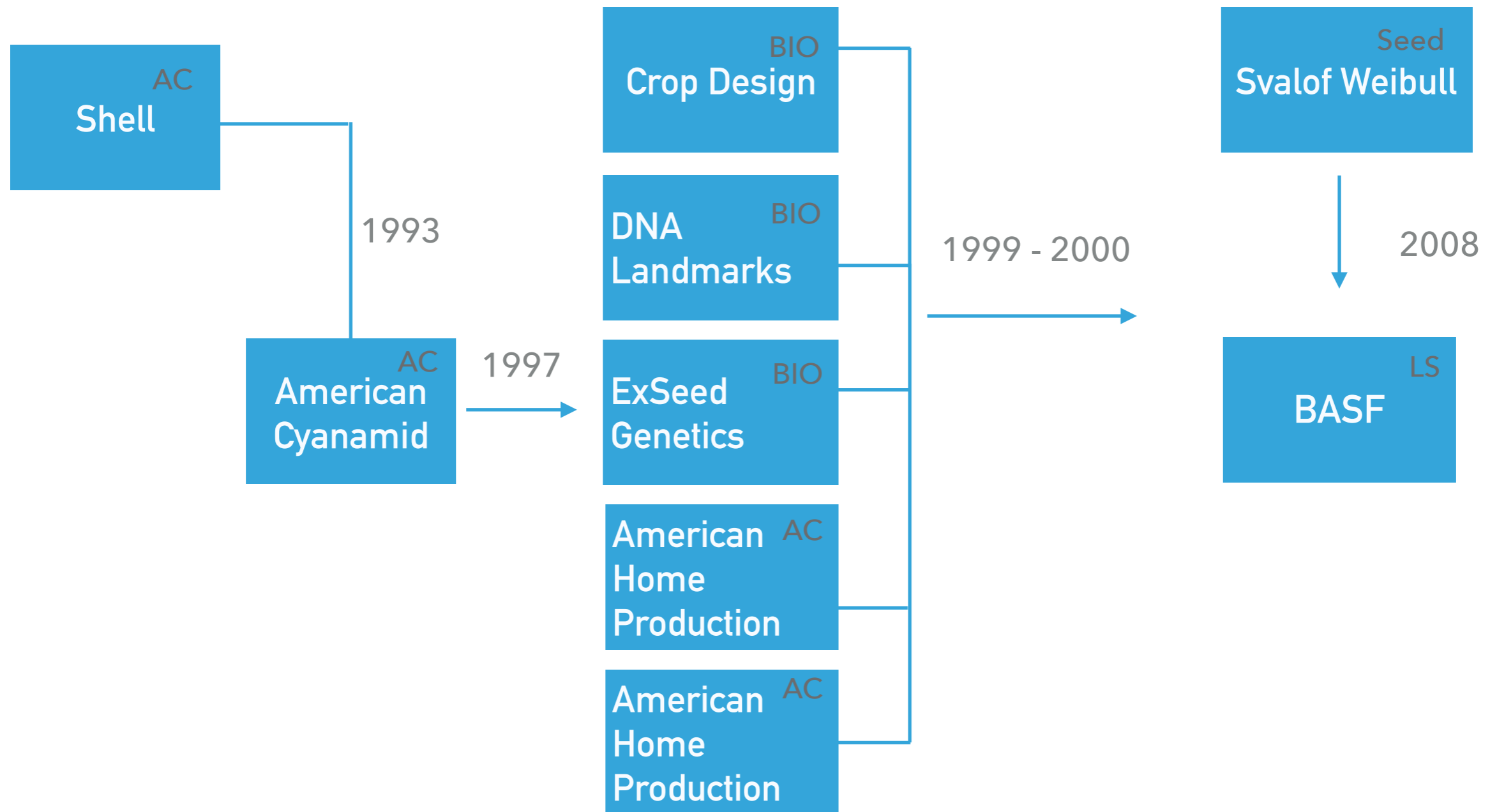


GLOBAL SEED CONSOLIDATION

THE COMMODITY INNOVATION LAB



BASF



BIO = Agriculture Biotechnology

AC = Agriculture Chemicals

LS = Ag Chemicals + Biotech Life Sciences

Source: The Commodity Innovation Lab, Bloomberg LP and Howard (2009)

BAYER CROP

Seeds
 Rio Colorado Seeds
 Nunhems
 Sunseeds
 PVG
 Sementes Riberal
 Sementes Fartura
 Leen de Mos Granja
 California Planting Cotton
 Reliance Genetics

Seed
 Stoneville

AC
 Gustafson

BIO
 Plant Genetics

LS
 Hoechst

AC
 Schering

LS
 AgrEvo

AC
 Rhone-Poulenc

LS
 Aventis

LS
 Bayer

LS
 Bayer Crop Science

Seed
 SeedEx
 Paragon Seed
 Eurosort
 Soy Tech Seeds
 Goiania Investimentos
 Raps Gbr Oilseed
 Watermelon & Melon Seeds
 Bioagro
 Granar (Seed)

