BASF Plant Science – Future Products

EFSA Scientific Hearing

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Regulatory Affairs

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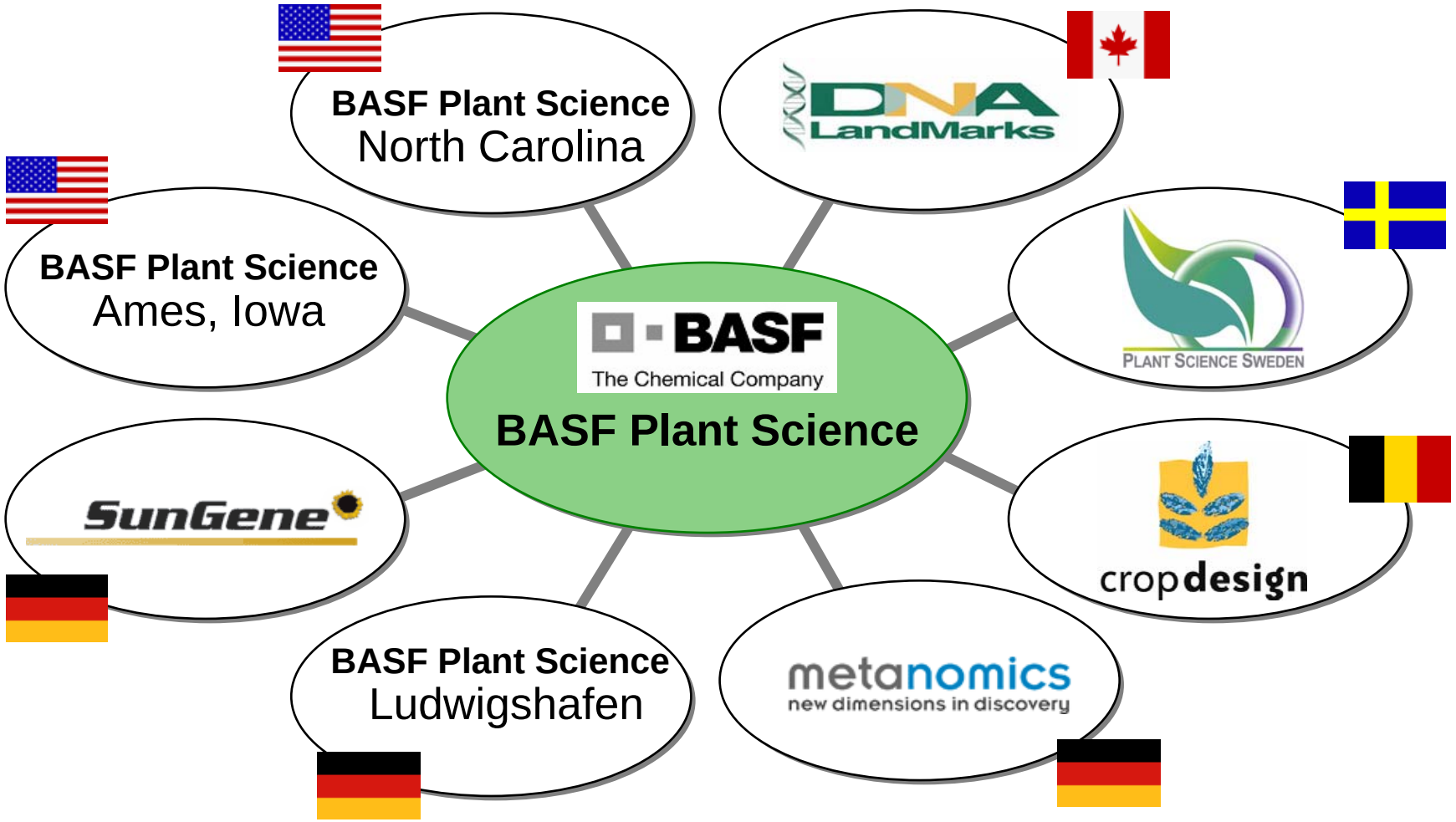
BASF Plant Science – Future Products

- BASF Plant Science
- Project Portfolio
- Examples
- Conclusion

BASF Plant Science

- Focus:
  - More efficient agriculture
  - Better, healthier nutrition
  - Renewable resources – Plants as ‘Green’ Factories
- > 600 employees at 8 sites in 5 countries
- Partnership with seed companies
- Co-operations with universities and research institutes worldwide
- BASF Growth Cluster: 330 Mio. Euro R&D investments within the next three years

BASF Plant Science Platform



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Strategic Focus

More Efficient Agriculture

- Crop protection
  - Nematode resistance
  - Herbicide tolerance
  - Fungal resistance
- Agronomic performance
  - Yield increase
  - Stress tolerance

Better, Healthier Nutrition

- Feed value
  - Amino acid profile
  - Phytate reduction
- Food specialties
  - Carotenoids
  - Omega-3 fatty acids

Plants as "Green" Factories

- Plant ingredients for industrial use
  - Amylopectin
  - Amylose

Development Timeline for GM crops

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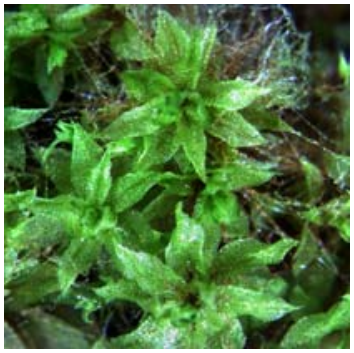
More Efficient Agriculture: *Phytophthora* Resistant Potatoes

