





## PRESENTATION OF THE INDUSTRIAL IMPLEMENTATION ACTION PLAN OF THE "ITALIAN MICROBIOME INITIATIVE FOR IMPROVED HUMAN HEALTH AND AGRO-FOOD PRODUCTION"

November 26, 2020

#### THE VIEW OF THE INDUSTRY

Mauro Fontana, Cluster CLAN & Technical&Scientific Advisor Soremartec Italia



Food Product Characteristics & Microbioma improvement THE ROLE OF NUTRITION AND FOODS



# NUTRITION PLAYS A FUNDAMENTAL ROLE ON THE MICROBIOTA AND MICROBIOME PATTERNS AND THE THE FOODS COMPOSITION (MACRO-NUTRIENTS AND MICRO-NUTRIENTS) IS FUNDAMENTAL TO IMPROVING THEM OR NOT

**Current Explorations of Nutrition and the Gut Microbiome: A Systematic Review (P20-032-19)** Elise Costa, Elise Costa (George Washington School of Medicine and Health Sciences), Scott Jackson (National Institute of Standards and Technology) Current Developments in Nutrition, Volume 3, Issue Supplement\_1, June 2019, nzz040.P20-032-19, <u>https://doi.org/10.1093/cdn/nzz040.P20-032-19</u>



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#### IN THE LAST DECADE FOOD COMPANIES AND R&D INSTITUTIONS HAVE BEEN DEVELOPING AN INCREDIBLE NUMBER OF RESEARCHES AND PRODUCTS FOCUSED ON THE POSITIVE IMPACT ON MICROBIOTA & MICROBIOME PATTERNS

THANKS TO

#### THE FAST AND STRONG EVOLUTION OF THE HEALTH & NUTRITION SCIENCE, FOOD SCIENCE & FOOD TECHNOLOGY, ARTIFICIAL INTELLIGENCE & BIG DATA

AND

AS A POSITIVE ANSWER TO THE CONSUMERS HIGH INCREASE IN THE ATTENTION AND CARE TO THEIR HEALTH & WELLBEING STATUS

THE MICROBIOME, DIET AND HEALTH. Towards a science and innovation agenda. OECD SCIENCE, TECHNOLOGY AND INNOVATION. OECD Publishing, POLICY PAPERS, September 2017, n.° 42



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# THE TWO MAIN GENERAL WAYS TO OBTAIN PRODUCTS WITH POSITIVE CHARACTERISTICS FOR THIS PURPOSE ARE

# - ADDITION OF SPECIFIC MICRONUTRIENTS OBTAINED BY NATURAL OR BIOTECHNOLOGICAL PROCESSES OR SYNTHETIC PROCESSES

- DEVELOPING SPECIFIC MICRONUTRIENTS BY FERMENTATION OF THE RAW MATERIAL USED IN THE PRODUCT BY FERMENTING THE PRODUCT ITSELF



Food Product Characteristics & Microbioma improvement BIOTECHNOLOGY AND CIRCULAR ECONOMY APPLICATION



THE FIRST WAY IS VERY INTERESTING, IN PARTICULAR IF APPLIED IN A CIRCULAR ECONOMY VIEW, USING BIOTECHNOLOGY TO RECOVER FROM FOOD CHAIN WASTE SPECIFIC HIGH VALUE SUBSTANCES, LIKE ANTIOXIDANTS, FIBERS OR PEPTIDES



Food Product Characteristics & Microbioma improvement THE FERMENTATION APPROACH



# THE SECOND ONE,

# FERMENTATION,

# IS ONE OF THE MOST ANCIENT AND USED TECHNIQUES FOR PRODUCING OR FOR TRANSFORMING RAW MATERIALS OR FOODS,

LIKE VEGETABLES, CEREALS, PULSES, MILK, MEAT AND FISH

#### AND

# THOUSANDS OF FERMENTED RAW MATERIALS OR FOODS ARE STILL CONSUMED WORLDWIDE TODAY

Health-Promoting Components in Fermented Foods: An Up-to-Date Systematic Review Francesca Melini, Valentina Melini, Francesca Luziatelli, Anna Grazia Ficca, Maurizio Ruzzi 2019 May 27;11(5):1189. doi: 10.3390/nu11051189.







Food Product Characteristics & Microbioma improvement THE NEW FERMENTATION APPROACH

# THANKS TO THE SCIENTIFIC EVOLUTION, TAILOR-MADE MODIFIED VEGETABLE RAW MATERIALS, SUCH AS PULSE AND/OR CEREALS AND/OR SEEDS, CAN BE OBTAINED BY SPECIFIC AND INNOVATIVE FERMENTATION PROCESSES

THESE NEW RAW MATERIALS CAN IMPROVE SIGNIFICANTLY THE NUTRITIONAL PRODUCT PROPERTIES

*Fermentation for tailoring the technological and health related functionality of food products* <u>Netsanet Shiferaw Terefe</u>, <u>Mary Ann Augustin</u> Crit Rev Food Sci Nutr Actions, . 2020;60(17):2887-2913. doi: 10.1080/10408398.2019.1666250. Epub 2019 Oct 4.







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# THE PRODUCTION IN SIGNIFICATIVE QUANTITIES OF SPECIFIC AND VERY HIGH QUALITY OF FIBERS, PEPTIDES, FATTY ACIDS CAN CONTRIBUTE TO INCREASE THE NUTRITIONAL VALUE OF THE RAW MATERIALS OR FOOD PRODUCTS, AND THEIR ABILITY TO IMPROVE THE IMMUNITY DEFENSE FOR THE BODY







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## THE NEW FERMENTATION EVOLVED APPROACH IS A STRATEGIC SUPPORT FOR TWO MAJOR FOOD INNOVATIVE TRENDS

PLANT BASED FOODS

## NEW RAW MATERIALS AS BULKING FOR REFORMULATION TO ACHIEVE PRODUCTS MORE IN LINE WITH THE UPDATED NUTRIONAL SCIENCE



Thanks for hearing !

#### **CL.USTER A.GRIFOOD N.AZIONALE - CL.A.N.**

Viale L. Pasteur, 10 - 00144 Roma Tel +39 06.5903855 – Fax +39 06.5903342 Via Gobetti 101, 40129 Bologna Tel +39 051.639 – Fax +39 06.5903342

clusteragrifood@gmail.com - www.clusteragrifood.it