Driving sustainable growth through innovation

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Delft, September 25, 2017

ROYAL DSM

HEALTH NUTRITION MATERIALS

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Safe harbor statement

- This presentation may contain forward-looking statements with respect to DSM's future (financial) performance and position. Such statements are based on current expectations, estimates and projections of DSM and information currently available to the company. DSM cautions readers that such statements involve certain risks and uncertainties that are difficult to predict and therefore it should be understood that many factors can cause actual performance and position to differ materially from these statements. DSM has no obligation to update the statements contained in this presentation, unless required by law.

- A more comprehensive discussion of the risk factors affecting DSM's business can be found in the company's latest Annual Report, which can be found on the company's corporate website, www.dsm.com

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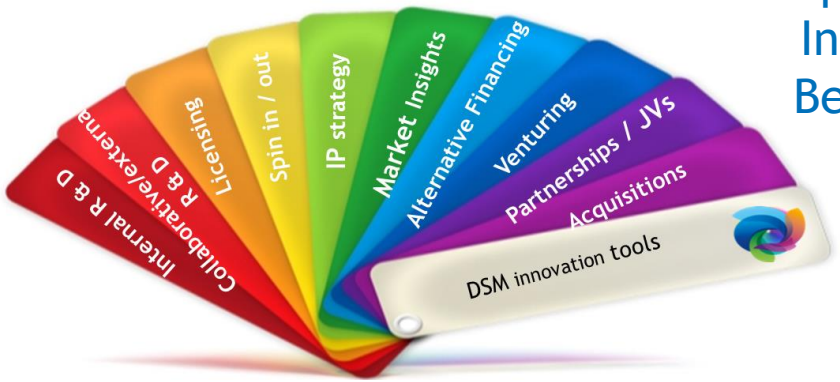
Agenda | Sustainable growth through innovation

1. Innovation within DSM
2. Big need and potential for biotechnology in the world
3. DSM is a biotechnology powerhouse
4. How biotechnology innovation is driving DSM's above market

DSM transformed into an *intrinsically* innovative company



Top Quartile Innovation Benchmark

New Materials & Biotechnology/Food Lab

€426 million R&D investment in 2016

22% (2016)

Innovation Sales

All @ Higher Gross Margins

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DSM organized for new growth platforms & accelerating innovation

DSM Innovation Center

New Business Development


Biomedical


Bio-based Products & Services


Advanced Solar


Business incubator

Enablers / Accelerators

Excellence in Innovation


Venturing

IP & Licensing


Science & Technology

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We drive innovation through all our businesses

Resins & Functional Materials

Engineering Plastics

Dyneema

Nutritional Products

Food Specialties

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Powered by DSM's scientific competences

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Biotechnology is a key competence

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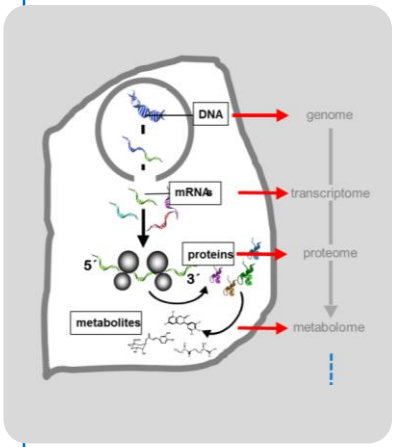
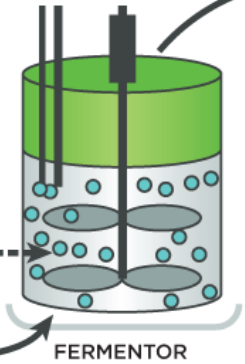
What is biotechnology?



Industrial Micro-Organisms

+

Renewable Feedstock



Living micro-organisms
e.g. dairy cultures for cheese ripening

Cell extracts
e.g. yeast extracts for savory flavor

Purified products
e.g. enzymes for bread structuring

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DSM's biotechnology strength has a long history since 1870

CLASSICAL BIOTECH (1870 - present)

- Classical strain improvement
- Industrial fermentation
- Biodiversity exploration
- Mutagenesis and screening
- Microbial breeding
- Exploration natural products

MODERN BIOTECH (1980 - present)

- Recombinant DNA technology
- Biocatalysis
- Metabolic pathway engineering
- Advanced analysis
- DNA shuffling, DNA sequencing
- Protein engineering

INDUSTRIAL BIOTECH (2005 - present)

- Biorefinery
- Bioinformatics and modeling
- Systems & synthetic biology
- Automated Strain Engineering
- Whole genome sequencing
- Low-cost DNA synthesis
- Precision Genome Editing

1870 Yeast • Ethanol • Vitamins • Antibiotics • Citric acid • Savory ingredients • Carotenoids Natamycin • Dairy cultures • Enzymes • PUFAs – Omega's • Microbial gums • Succinic acid • C5 yeast • Stevia **Today**

