



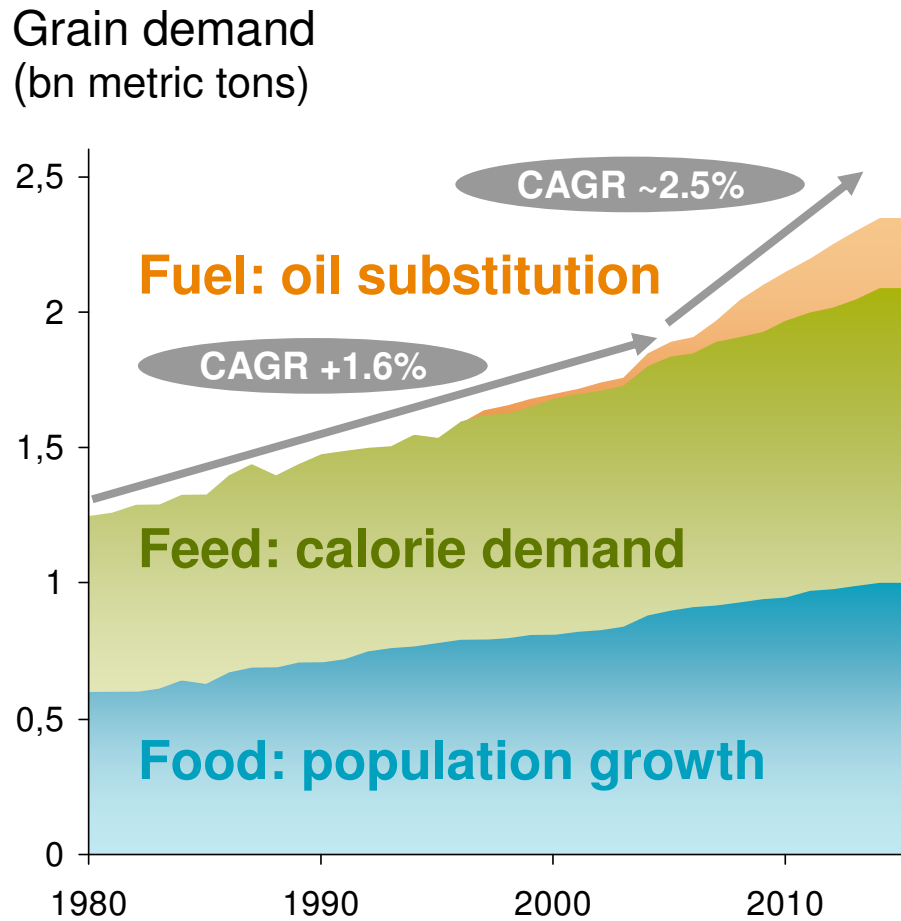
syngenta

Bringing plant potential to life

Suzy Renckens - Head Biotech Regulatory Affairs EAME

JRC Workshop on GMO Pipeline, 12-13 November 2008, Sevilla

Increasing demand for food, feed and fuel



Source: USDA, Goldman Sachs Commodities Research

Challenges for global agriculture

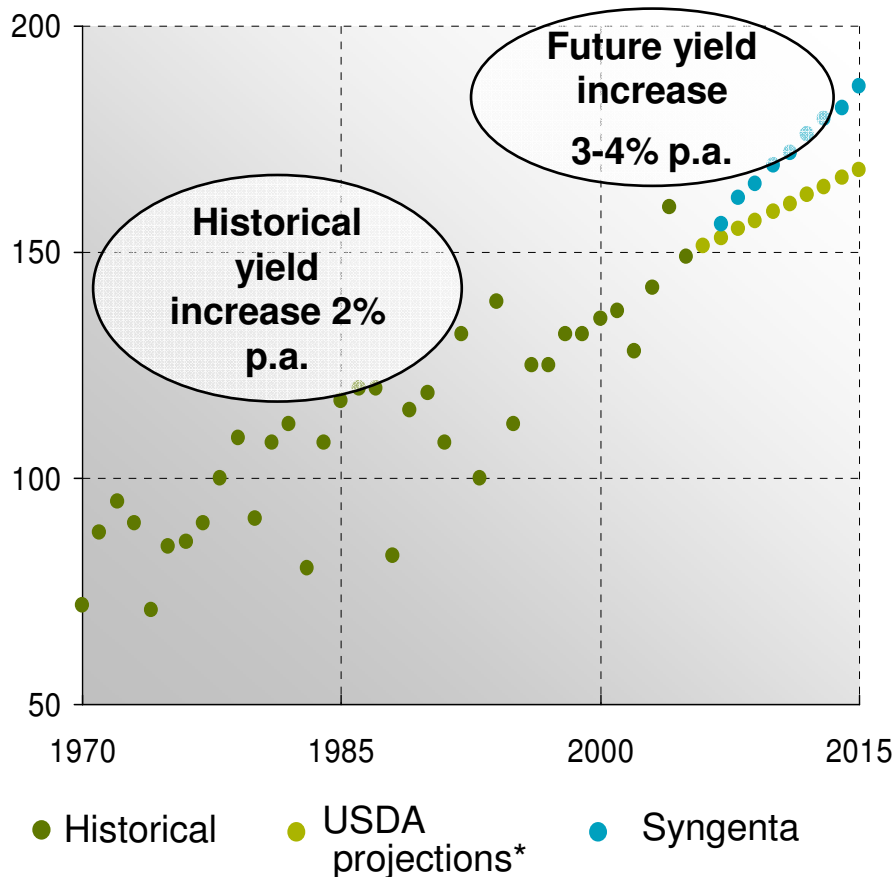
- Huge rise in demand
- Limited farmland
- Decreasing water supplies
- Need to continue raising yields