1995 - 96

1997 - 1999

1999

2002

2007

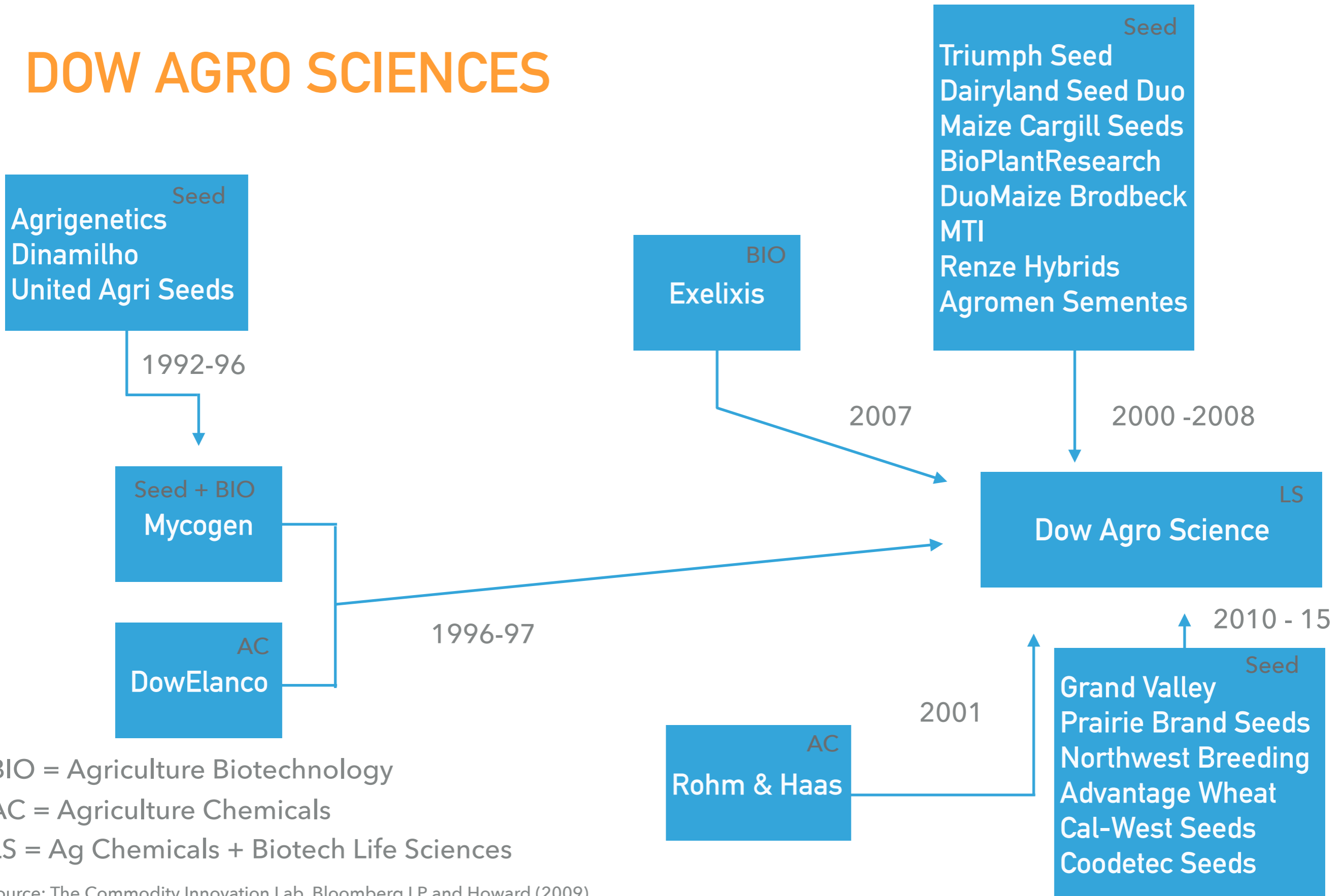
2004

2007 - 14

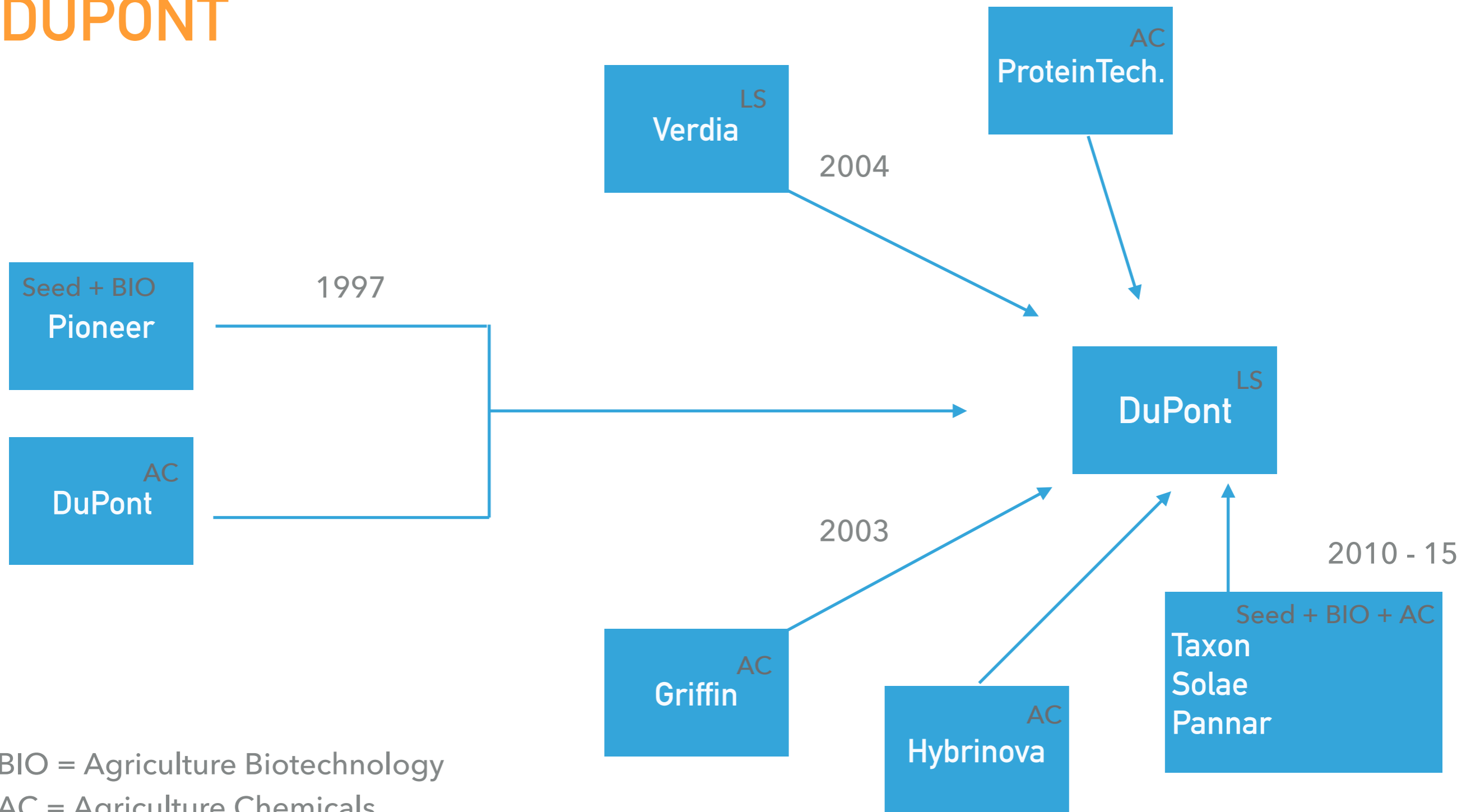
BIO = Agriculture Biotechnology
 AC = Agriculture Chemicals
 LS = Ag Chemicals + Biotech Life Sciences

Source: The Commodity Innovation Lab, Bloomberg LP and Howard (2009)