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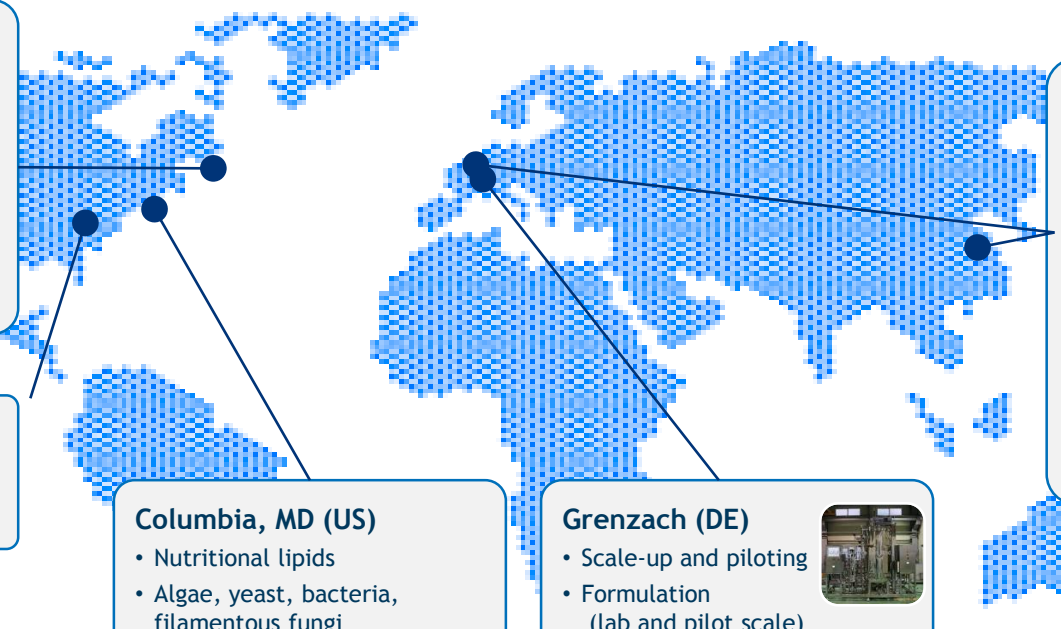
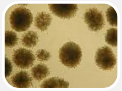
DSM's global biotechnology R&D infrastructure



Lexington, MA (US)
- Carotenoids, flavors & fragrances, water and fat soluble vitamins
- R&D with yeast, bacteria, filamentous fungi

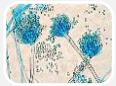
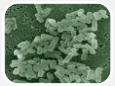



Winchester, KY (US)
- Scale-up and piloting

Columbia, MD (US)
- Nutritional lipids
- Algae, yeast, bacteria, filamentous fungi


Grenzach (DE)
- Scale-up and piloting
- Formulation (lab and pilot scale)

Delft (NL), Shanghai (CN)
- Yeast extracts (flavors), enzymes, cultures, specialty ingredients (preservatives, sweeteners, protein, biocatalysts,..)
- R&D, scale-up and piloting
- Yeast, bacteria, filamentous fungi

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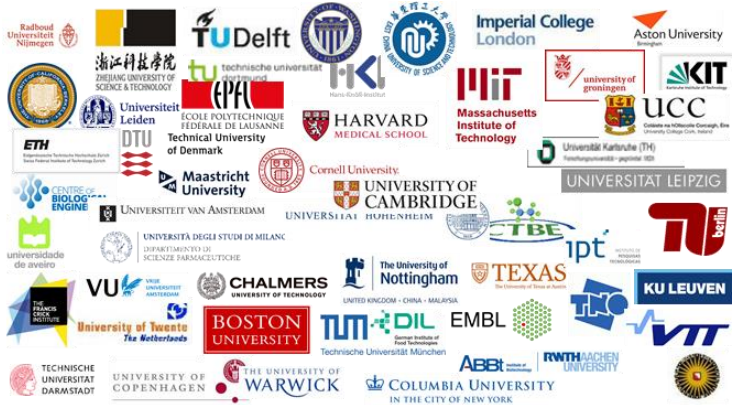
Complemented by partnerships and open innovation enabling further access to global capabilities and technologies

Collaborating with 80+ top academic institutes



Active in 30+ Public Private Partnerships (PPPs)

Venturing, partnerships and collaborative innovation initiatives in biotechnology

- Continuous technology scouting
- Long-standing connecting bright innovations partnering events attracting start-up in biotechnology

POET DSM Advanced Biofuels

biosuccinium sustainable succinic acid enabling sustainable materials

AMYRIS

Isobionics Natural Ingredients

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Biotechnology key to address grand challenges of growing global population

Chemistry

Extraction from Naturals

Biotechnology

Biotechnology solution of choice:

- More sustainable
  - ✓ Clean label
  - ✓ Drive for Natural
  - ✓ Non-fossil based
- Lower cost