Progress in technology and productivity is essential

Today: Maximizing yield and decreasing pressure on key feedstocks by delivering next-generation traits

Average corn yield
(bushels per acre)



Innovation to drive increased yield improvement

- Crop protection chemistry
- Seed treatment
- Molecular breeding
- Insect tolerance
- Drought tolerance
- Nitrogen use efficiency



Biofuels: the path to efficient and sustainable renewable fuels will encompass three horizons

Today

Maximizing yield and decreasing pressure on key feedstocks

- Best genetics
- Optimized starch
- Protecting yield
- Facilitate crop production / availability

3- 5 years

Innovating within the existing industry to maximize efficiency

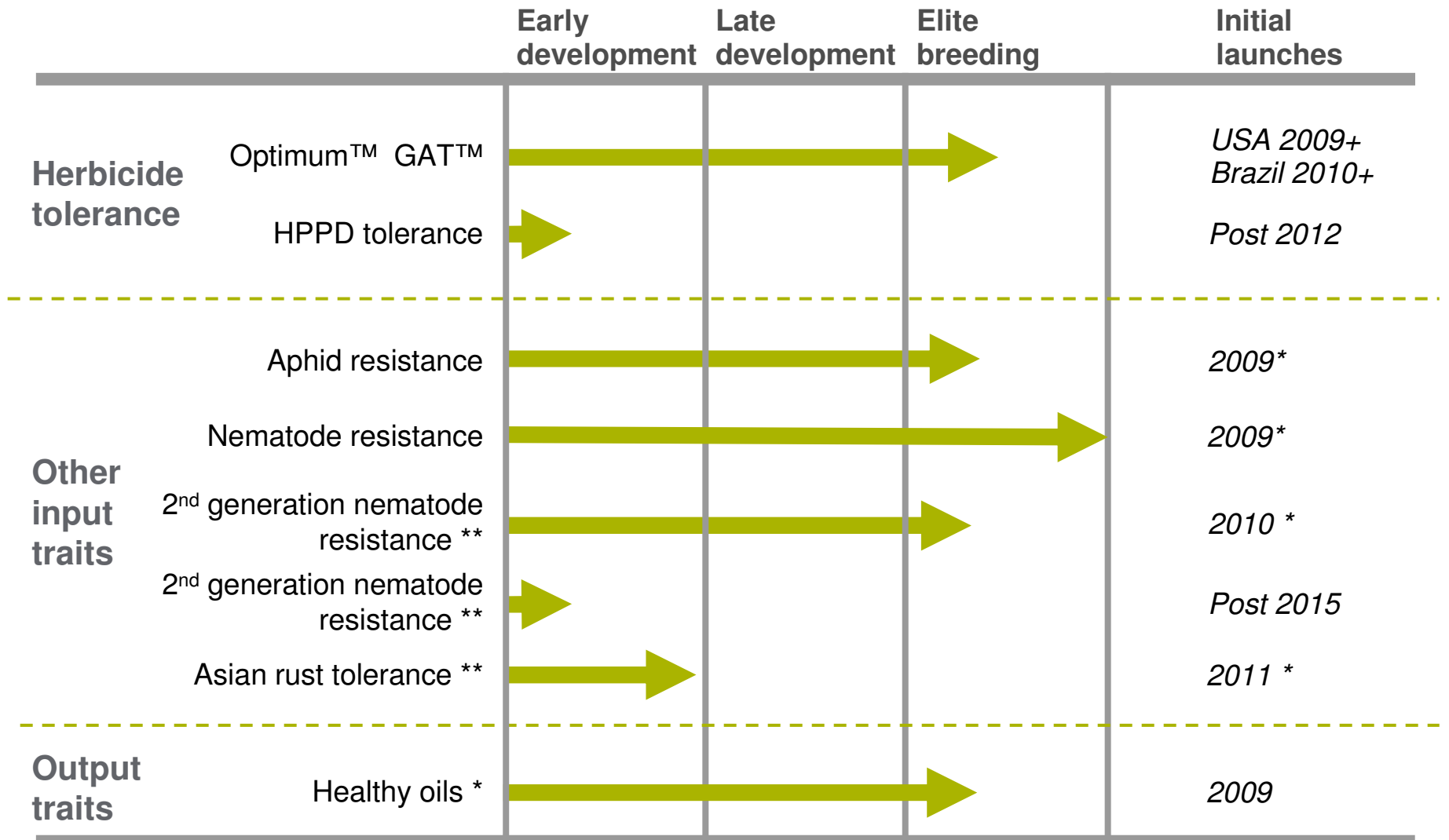
- Tailored crops
- **Corn Amylase**
- Tropical Sugar Beet
- Processing changes

