

Statistics on Biotechnology Use Year 2017. *Final results*

Main results

- Expenditure on internal R&D activities in Biotechnology increased by 7.2% in 2017, standing at 1,694 million euros. This figure accounted for 12.0% of total internal expenditure on R&D activities.
- The total number of people dedicated to internal R&D activities in Biotechnology, on a full-time equivalent, increased by 7.5% standing at 26,692.1. This figure represented 12.4% of the total employed persons in internal R&D activities.
- The Autonomous Communities with the highest expenditure on internal R&D activities in Biotechnology were Comunidad de Madrid (29.4% of the total), Cataluña (28.2%) and Andalucía (10.3%).

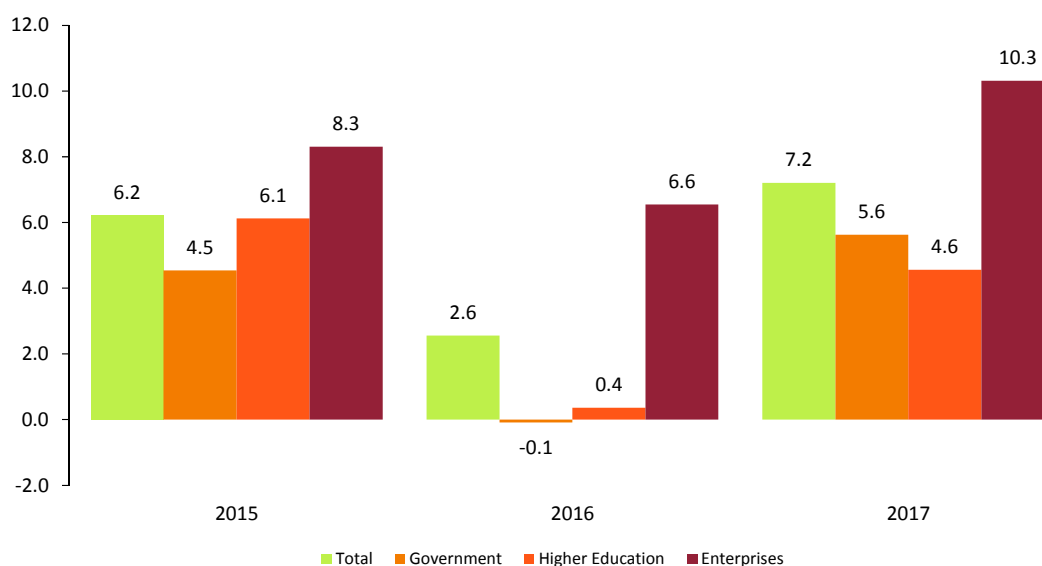
Internal expenditure on R&D activities related to Biotechnology

Internal expenditure on Biotechnology-related R&D activities reached 1,694 million euros in 2017, with an increase of 7.2% with respect to 2016. This expenditure represented 12.0% of total internal expenditure on R&D activities.

By field of operation, the *Company* sector increased its internal expenditure by 10.3%, the *Public Administration* sector by 5.6% and the *Higher Education* sector by 4.6%.

Variation in internal R&D expenditure on Biotechnology.

Percentage



In relation to total internal expenditure on Biotechnology R&D activities, *Companies* registered the highest percentage (40.1% of the total). It was followed by *Public Administration* (36.1%) and *Higher Education* (23.5%).

Source of funds

Internal R&D activities related to Biotechnology in 2017 were mainly funded by *Public Administration* (45.7%) and the *Companies* sector (33.0%). The rest was financed by funds from the rest of the world (14.0%), *Higher Education* (4.6%) and Private Non-Profit Institutions (PNPI) (2.8%).

Internal R&D expenditure on Biotechnology by implementing sector and by source of funds

Thousand euros

Year 2017	Sector	Total	Sources of funds (%)				
			Government	Higher Education	Enterprises	Private non-profit	Rest of the world
	TOTAL	1,693,773	45.7	4.6	33.0	2.8	14.0
	Government	610,723	76.1	0.3	8.3	4.8	10.5
	Higher Education	397,671	58.6	19.0	8.3	1.8	12.4
	Enterprises	679,558	11.0	0.1	69.6	1.2	18.1
	Private non-profit	5,821	14.0	0.5	35.6	42.0	7.8

Employment in internal R&D activities related to Biotechnology

The total number of people dedicated to internal R&D activities in Biotechnology, on a full-time equivalent, increased by 7.5% in 2017, reaching 26,692.1. This figure accounted for 12.4% of the total staff occupied in R&D activities.