DOW AGRO SCIENCES



DUPONT

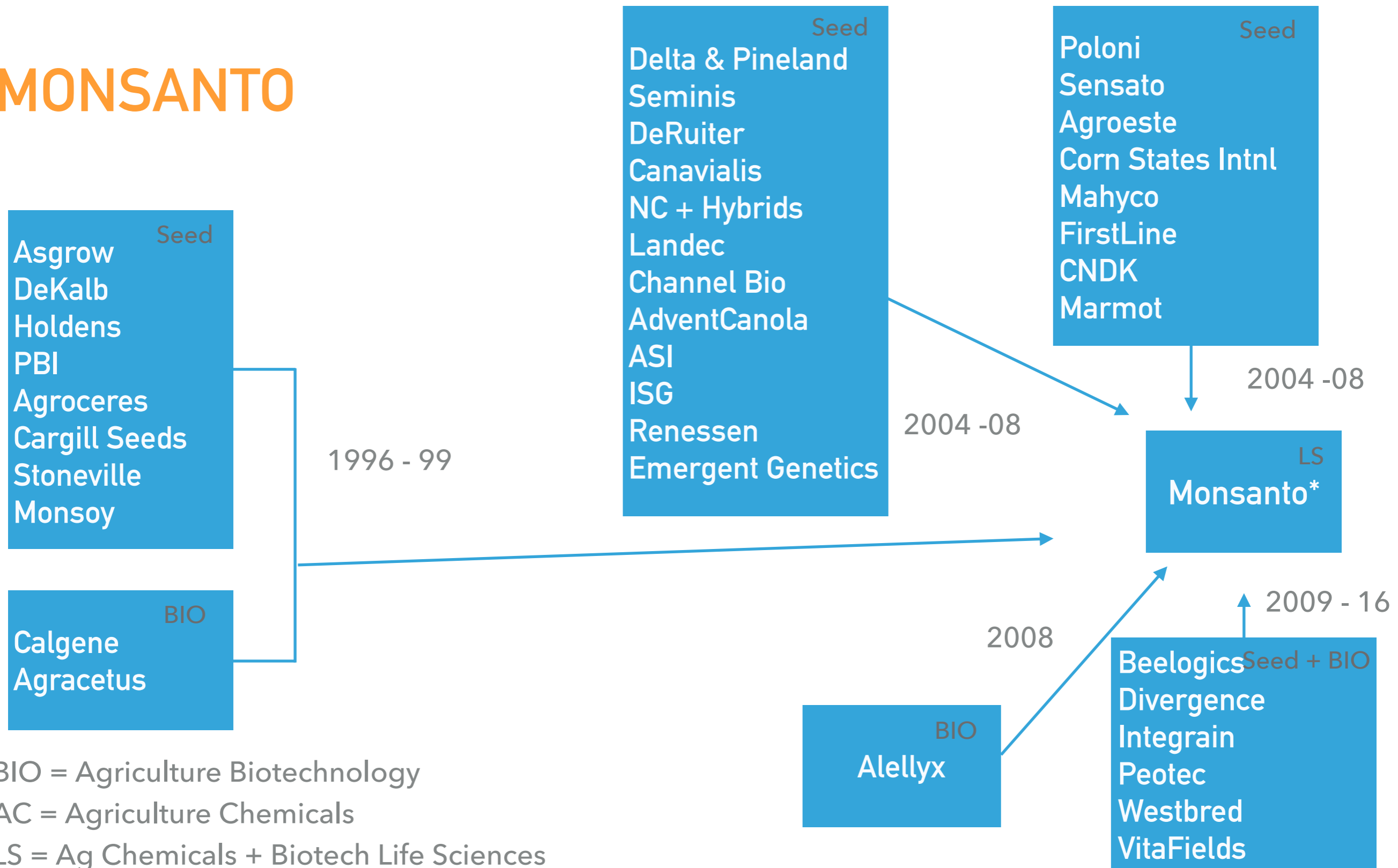


BIO = Agriculture Biotechnology

AC = Agriculture Chemicals

LS = Ag Chemicals + Biotech Life Sciences

MONSANTO



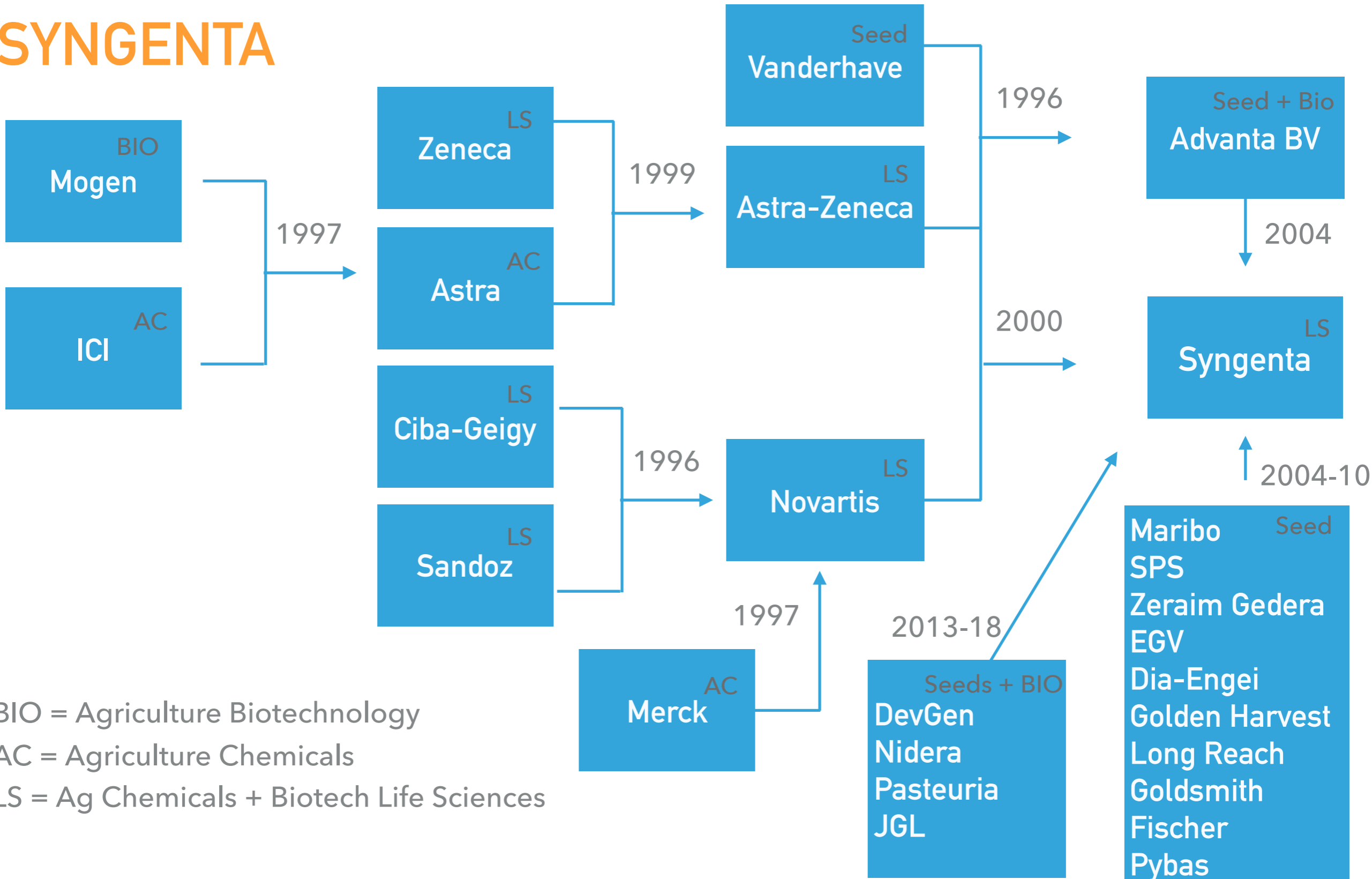
BIO = Agriculture Biotechnology

AC = Agriculture Chemicals

LS = Ag Chemicals + Biotech Life Sciences

* The original Monsanto Co. was acquired by Pharmacia in 2000. In 2002 it was spun off.

SYNGENTA



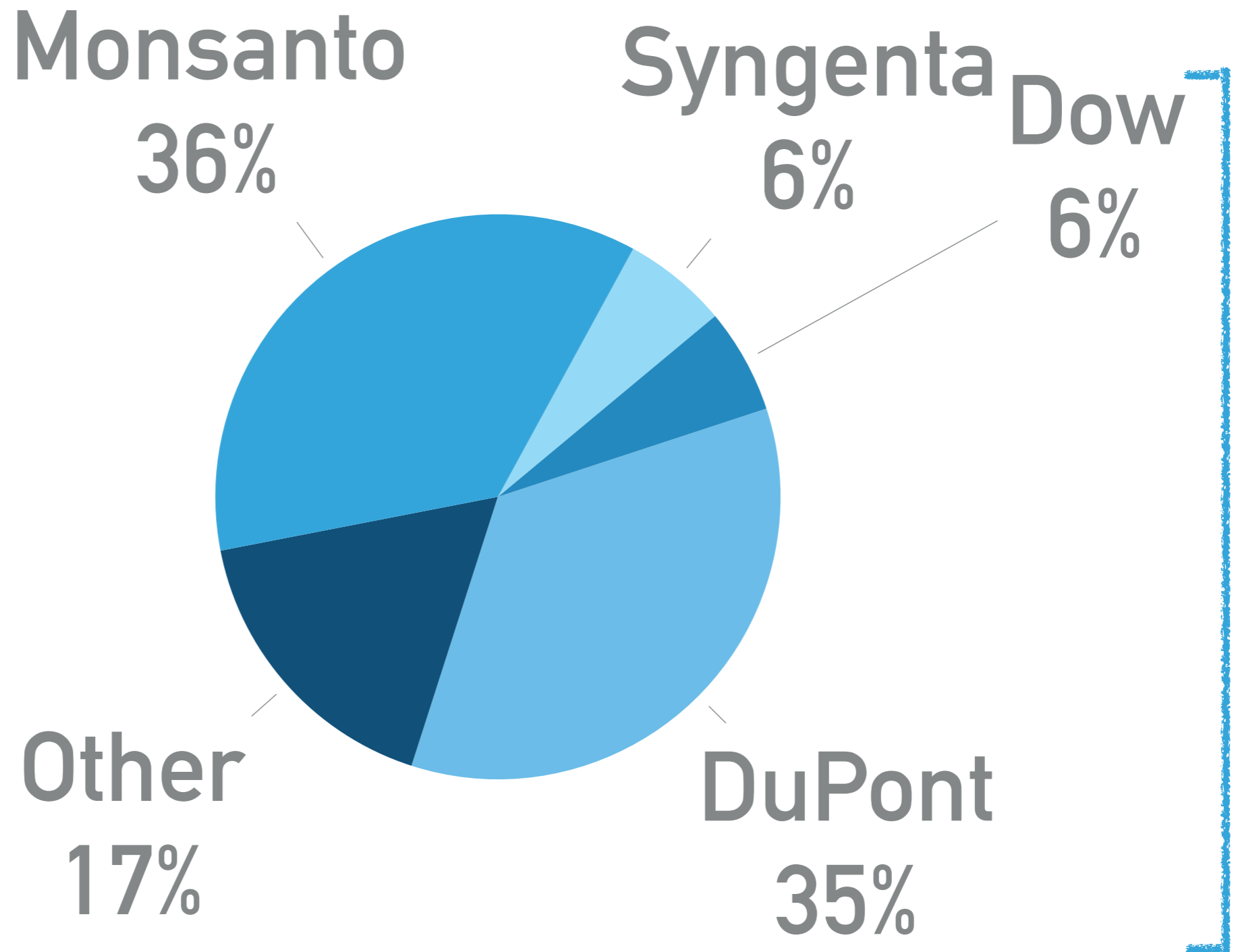
Source: The Commodity Innovation Lab, Bloomberg LP and Howard (2009)

