



OVERVIEW OF FOOD ENZYME APPLICATIONS

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Food enzyme applications submitted to the Commission

- *Breakdown by year and by No of applications*

Year	No of applications	Validity Status
2012	5	All valid/3 EFSA opinions
2013	28	27 valid/1 non-suitable/2 EFSA opinions
2014	56	49 valid/6 non-suitable/1 withdrawn
From 01/01/2015 to 11/3/2015	214	*120 submitted/63 valid/29 non-suitable/10 withdrawn/1 after the deadline/1 sent twice

* Data from 1 Feb 2016

Food enzyme applications submitted within the deadline

- Overall figures

Total No of received applications	GMM source	Non-GMM source	Animal/plant source
301	127 (42%)	136	38

Food enzyme applications submitted within the deadline

- Breakdown by EU and non-EU countries

Applications submitted by EU countries			Applications submitted by non-EU countries		
Total No of applications	GMM	Non-GMM and animal/plant sources	Total No of applications	GMM	Non-GMM and animal/plant sources
159*	87	72	131	40	91

*11 applications withdrawn

Food enzyme applications submitted within the deadline

- Breakdown by applicants

Applicants (60)	No of dossiers (300)	% dossiers	GMM-sources (127)	Non-GMM and plant/animal sources (173)
7 applicants	182	61%	105	77
Joint dossiers	22	7%	0	22
Remaining applicants	87	30%	22	65



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Food enzymes obtained from animal/plant sources


Food enzyme	Animal source	Plant source
Rennet (7)	Fourth stomach of ruminants	
Plant coagulant (4)		Cynara cardunculus (thistle)
Peroxidase		Soybean hulls
Beta-amylase		Wheat, Barley and soybean
Trypsin, chymotrypsin, elastase and carboxipeptidase	Porcine pancreatic glands	
Catalase	Pig liver	
Ficin		Fig
Bromelain		Pineapple
Lysozyme	Hen's eggs	
Papain		Papaya
Thrombin	Cattle or pigs blood	
Triacylglycerol Lipase	Pregastric tissues of cattle, goat and sheep	
Lactoperoxidase	Bovine's milk	
Pancreatin	Porcine pancreas and duodenum	



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Applicants' nationality



 Member states of the European Union (2007)
Candidate countries

- TC
- Canada
- China
- India
- Japan
- Korea
- USA

Main enzyme activities and sources

Enzyme activities

Alpha-amylase (32)

Xylanase (24)

Lipases (24)

Beta-galactosidase (12)

Glucoamylase (9)

Asparaginase (5)

Sources

Aspergillus niger (59)

Aspergillus oryzae (25)

Bacillus licheniformis (23)

Bacillus subtilis (21)

Trichoderma reesei (23)

Main food uses

Food uses
Baking processes
Dairy processing
Cereal-based distilled alcoholic beverages
Brewing process and other cereal-based beverages
Flavouring production
Starch processing
Fruit and vegetable processing



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Publication of the list of submitted food enzymes

Annex

Reference No	Food enzyme	Source	Indicative food uses
2012/01	Xylanase	A genetically modified strain of <i>Aspergillus oryzae</i> (strain NZYM-FB)	Starch processing Production of cereal based distilled alcoholic beverages Production of beer and other cereal based beverages Production of bakery products and other cereal based products (e.g. pasta, noodles, snacks)
2012/02	Alpha-amylase	A genetically modified strain of <i>Bacillus licheniformis</i> (strain NZYM-KE)	Starch processing Production of cereal based distilled alcoholic beverages Production of beer and other cereal based beverages Production of bakery products and other cereal based products (e.g. pasta, noodles, snacks) Fruit and vegetable processing
2012/03	Triacylglycerol lipase	A genetically modified strain of <i>Aspergillus oryzae</i> (strain NZYM-LH)	Production of bakery products and other cereal based products (e.g. pasta, noodles, snacks)
2012/04	Alpha-amylase	<i>Aspergillus oryzae</i> (strain NZYM-NA)	Starch processing Production of cereal based distilled alcoholic beverages Production of beer and other cereal based beverages Production of bakery products and other cereal based products (e.g. pasta, noodles, snacks) Fruit and vegetable processing

What's next

- ✓ *Guidance document on food processes in which the FEs are used*
- ✓ *Establishment of the register-Art 17.3 of Regulation (EC) 1332/2008*
 - *When: No legal deadline. It will depend on the quality of the dossiers. 2016?*
 - *Content of the register: Not yet discussed. Included in the agenda for the WG this year*



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European Commission, DG Health and Food Safety website

http://ec.europa.eu/food/safety/food_improvement_agents/enzymes/index_en.htm

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