

Statistics on Biotechnology Use Year 2022

Main results

- Internal R&D expenditure increased by 13.0% in 2022, reaching 2,565 million euros.
- The full-time equivalent personnel dedicated to internal R&D activities in Biotechnology was 35,301.2. 58.0% were women.

More information

- [Detailed results](#)
- [Complete publications from previous years](#)
- [Statistics on R&D activities](#)

Expenditure in internal R&D activities related to Biotechnology reached 2,565 million euros in 2022, an increase of 13.0% as compared with the previous year. This expenditure represented 13.3% of the total spending on internal R&D activities.

By execution sectors, expenditure by the *Business* sector increased by 17.8% and expenditure by *Higher Education* increased by 10.8%.

Regarding the total expenditure on internal R&D activities in Biotechnology, the Business sector showed the highest percentage (47.7% of the total). Behind them were *Public Administration* (30.2%), *Higher Education* (21.6%) and *Private Non-Profit Institutions (IPSFL)*, with 0.4%.

Expenditure on internal R&D in Biotechnology by execution sector

Year 2022. Thousands of euros

Sector	Total	%	% over total R&D
TOTAL	2,565,367	100.0	13.3
Enterprises	1,223,801	47.7	11.2
Government	775,164	30.2	23.3
Higher Education	554,906	21.6	11.0
Private non-profit	11,496	0.4	17.1

Financing of Internal R&D

Internal R&D activities related to Biotechnology were financed in 2022, mainly by the *Business* sector (44.4% of the total) and the *Public Administration* sector (40.1%).

Expenditure on internal R&D in Biotechnology by execution sector and financing

Year 2022. Thousands of euros

SECTOR	TOTAL	SOURCES OF FUNDS (%)				
		ENTERPRISES	GOVERNMENT	HIGHER EDUCATION	PRIVATE NON-PROFIT	REST OF THE WORLD
TOTAL	2,565,367	44.4	40.1	3.7	2.1	9.7
Enterprises	1,223,801	80.8	9.8	0.1	1.1	8.3
Government	775,164	14.9	69.3	0.2	3.7	11.9
Higher Education	554,906	5.0	67.1	16.6	1.7	9.6
Private non-profit	11,496	59.3	9.8	0.0	17.5	13.5

Employment in internal R&D activities related to Biotechnology

In 2022, the full-time equivalent (FTE) personnel dedicated to internal R&D activities in Biotechnology was 35,301.2. 58.0% of the personnel were women.

The research collective consisted of 22,324.6 individuals as FTE personnel. 54.5% were women.

Personnel employed in internal R&D activities in Biotechnology by execution sector, occupation and gender

Year 2022. Full-time Equivalence

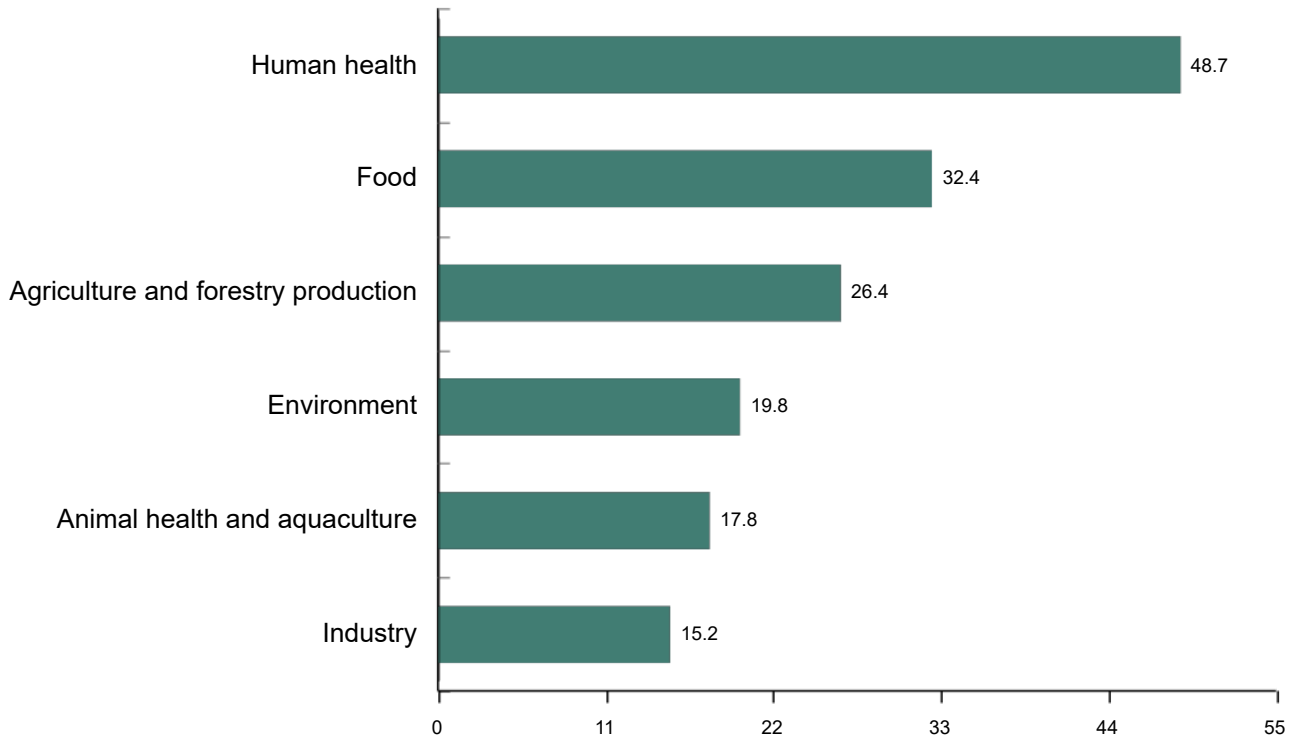
SECTOR	TOTAL		RESEARCHERS	
	TOTAL	% WOMEN	TOTAL	% WOMEN
TOTAL	35,301.2	58.0	22,324.6	54.5
Enterprises	12,993.4	57.5	7,069.9	54.7
Government	11,442.1	63.6	6,766.8	60.3
Higher Education	10,721.9	52.5	8,386.7	49.7
Private non-profit	143.8	61.4	101.2	53.4

