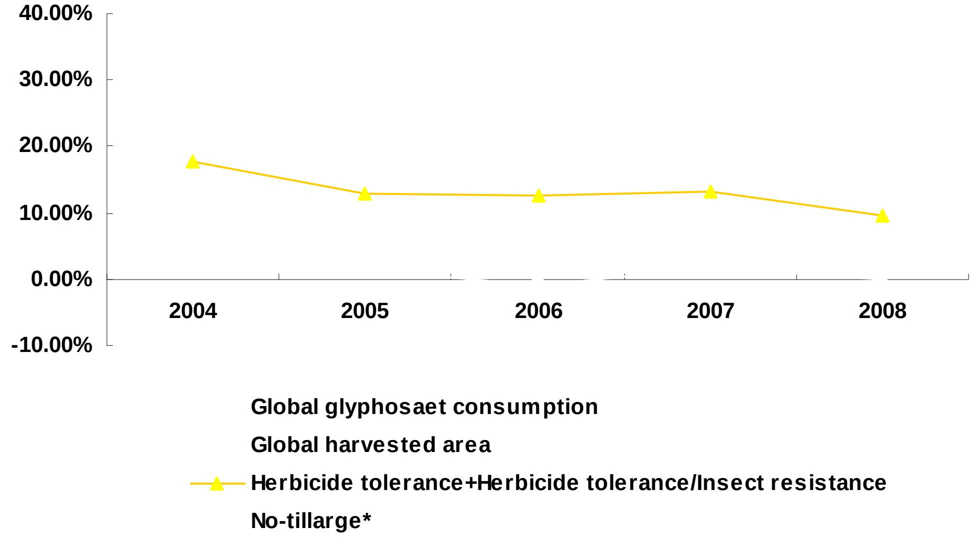


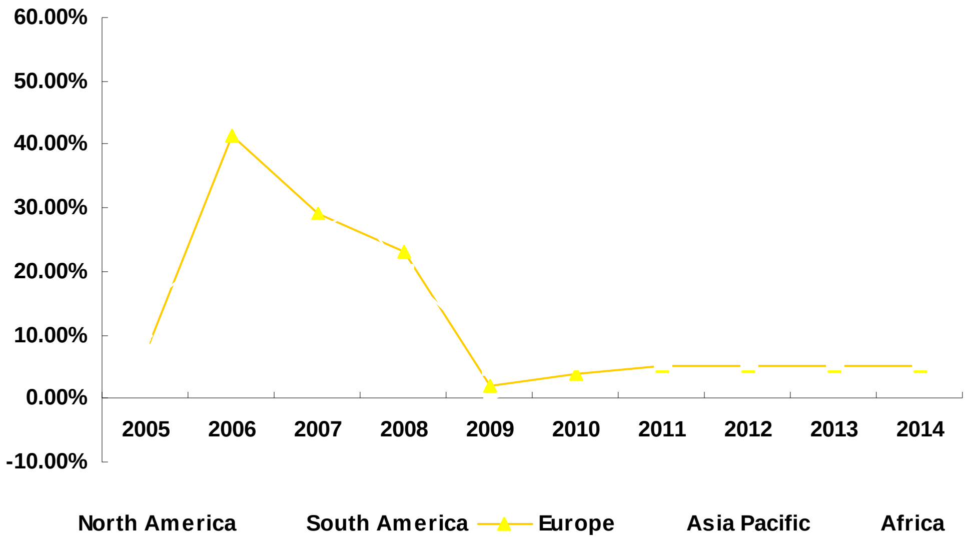
Table VI-1.1.1 No-till situation in different regions, 2008

Area	Harvested area, million hectares	No-till area, million hectares	Share in harvested area	Share of no-till area
South America	[redacted]	49.00	[redacted]	[redacted]
North America	[redacted]	[redacted]	[redacted]	[redacted]
Asia Pacific	[redacted]	[redacted]	[redacted]	[redacted]
Europe	[redacted]	[redacted]	[redacted]	[redacted]
Africa	[redacted]	[redacted]	[redacted]	[redacted]
Global	[redacted]	[redacted]	[redacted]	[redacted]

Table VI-1.1.2 Comparison of glyphosate, paraquat and glufosinate

Title	Glyphosate	Paraquat	Glufosinate
Price consumption per acre	[redacted]	[redacted]	[redacted]
Capacity	[redacted]	[redacted]	[redacted]
Technology	[redacted]	[redacted]	[redacted]
Resistant crops	[redacted]	[redacted]	[redacted]
Effect	[redacted]	[redacted]	[redacted]

Figure VI-2.3 Forecast of growth rate of glyphosate demand in different area, 2009-2014



VII Conclusion and Recommendation

☞ China will keep the position as key glyphosate technical supplier

China has taken up [redacted]% of glyphosate technical market share in the world, with current capacity of over [redacted]t/a. It is unlikely for overseas producers to newly engage in glyphosate technical production or expand capacity. China will keep the position as key glyphosate technical supplier in the world.

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