57.5% of the personnel employed in internal R&D activities in Biotechnology were women. The highest percentages of female participation were found in PNPI (69.3%) and in the Public Administration (62.5%).

The number of researchers in internal R&D activities in Biotechnology reached 16,693.3 people working full-time or equivalent, 5.9% more than in 2016.

Staff employed in internal R&D activities in Biotechnology by implementing sector, by occupation and sex

In full-time job or equivalent

Year 2017	Sector	Total			Reserchers		
		Total	Variation Rate	% Women	Total	Variation Rate	% Women
	TOTAL	26,692.1	7.5	57.5	16,693.3	5.9	53.9
	Government	10,337.9	9.2	62.5	5,616.2	4.8	57.9
	Higher Education	8,497.2	12.6	51.0	6,496.1	13.1	48.5
	Enterprises	7,750.8	0.4	57.7	4,518.1	-1.8	56.7
	Private non-profit	106.2	6.9	69.3	62.9	6.6	68.2

Data by Autonomous Community

The Autonomous Communities with the highest expenditure on internal R&D activities in Biotechnology in 2017 were Comunidad de Madrid (29.4% of the total), Cataluña (28.2%) and Andalucía (10.3%).

Expenditure on internal R&D in Biotechnology by Autonomous Communities, by implementing sector

Thousand euros

Year 2017	TOTAL	%	Enterprises	%	Rest of sectors ¹	%
TOTAL	1,693,773	100.0	679,558	100.0	1,014,215	100.0
Andalucía	174,582	10.3	71,987	10.6	102,595	10.1
Aragón	27,104	1.6	13,296	2.0	13,808	1.4
Asturias, Principado de	16,835	1.0	5,114	0.8	11,721	1.2
Balears, Illes	17,329	1.0	.	.	.	.
Canarias	14,449	0.9	2,246	0.3	12,203	1.2
Cantabria	6,091	0.4	.	.	.	.
Castilla y León	54,218	3.2	18,481	2.7	35,738	3.5
Castilla-La Mancha	15,056	0.9	3,355	0.5	11,701	1.2
Cataluña	478,217	28.2	184,649	27.2	293,568	28.9
Comunitat Valenciana	136,543	8.1	49,247	7.2	87,296	8.6
Extremadura	2,286	0.1	985	0.1	1,301	0.1
Galicia	83,910	5.0	18,425	2.7	65,485	6.5
Madrid, Comunidad de	498,321	29.4	210,695	31.0	287,625	28.4
Murcia, Región de	29,842	1.8	9,352	1.4	20,490	2.0
Navarra, Comunidad Foral de	44,517	2.6	.	.	.	.
Pais Vasco	87,112	5.1	56,954	8.4	30,158	3.0
Rioja, La	7,361	0.4	.	.	.	.
Ceuta	..	..	..	..	..	..
Melilla	..	..	..	..	..	..

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

(..) Not available or unexist

(.) Protected data by confidentiality

Expenditure on external R&D activities in Biotechnology

The purchase of R&D in Biotechnology reached 177.9 million euros in 2017. 40.8% of this expenditure was made outside Spain.

By sector, *Companies* registered the highest percentage of total expenditure on external R&D activities, with 83.0%.