Application areas of Biotechnology

Among the final application areas of products obtained from the use of different types of biotechnologies, *Human Health* and *Food* stood out, accounting for 48.7% and 32.4% of the total units, respectively.

Units with biotechnological activities, according to final application areas of Biotechnology

Year 2022. Percentage



Current press release at: <https://www.ine.es/dyngs/Prensa/en/EUB2022.htm>

Data by Autonomous Community

The Autonomous Communities with the highest expenditure on internal R&D activities in Biotechnology in 2022 were Cataluña (31.5% of the total), Comunidad de Madrid (26.9%) and Andalucía (9.6%).

Expenditure on internal R&D in Biotechnology by autonomous communities, according to execution sector

Year 2022. Thousands of euros

	TOTAL	%	ENTERPRISES	%	REST OF SECTORS *	%
TOTAL	2,565,367	100.0	1,223,801	100.0	1,341,566	100.0
ANDALUCÍA	247,223	9.6	95,843	7.8	151,380	11.3
ARAGÓN	41,462	1.6	19,968	1.6	21,493	1.6
ASTURIAS, PRINCIPADO DE	25,776	1.0	6,672	0.5	19,104	1.4
BALEARS, ILLES	28,371	1.1	8,650	0.7	19,721	1.5
CANARIAS	19,346	0.8	5,503	0.4	13,843	1.0
CANTABRIA	6,525	0.3	..	..	..	..
CASTILLA Y LEÓN	74,557	2.9	29,322	2.4	45,235	3.4
CASTILLA-LA MANCHA	35,651	1.4	23,489	1.9	12,162	0.9
CATALUÑA	807,469	31.5	396,387	32.4	411,082	30.6
COMUNITAT VALENCIANA	200,608	7.8	82,753	6.8	117,854	8.8
EXTREMADURA	5,796	0.2	4,752	0.4	1,043	0.1
GALICIA	127,106	5.0	48,184	3.9	78,921	5.9
MADRID, COMUNIDAD DE	688,823	26.9	348,277	28.5	340,546	25.4
MURCIA, REGIÓN DE	45,328	1.8	16,741	1.4	28,587	2.1
NAVARRA, COMUNIDAD FORAL DE	51,008	2.0	..	..	..	..
PAIS VASCO	150,548	5.9	105,590	8.6	44,959	3.4
RIOJA, LA	9,771	0.4	3,410	0.3	6,361	0.5
CEUTA	.	.	.	.	.	.
MELILLA	.	.	.	.	.	.

(*) Rest of sectors: Government, PNP and Higher Education

(.) Not available or unexist

(..) Protected data by confidentiality

Reviews and data updates

The data published today are final. All results are available on [INEBase](#).

Methodological note

The objective of the Statistics on the use of Biotechnology is to measure national efforts in biotechnology-related activities, in order to provide the necessary information for adequate decision-making in scientific-technological policy.

In this regard, the objective is to ascertain the type of biotechnology-related activities that are carried out in each of the sectors in which the economy is divided; the final application areas of the products obtained via the development of biotechnologies; and the economic and human resources appointed to the biotechnology-related productive and investigation activity in Spain.

Type of survey: annual continuous survey.

Population scope: the group of companies, public bodies, universities or higher education centres and private non-profit institutions (IPSFL) that use Biotechnology in their activities.

Geographical scope: the entire national territory.


Reference period: the calendar year.

Collection method: mixed, involving sending questionnaires via postal mail and online completion.

For more information, you can access the [methodology](#) and the [standardised methodological report](#).

INE statistics are produced in accordance with the Code of Good Practice for European Statistics. More information on [Quality at INE](#) and the [Code of Best Practices](#).

For further information see [INEbase](#)

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