LATEST SECTOR CONSOLIDATION

Acquirer	Target	New Name	Deal Value (in USD Billions)
Bayer	Monsanto		65.69
Dow	DuPont	Corteva	65.3
ChemChina	Syngenta		46.31

Source: The Commodity Innovation Lab and Bloomberg LP

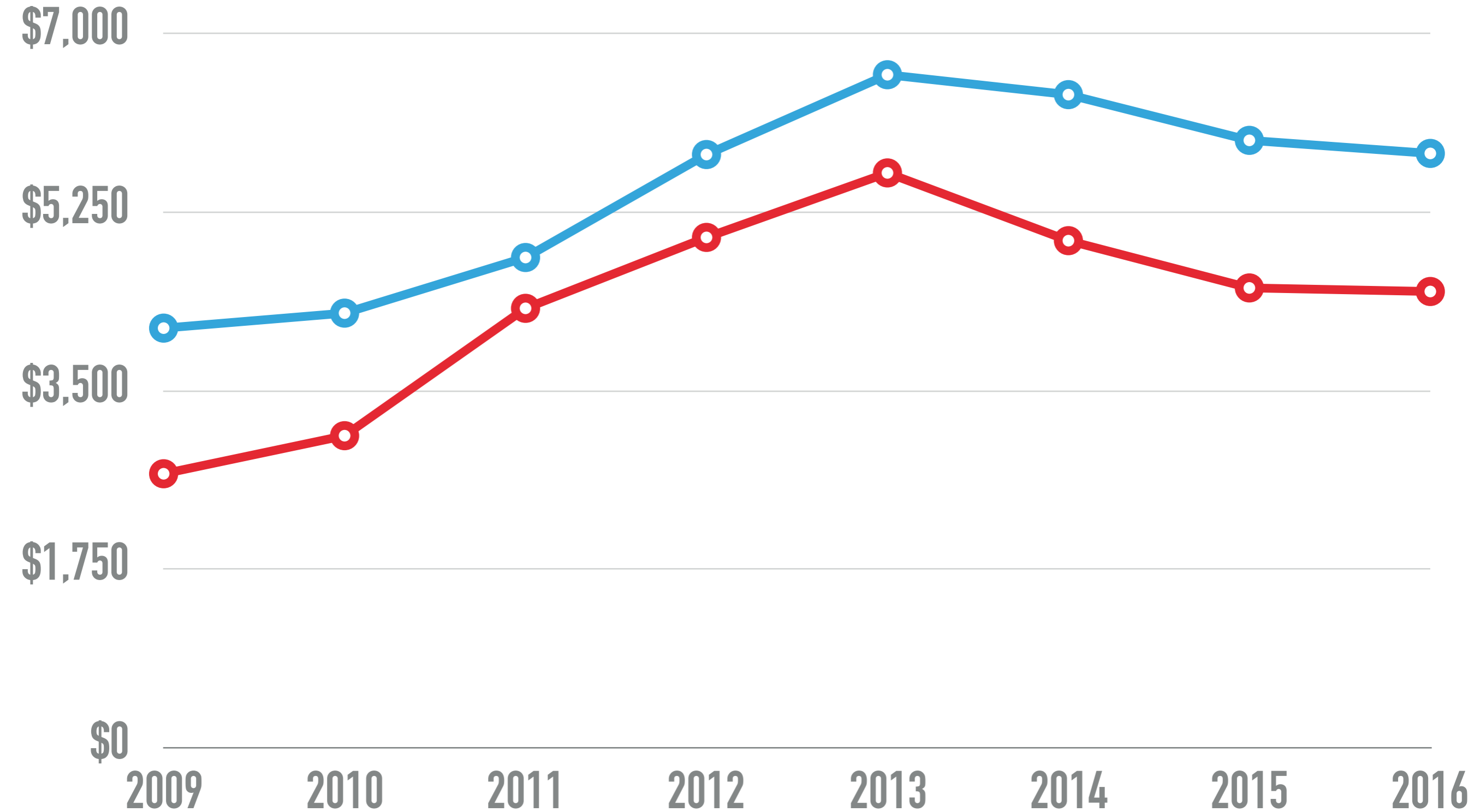
CORN SEEDS - GLOBAL MARKET SHARE



MARKET COMPARISON - GLOBAL CORN SEEDS REVENUE (USD MILLIONS)

○ Monsanto

○ DuPont



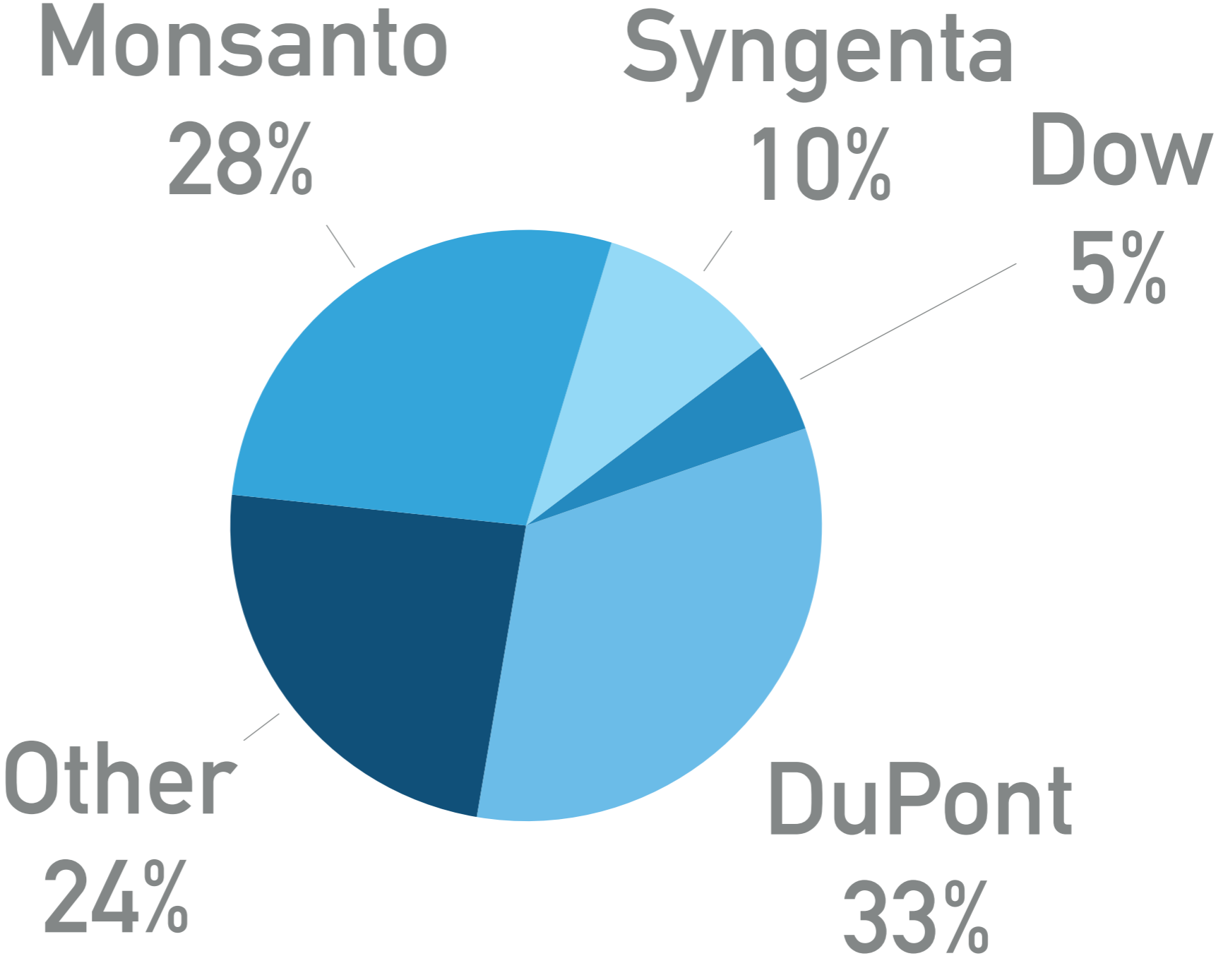
HISTORICAL US SEED MARKET SHARE (%)