5+ years

Help make sustainable cellulosic conversion a reality

- Self-processing crops
 - Plant-expressed cellulases
 - Substrate modification
- Cellulosic ethanol crop productivity (yield protection, agronomy)

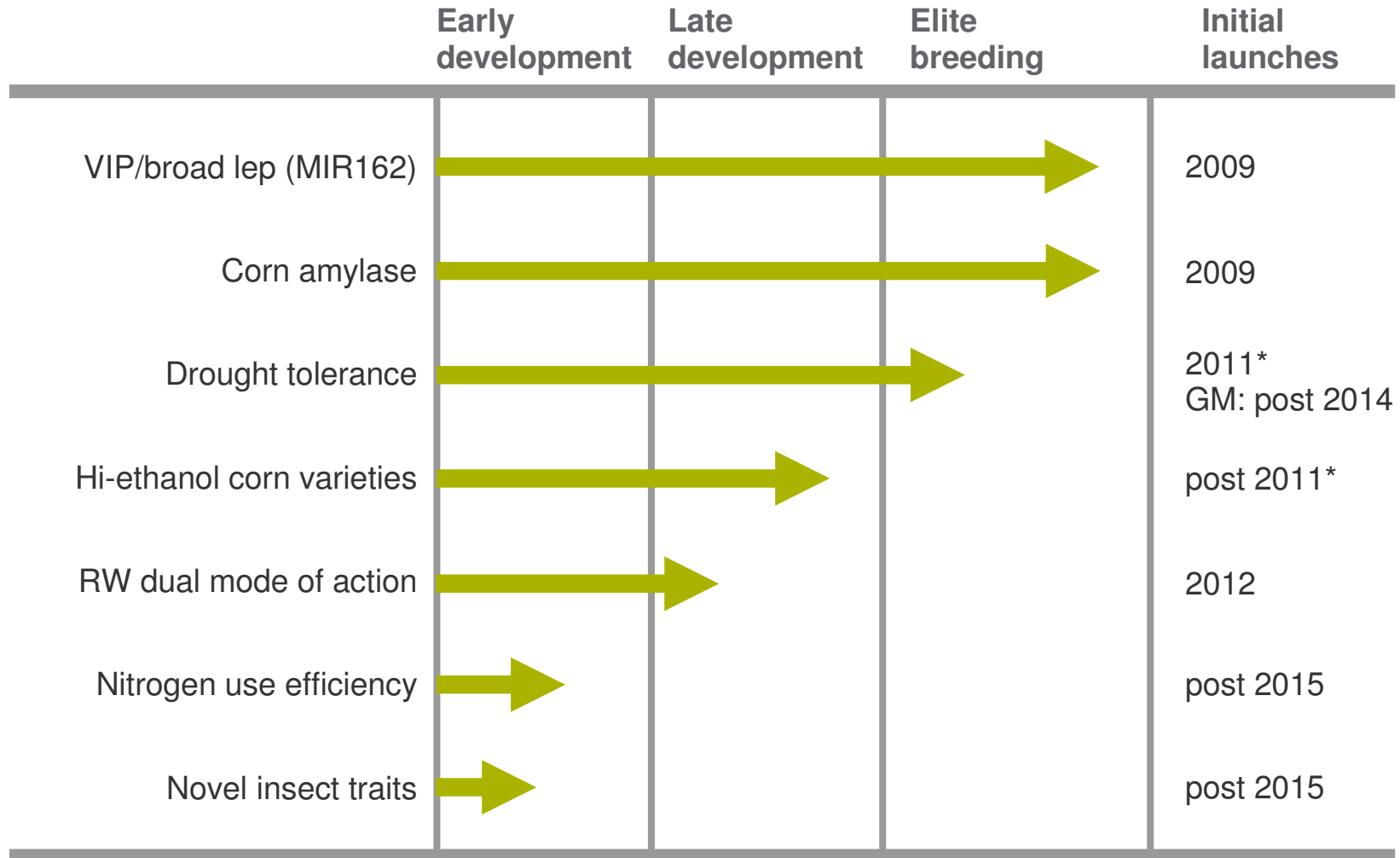
Soybean seeds: innovation revitalizing yields