Internal R&D activities expenditure on Biotechnology

Thousand euros

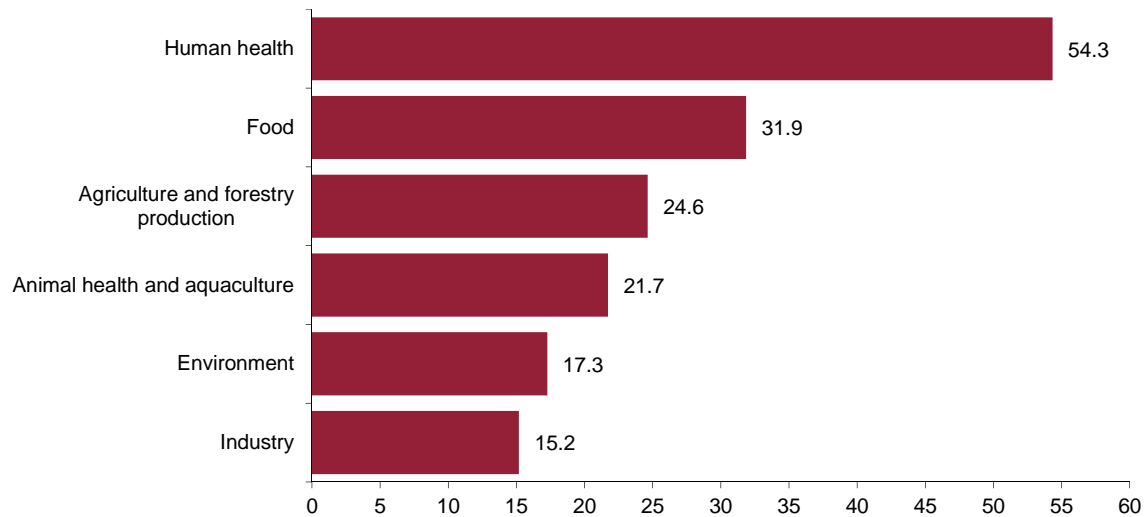
	Total 2017	%	Enterprises	Rest of sectors ¹
Purchases of Biotechnology R&D services	177,895	100.0	147,558	30,337
- Spain	105,337	59.2	76,875	28,462
- Rest of the World	72,558	40.8	70,683	1,875

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

Application areas of Biotechnology

Among the areas of final application of products obtained from the use of the different types of biotechnology, it is worth mentioning *Human health* and *Food*, with 54.3% and 31.9% of the total units, respectively.

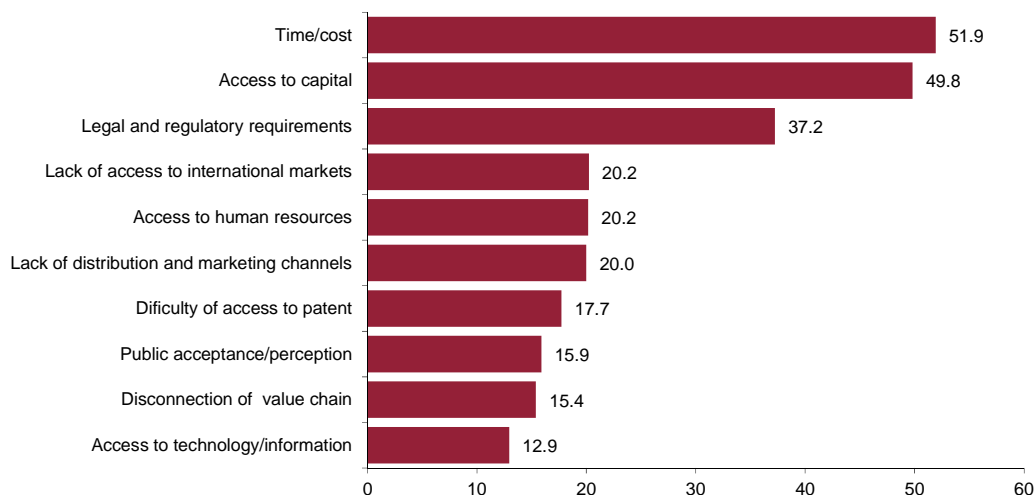
Units with biotechnological activities, according to areas of final application of Biotechnology. Year 2017. Percentage



Obstacles to the development of Biotechnology

The main barriers that, with a high valuation¹, prevented or hindered the progress of development and commercialisation activities of biotechnological products and processes were *Time / cost* and *Access to capital* (with 51.9% and 49.8% respectively).

Obstacles to the development of Biotechnologies. Year 2017. Percentage



¹ The scale is: High, Medium, Low and Doesn't Know

Review and updating of data

The data published today are final. The results are available at INEBase.

Methodological note

The objective of the Statistics on Biotechnology Use is the measurement of the national effort in biotechnology-related activities, so that it is capable of providing 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 economic and human resources appointed to the biotechnology-related productive and investigation activity in Spain.

Type of survey: annual continuous survey.

Population scope: all companies, public bodies, universities or higher education institutions and private non-profit institutions (PNPI) that use Biotechnology in their activity.

Geographical scope: the entire national territory.

Reference period: the calendar year.

Method of Collection: mix of questionnaires by post and online.

For more information you can access the methodology and the standardized methodological report at:

http://www.ine.es/dynqs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176808&menu=metodologia&idp=1254735576669

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