CORN

	2017	2015	2014	2013	2012	2011
Monsanto	37.3	36.7	35.5	34.9	34.4	33.4
DuPont	34.7	34.6	34.7	36.0	36.1	35.8
Local Co.	10.3	10.5	11.1	11.0	11.8	13.0
AgReliant	6.7	7.1	7.0	6.7	6.5	6.6
Dow	5.6	6.1	6.0	5.3	5.2	4.7
Syngenta	5.4	5.0	5.7	6.1	6.0	6.5

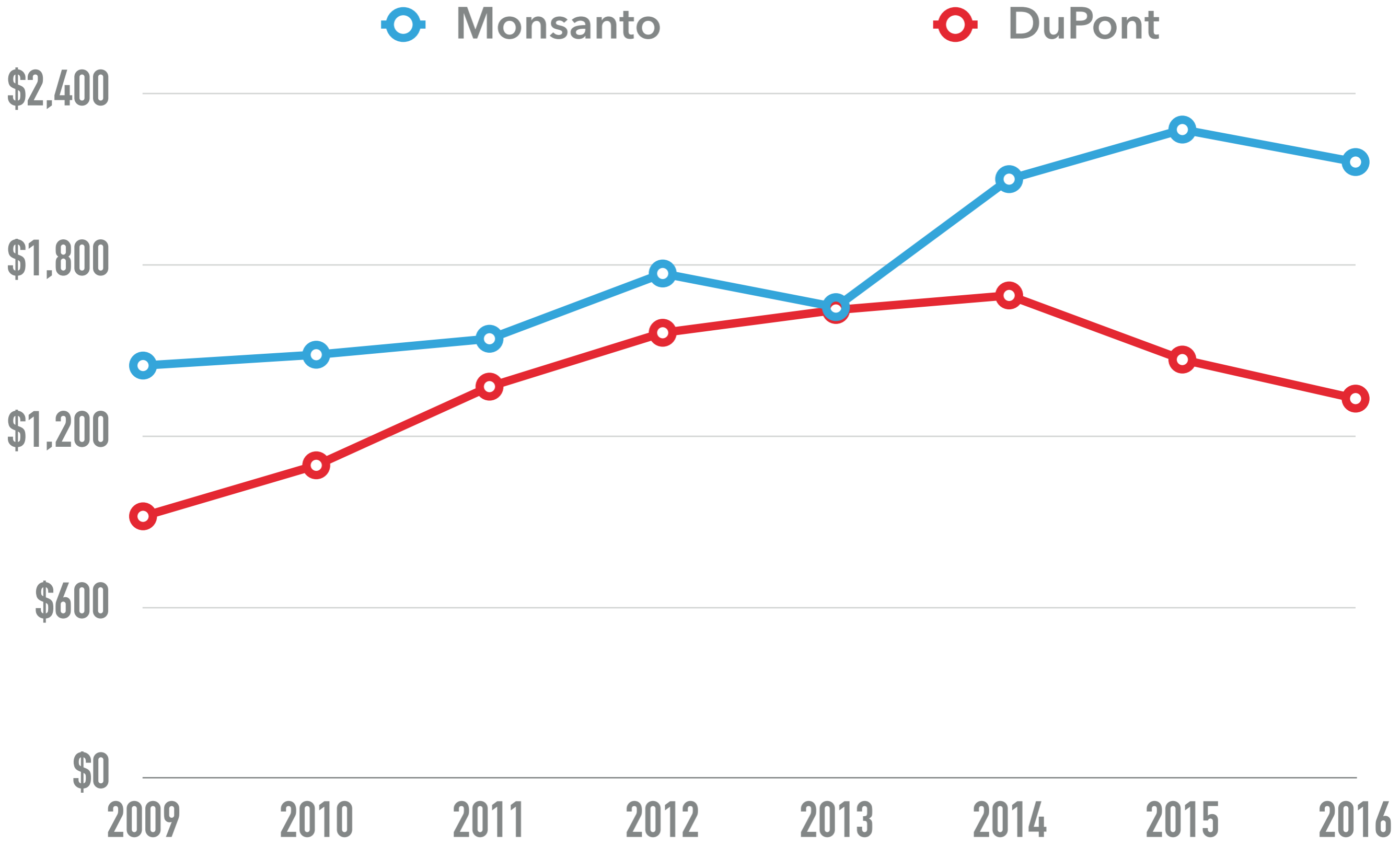
Source: The Commodity Innovation Lab, Farm Journal and KG Marketsense

SOYBEAN SEEDS - GLOBAL MARKET SHARE



Source: The Commodity Innovation Lab, Morgan Stanley and Farm Journal

MARKET COMPARISON - GLOBAL SOYBEAN SEEDS REVENUE (USD MILLIONS)