* Native trait launch

** Native trait and GM projects

Next generation corn technology pipeline



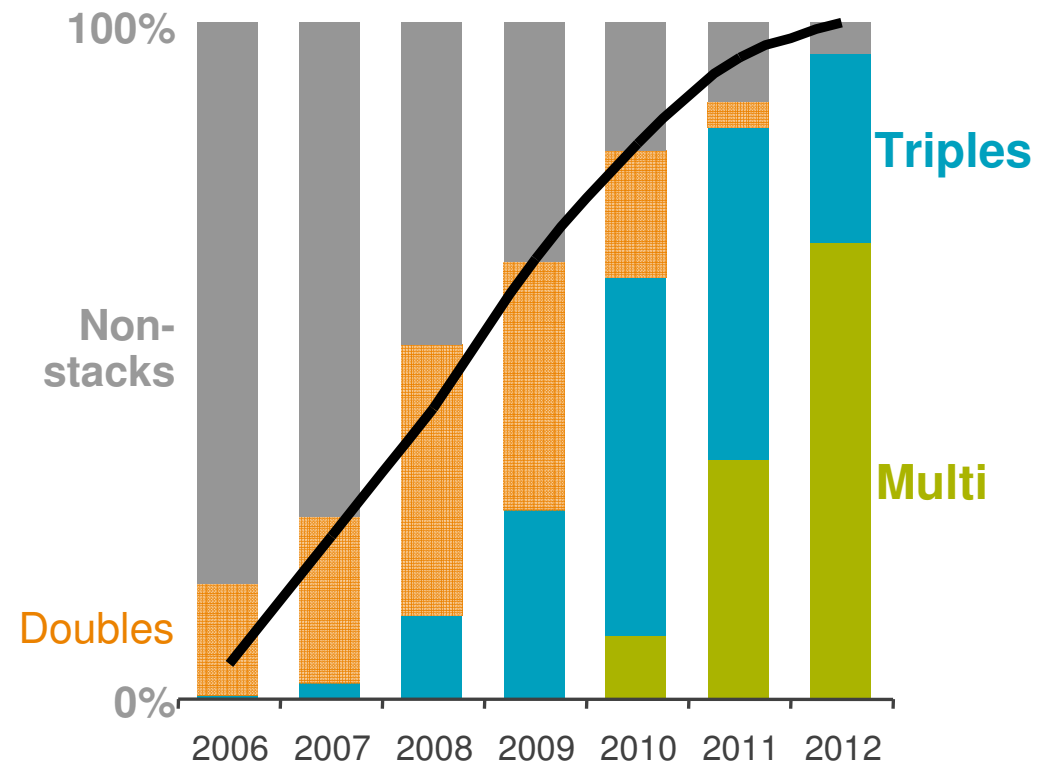
* Native traits breeding

Corn: accelerated trait delivery

- 85% triples+ in 2011
- Multi stack opportunities
- Margin expansion

Trait portfolio*:
% of volume

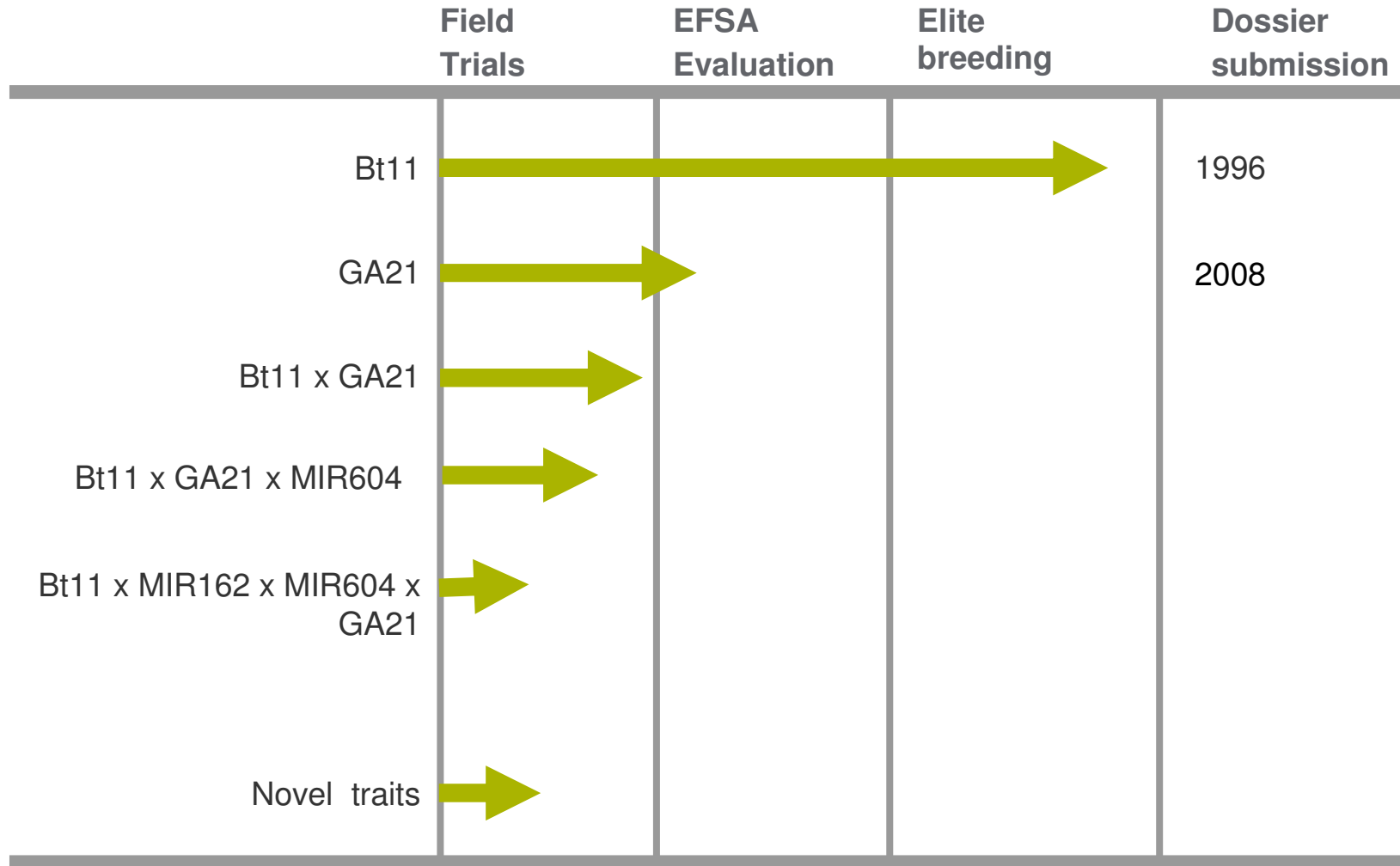
Elite hybrids**
% of portfolio



* Liberty Link not counted as separate trait
** New genetic combinations post acquisition

Source: Syngenta estimates

GM maize pipeline for cultivation in the EU.



* Native traits breeding

Just one example: approval of Bt-11 maize (1)

Country	Year	Remark
USA	1996	Cultivation, food, feed
Canada	1996	Cultivation, food, feed
Argentina	2000	Cultivation
	2001	All uses
Colombia	2007	Cultivation, food, feed
Brazil	2008	Cultivation
Uruguay	2004	Cultivation, food, feed
Mexico	2007	Food, feed
EU	1998	Food, feed (Bt11 field corn)
	2004	Food (Bt11 sweet corn)
	2005	Re-registration food and feed
UK	1997	Food
Switzerland	1998	Food, feed
The Netherlands	1998	Feed

Just one example: approval of Bt-11 maize (2)

Country	Year	Remark
Australia/New Zealand	2001	Food
Rep. South Africa	2002	Food, feed
	2003	Cultivation
Japan	1996	Food, feed
	2002	Cultivation
Taiwan	2004	Food
Philippines	2003	Food, feed
	2005	Cultivation
Russia	2003	Food
	2006	Feed
Korea	2003	Food
China	2004	Food, feed

Bt maize: an accepted technology by EU farmers

- Where available in the EU, farmers are adopting the Bt maize technology:
 - Cultivation in Spain since 1998
 - In 2008, Bt maize crops have grown in Portugal, Spain, Germany, Czech Republic, Slovakia, Romania.
 - Economic studies demonstrate profitability increases at farmer incomes.

At present only one company has been granted access to the Bt market

limiting the farmer choice