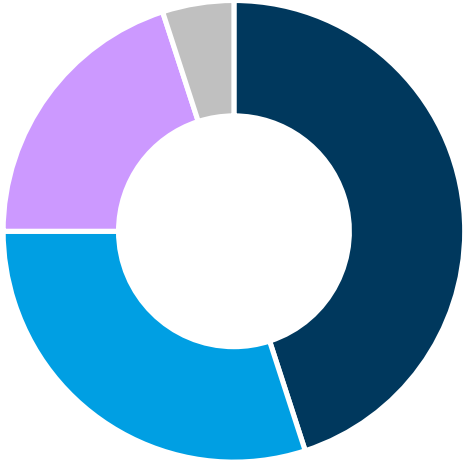
Biotechnology solution of choice:

- More sustainable
  - ✓ Scarcity resources e.g. land/water-use
  - ✓ No chemical extraction
- Consistent quality
- Lower cost

Biotechnology potential is enormous and growing high-single digit per year

Current global market ~US$300-350bn

Estimated to grow high-single digit ~US$750bn by 2025*



Main applications

Medicine - Pharma

Chemicals - Fuel

Materials

Food

Feed

Agri

* Market size and growth based on various publications incl. Deloitte, E&Y, grandviewresearch

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DSM has a strong biotechnology driven portfolio

Food Specialties

Gistex®, yeast-extract for taste enhancement

- Food enzymes
- Dairy Cultures
- Savory yeast-extracts
- Bio-preservatives
- Processing agents
- Hydrocolloids
- Steviol Glycosides

Nutritional Products

Omega-3 and Omega-6 for Early Life Nutrition

- Vitamins
- Nutritional Lipids
- Natural beta-carotene
- Probiotics
- Feed enzymes
- Aquaculture, Green Ocean JV

Bio-based Solutions

Bio-succinic acid for green materials

- Ethanol C5 yeast
- Cellulosic enzymes/POET JV
- Bio-succinic acid

Innovation Center

Innovative flavor & fragrance ingredients

- Proteins - Canola
- BioAlliance
- Venturing incl. Isobionics, Amyris

Rich biotechnology innovation pipeline driving growth

CleanCow

Feed additives to significantly reduce methane/GHG emissions from cattle

Steviol Glycosides

Sustainable fermentative Stevia to replace sugar

GreenOcean

Producing omega-3 fatty acids for animal nutrition without use of fish

BioAlliance

DSM and Syngenta develop and commercialize biological solutions for agriculture

Sustainable biofuels

Enzymes and yeast enabling biofuels

CanolaPro™

Plant protein for foods and beverages

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Developing sustainable biological solutions to protect agriculture

- Strong societal and industry need for sustainable solutions to safeguard food and nutrition security
  - ✓ Biocontrols market set for double-digit growth from ~US$1.5bn (2015) to >US$7bn by 2030[1]
  - ✓ By 2030 these could represent up to 10% of global crop protection market
- Cooperation DSM and Syngenta makes excellent progress to accelerate development these solutions
  - ✓ DSM contributes unique leading microbial database, strong screening competence and decades of experience in scaling and manufacturing of microbial products
  - ✓ Syngenta has specialized know-how in agri-applications, plant biotechnology, global market access and commercial strength
- Project with long-term focus and high potential

[1] Source: Dunham Trimmer – July 2014 + Syngenta

Best-in-class enzymes and yeast enabling biofuels

- Development and supply of high-value knowledge, ingredients and expertise in the field of bio-conversion technology are critical success factors
- Building on unique position in biotechnology we are leading in cost-effective, high-yield enzymes and yeasts enabling biofuels
- Our strategy is to license our technology and expertise to bio-based entrepreneurs
- Based on breakthroughs achieved by DSM in the performance of its enzymes, POET-DSM decided to manufacture the enzymes on-site

Canola protein: turning an inedible by-product into valuable food protein

- Plant-based proteins key for healthy, nutritious diet: should be 10-15% of daily intake
- Currently available plant proteins do not ideally comply with needs of consumers
- Market value of specialty food proteins is about US$6.5 bln[1]
- DSM takes canola meal as raw material and extracts food proteins
  - ✓ Good taste
  - ✓ High solubility
  - ✓ Non-GMO, non-gluten
- Demo unit up and running, strong market interest and preparing to scale

[1] Giract Food Ingredient Research 2015/2016 + DSM

Biotechnology is driving growth

- Biotechnology offers substantial benefits over traditional chemical routes and natural extraction routes
- DSM has a 150 year track record in biotechnology and a wide range of world class (bio)technology platforms
- DSM's rich biotechnology innovation pipeline driving growth, including:
  - ✓ GreenOcean, omega-3 fatty acids for animal nutrition without use of fish
  - ✓ CleanCow, feed additives to significantly reduce methane/GHG emissions from cattle
  - ✓ Fermentative Stevia to replace sugar
  - ✓ BioAlliance, biological solution for sustainable crop-protection
  - ✓ Canola, plant-based proteins

Biotechnology pioneer with 150 years experience set to capture growth

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