Source: The Commodity Innovation Lab and Bloomberg LP

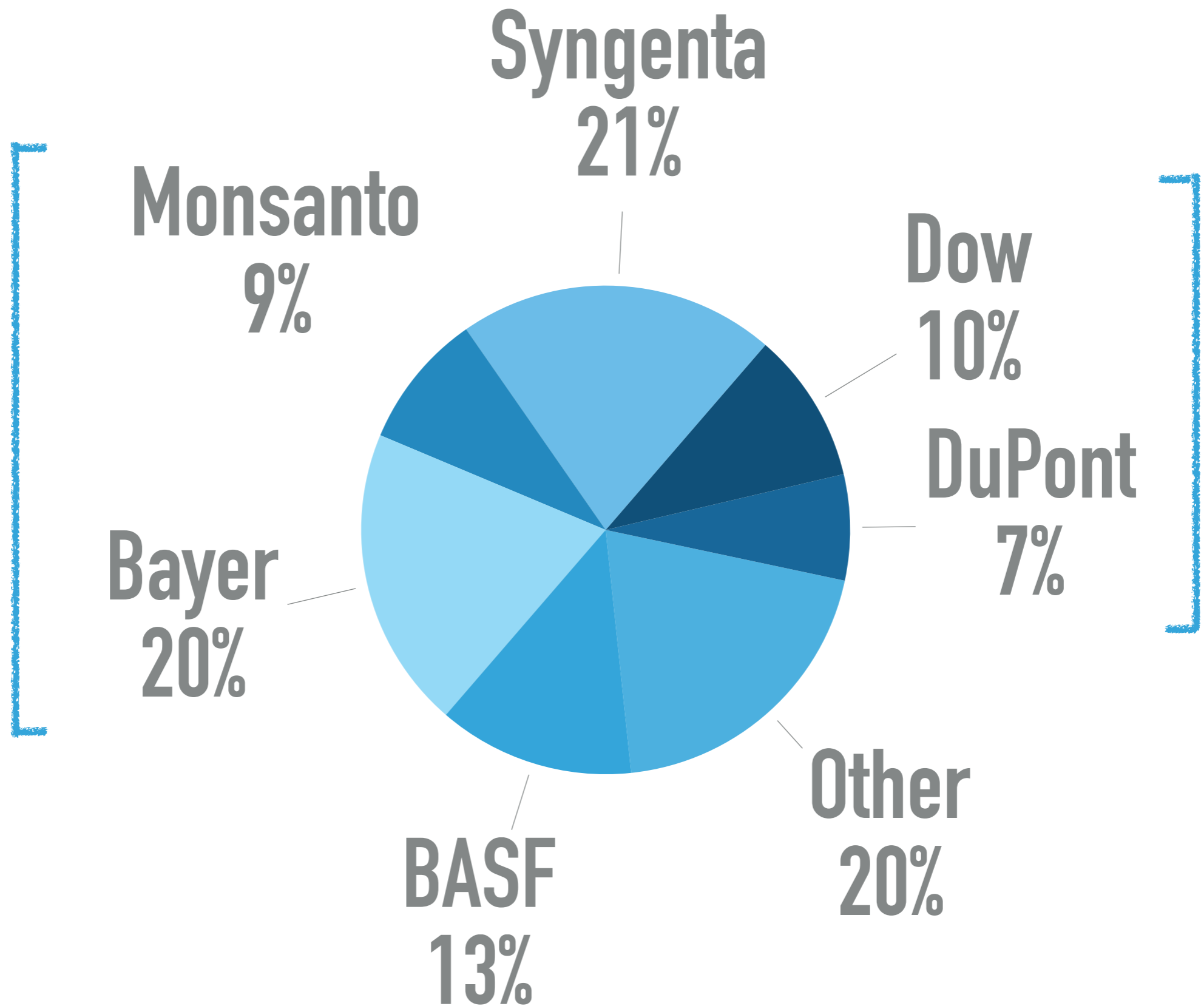
HISTORICAL US SEED MARKET SHARE (%)

SOYBEAN

	2017	2015	2014	2013	2012	2011
DuPont	31.8	31.2	32.2	34.7	34.0	35.6
Monsanto	28.2	29.5	28.0	26.8	26.0	23.7
Local Co.	20.0	19.2	20.2	17.9	19.1	20.3
Syngenta	9.2	9.6	9.8	10.1	10.3	10.8
Dow	5.8	5.4	5.2	5.0	3.5	2.0
AgReliant	3.0	3.1	2.7	3.0	3.1	2.6
Other	2.0	2.0	2.4	2.5	4.0	5.0

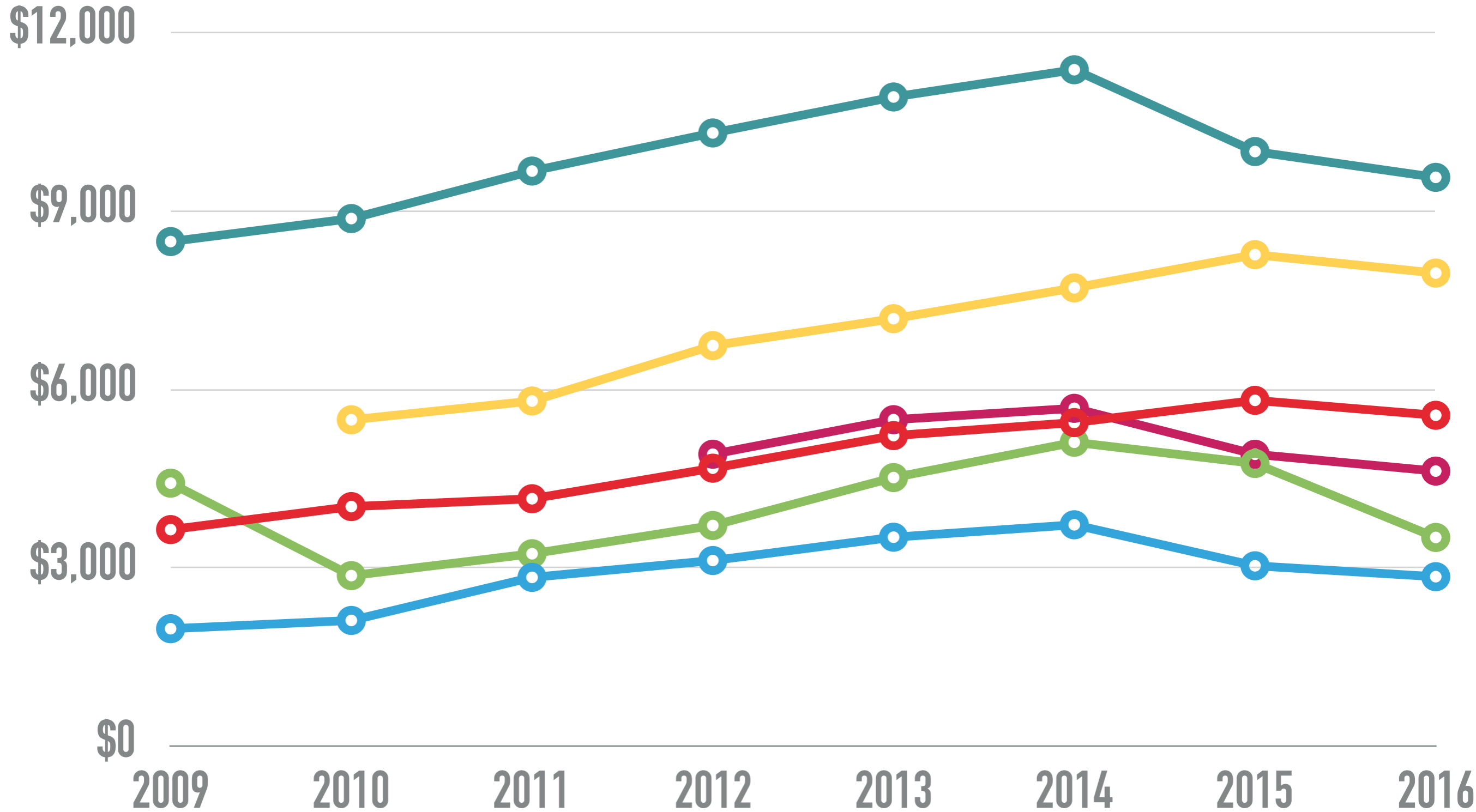
Source: The Commodity Innovation Lab, Farm Journal and KG Marketsense

