European Commission

Exploiting opportunities and addressing the challenges of biotech in the Agri-Food sector

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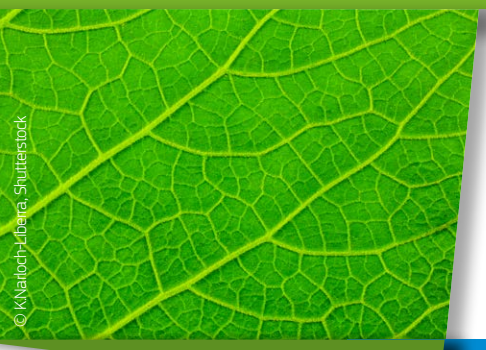
Biotech solutions for the Agri-Food sector encompass a range of modern techniques and tools, which can help with understanding the fundamental mechanisms of the basis of life and be used to provide substantial benefits to farmers, consumers and the environment. To this end, there is a need for an in-depth knowledge of the impacts of new technologies, addressing the needs and concerns of different stakeholders and society at large. This also requires transparent and accurate communication on scientific and technological advances and the broader engagement of different players to ensure that both opportunities and challenges are not overlooked.

This CORDIS Results Pack highlights seven innovative projects that have received funding from either the FP7 or Horizon 2020 programmes that are at the forefront of exciting biotech developments and new discoveries within the Agri-Food sector.



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3TO4 | (3to4: Converting C3 to C4 photosynthesis for sustainable agriculture), coordinated in the United Kingdom

This project has aimed to enhance photosynthesis in plants, drawing inspiration from the more efficient C_4 photosynthesis, ultimately aiming to use the C_4 mechanism to reduce the extent of photorespiration. By applying this to crops, it would offer the opportunity to substantially boost yields and contribute to better food security.

HTTP://WWW.3TO4.ORG/

ABSTRESS | (Improving the resistance of legume crops to combined abiotic and biotic stress), coordinated in the United Kingdom

The ABSTRESS project has used genetic engineering to create new legume varieties that can better withstand drought and disease. The aim has been to obtain sustainable commercial crop varieties with direct resistance to biotic or abiotic stress.

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HTTPS://SECURE.FERA.DEFRA.GOV.UK/ABSTRESS/


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ECOSEED | (Impacts of Environmental Conditions on Seed Quality), coordinated in Austria

Seed quality is of paramount importance to agriculture, food security and the conservation of wild species. The ECOSEED project has significantly contributed to achieving a better understanding of plant stress response, particularly in extreme environmental conditions. These findings will be important for both plant conservation and agricultural production.

HTTPS://WWW.UIBK.AC.AT/BOTANY/ECOSEED/HOME/

FECUND | (Optimisation of early reproductive success in dairy cattle through the definition of new traits and improved reproductive biotechnology), coordinated in Italy

The FECUND project has collected detailed genetic data that is helping to reverse the decline of fertility in cattle. The project results have provided a better understanding of how lactation stress and genetics affect egg and embryo quality, and overall the research has been instrumental in tacking, and in some cases, reversing the fertility decline.


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HTTP://WWW.FECUND-PROJECT.EU/


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MEPOL | (The role of plant primary and secondary metabolism in pollination), coordinated in the Netherlands

This project studied the metabolites that plants produce and release from flowers. MEPOL generated a large amount of data on gene expression and metabolite composition during flower development. Now the research team hopes to generate and validate new hypotheses about how plants are able to regulate the production of scent, colour and nectar.

MULTIHEMP | (Multipurpose hemp for industrial bioproducts and biomass), coordinated in Italy

MULTIHEMP has developed new varieties of hemp, using a cutting-edge genomic approach to achieve rapid, targeted improvements in hemp productivity and the quality of raw material. It is envisioned that these novel and sustainable hemp plants may one day replace more environmentally damaging materials, such as cotton and synthetic materials.


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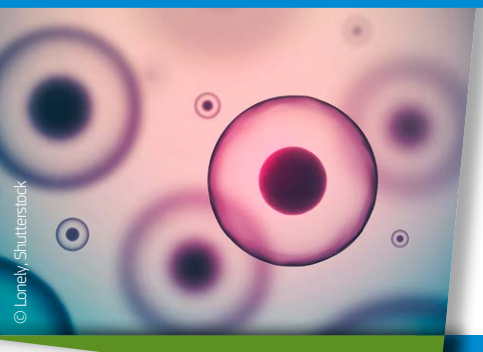
HTTP://MULTIHEMP.EU/PROJECT/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SYNENERGENE | (Synthetic biology – Engaging with New and Emerging Science and Technology in Responsible Governance of the Science and Society Relationship), coordinated in Germany

The Agri-Food sector could benefit greatly from new areas of science, such as the growth of synthetic biology. However, such new areas often cause public concern and require responsible governance. SYNENERGENE has engaged citizens across Europe in thinking about the challenges and opportunities synthetic biology poses.

HTTPS://WWW.SYNENERGENE.EU/

Learn more about EU policies for Agri-Food Biotech:
http://ec.europa.eu/dgs/health_food-safety/index_en.htm

CORDIS Results Pack:
http://cordis.europa.eu/article/id/400315-exploiting-opportunities-and-addressing-the-challenges-of-biotech-in-the-agri-food-sector_en.html

Publications Office

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ISBN: 978-92-78-41483-2
doi:10.2830/263731