

USDA Foreign Agricultural Service

GAIN Report

Global Agricultural Information Network

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The Italian Biotech Industry 2015

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Report Highlights:

Again, this year, Italy's biotechnology industry is characterized as a dynamic and promising sector, despite the difficult economic situation that biotech companies have to confront on a daily basis. Italy has a large and profitable biotech industry operating in the medical, industrial, and agricultural sector, ranking 3rd in Europe in the number of pure biotech companies.

General Information:
The Italian Biotech Industry 2015

Overview

Table 1: Italian Biotech Industry main figures

	2015
Number of companies	384
Total turnover (€/000)	7.726.415
R&D Investments (€/000)	1.501.133
Number of employees in R&D	7.285

Source: BioInItaly report 2015

As reported by Assobiotech, the Italian Association for the Development of Biotechnology, again, this year, Italy's biotechnology industry is characterized as a dynamic and promising sector, despite the difficult economic situation that biotech companies have to confront on a daily basis. The number of biotech companies in Italy has sharply increased over the last decade. At the end of 2014, 384 biotech companies engaged in research and development were recorded. Among these, 225 fall under the definition of pure biotech companies (whose core business activities are exclusively related to biotechnology), ranking third in Europe just behind Germany and the United Kingdom.

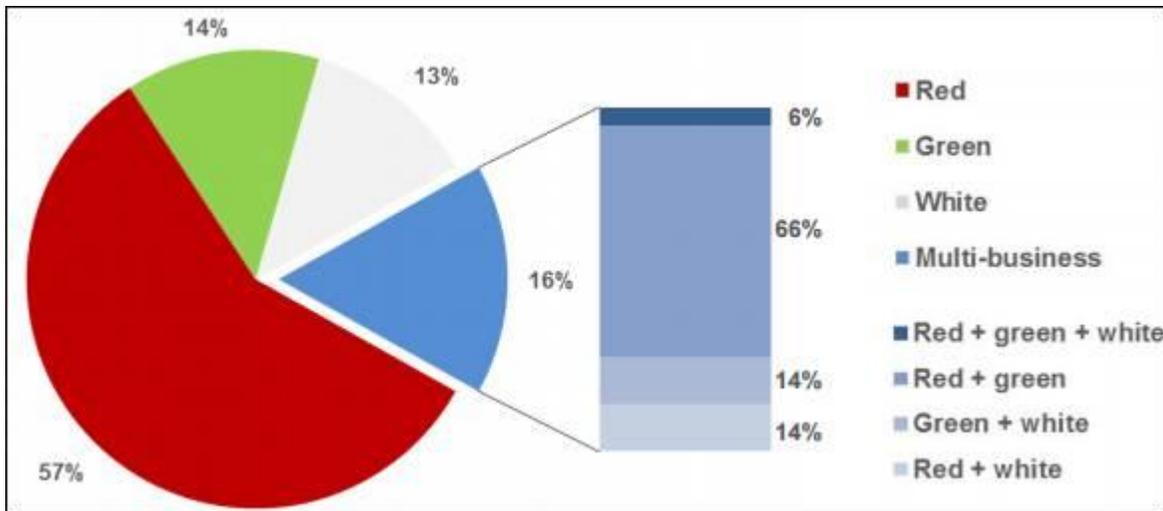
Biotechnology companies can be divided into the following categories according to their field of operation:

- Red Biotech: medical biotechnology
- Green Biotech: agricultural biotechnology
- White Biotech: industrial biotechnology
- Multi-core: mix of the previous categories.

Fifty-seven percent of the 384 recorded companies are exclusively active in red biotech, 14 percent in green biotech, 13 percent in white biotech, while 16 percent operate in more than one field of application as multi-core.

Approximately 79 percent of the Italian biotech companies are micro-sized or small (less than 50 employees); 11 percent are medium-sized (from 50 to 250 employees), and the remaining 10 percent are large-sized (more than 250 employees).

Figure 2: Distribution of biotech companies among the 4 sectors in Italy



Source: BioInItaly report 2015

According to the BioInItaly report 2015, most biotech companies are located in Lombardia (117), Piemonte (47), Emilia-Romagna (35), Lazio (35), Toscana (31), Friuli Venezia Giulia (23), and Veneto (23). Lombardy has been particularly praised for its university infrastructure, strong tradition of entrepreneurship, and its regional government's support for biotech companies. 47 percent of the biotech companies works within science parks or incubators, 28 percent has independent headquarters, while 25 percent is located near universities, clinical centers, or research institutes.

A) RED BIOTECH (MEDICAL BIOTECHNOLOGY)

Table 3: Italian Red Biotech Industry main figures

	2015
Number of companies	277
Total turnover (€/000)	7.458.537
R&D Investments (€/000)	1.413.493
Number of employees in R&D	5.761

Source: BioInItaly report 2015

Red biotech accounts for 96 percent of total turnover of the whole biotech industry, representing 94 percent of total investments. Red biotech activities can be categorized as follows:

Therapeutic: development of drugs and other therapeutic approaches, such as gene- or cell-based therapies for the treatment of various diseases;

Vaccines: biological preparations for prophylaxis and treatment;

Drug delivery: technologies to convey the drugs to a specific site through optimization of their absorption and distribution (advanced materials, liposomes, antibodies, cell therapy, etc.);

Molecular diagnostics: DNA/RNA-based tests for the diagnosis, prognosis, and detection of

any predispositions to specific diseases and for the analysis of pathogenic mechanisms;

Drug discovery: synthesis, optimization, and characterization of drug candidates; assay development, screening, and validation activities on medicinal products.

B) WHITE BIOTECH (INDUSTRIAL BIOTECHNOLOGY)

Table 4: Italian White Biotech industry main figures

	2015
Number of companies	76
Total turnover (€/000)	183.375
R&D Investments (€/000)	63.796
Number of employees in R&D	732

Source: BioInItaly report 2015

The white biotech refers to the use of modern biotech methods for the processing and the production of chemicals, materials, and fuels, including “bioremediation” technologies for environmental protection. Once again, almost all the white biotech turnover can be attributed to approximately 40 pure Italian biotech companies.

C) GREEN BIOTECH (AGRICULTURAL BIOTECHNOLOGY)

Table 5: Italian Green Biotech industry main figures

	2015
Number of companies	95
Total turnover (€/000)	84.504
R&D Investments (€/000)	23.844
Number of employees in R&D	792

Source: BioInItaly report 2015

The green biotech category includes the use of modern biotech methods for the production of transgenic plants with applications in the food, chemical, material or fuel sector, molecular pharming (production of drugs in plants), and testing to reveal the presence of ingredients/contaminants in food.

Below is a short list of applications that biotechnology provides to the agro-food sector in Italy:

Identification of a pathogen genotype in food: the use of DNA-based tests allows for distinguishing different bacterium varieties (i.e. Salmonella, Listeria, and Escherichia coli) and identifying the pathology source;

Analysis of food allergens: the use of advanced DNA-based technologies (PCR) allows for identifying food allergens much more easily than using traditional methods;

GMO Identification: the analysis to investigate the presence of GMO products through

biotechnology has become a wide spread standard procedure, as a result of EC Regulation N.1830/2003, concerning the traceability and labeling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms.

D) GENOMICS, PROTEOMICS AND ENABLING TECHNOLOGIES (GPET)

Genomics, proteomics, and enabling technologies (GPET) include all genomic (investigation of the structure and function of genes) and proteomic activities (analysis of protein regulation, expression, structure, post-translational modification, interactions and function), bioinformatics, biochips and other bio-related tools, biopharmaceutical production, molecular basic research, and further enabling technologies.