CROP PROTECTION - GLOBAL MARKET SHARE



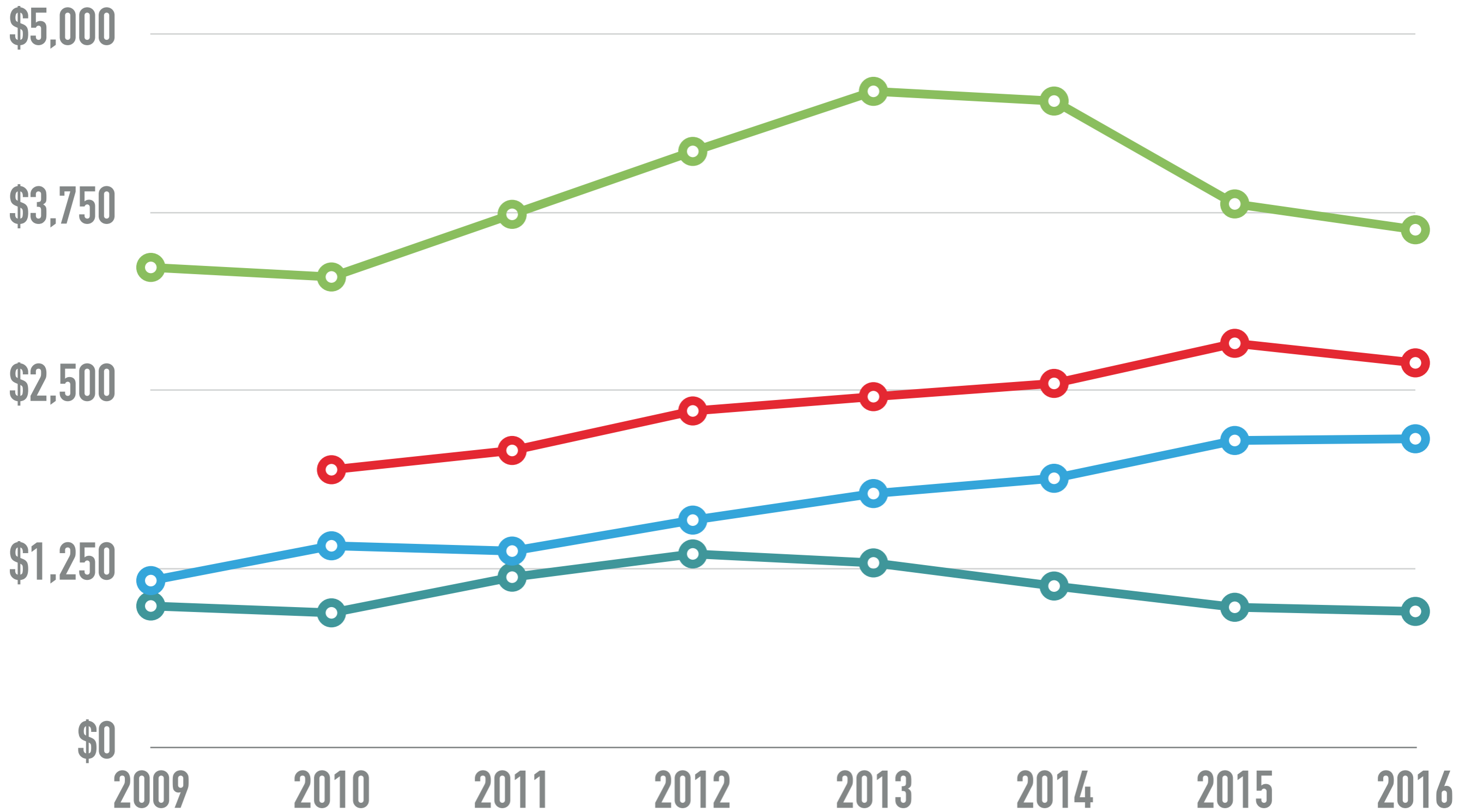
MARKET COMPARISON - GLOBAL CROP PROTECTION REVENUE (USD MILLIONS)

● DuPont ● BASF ● Monsanto ● Syngenta ● Dow ● Bayer



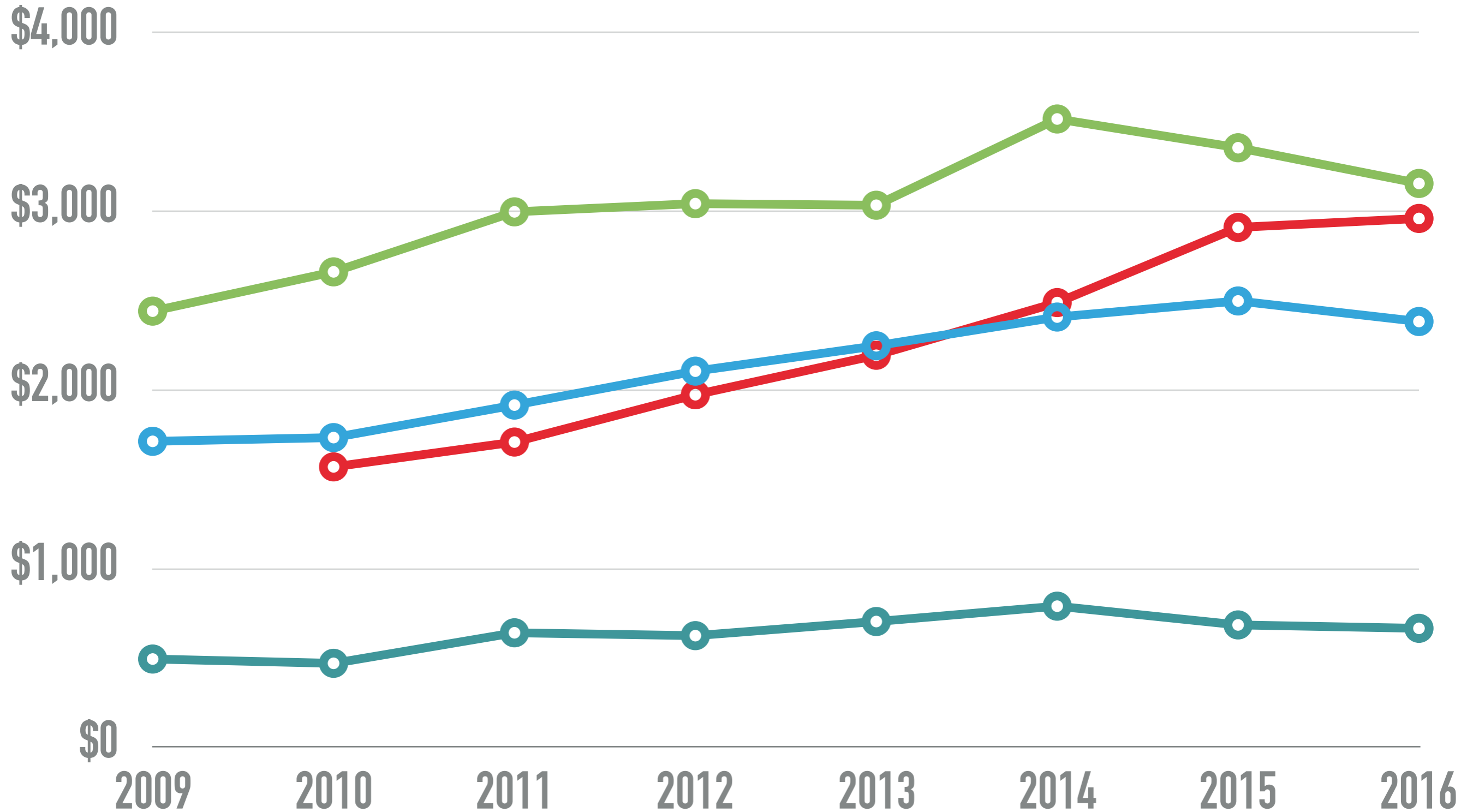
MARKET COMPARISON - GLOBAL HERBICIDES REVENUE (USD MILLIONS)