- Resistance genes from *Solanum*
- Complementing existing resistance gene reservoir
- Directed at commercial potato genetic background

More Efficient Agriculture: Drought Tolerance

Gene Identification	Proof of Concept	Target Crop
		
Moss	Trans-formants / Parental line	

- Explore existing gene pools e.g. in flowering plants, moss, algae, fungi
- Modulating gene expression e.g. transcription factors
- Potential target crops: wheat, oilseed rape, maize, soybean

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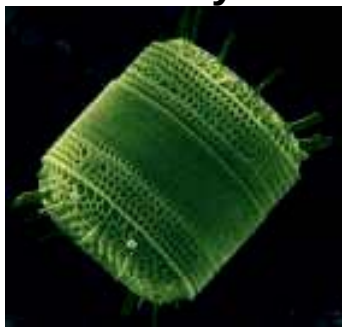
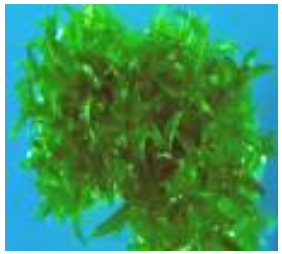
Better, Healthier Nutrition: Omega-3 Fatty Acids

Today



Future



Omega-3 fatty acid genes

- Long-chain polyunsaturated fatty acids
- Explore metabolic pathways e.g. in plants, moss, algae, fungi
- Complementing existing pathways
- Multi-gene constructs

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Plants as “Green” Factories: Optimized Potato Starch

Amflora

- Modulate expression of genes in the starch metabolic pathway (down-regulate, RNAi)
- Analogous traits obtained via mutational breeding
- E.g. waxy maize, high-amylose maize

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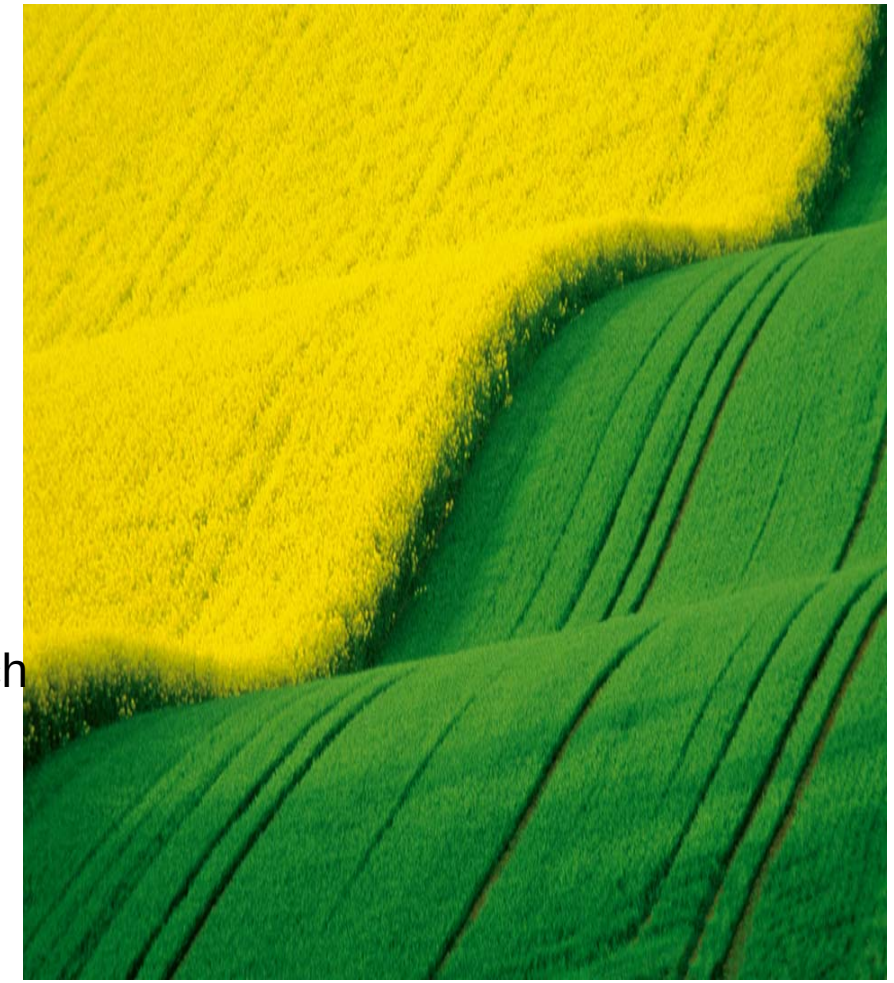
Conclusion

- **Products in development**
  - Complement or modulate plant biosynthetic pathways
  - Tools: familiar from plant defence mechanisms (R- genes, RNAi) and breeding (transcription factors)
  - Crops: wheat, potato, maize, soybean, oilseed rape
- **Safety considerations**
  - Comparative risk assessment approach applicable
  - Case-by-case
  - Bilateral discussions

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