BASF **Bayer** **Syngenta** **DuPont**



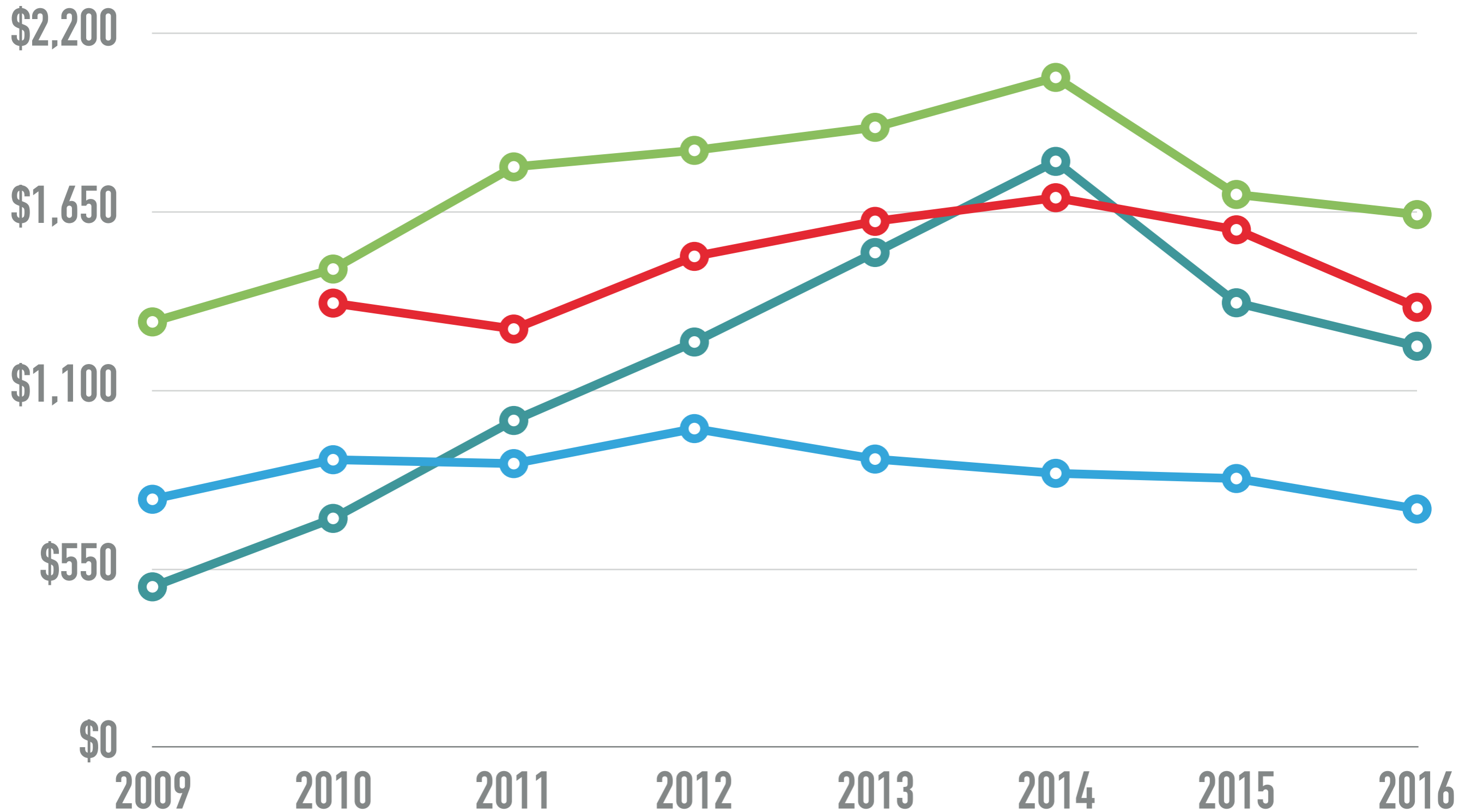
MARKET COMPARISON - GLOBAL FUNGICIDES REVENUE (USD MILLIONS)

 BASF  Bayer  Syngenta  DuPont



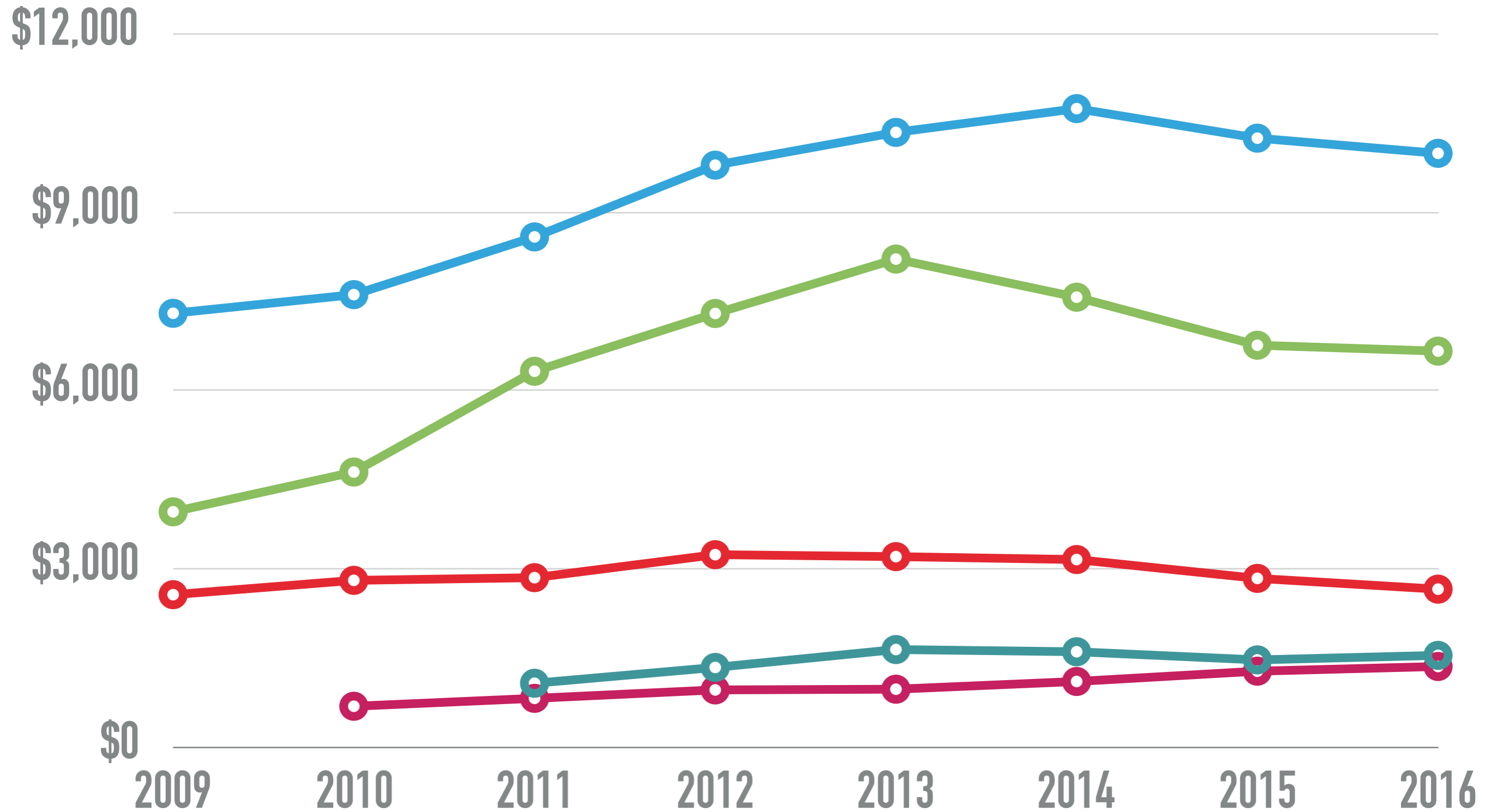
MARKET COMPARISON - GLOBAL INSECTICIDES REVENUE (USD MILLIONS)

 BASF  Bayer  Syngenta  DuPont



MARKET COMPARISON - GLOBAL SEEDS REVENUE (USD MILLIONS)

○ Monsanto ○ Syngenta ○ DuPont ○ Dow ○ Bayer



ESTIMATED US SEED PRICE INCREASES FROM SECTOR CONSOLIDATION

Corn

Soybean

Cotton

	Corn		Soybean		Cotton	
	DuPont	Dow	DuPont	Dow	Monsanto	Bayer
Average	1.57%	6.28%	1.29%	5.82%	19.23%	17.41%
Std Dev.	0.44%	1.76%	0.43%	1.93%	9.06%	8.2%

Source: The Commodity Innovation Lab and AAEA research study (4th Quarter 2016)