

**COMMISSION REGULATION (EC) No 1436/98**  
**of 3 July 1998**  
**authorising certain additives in feedingstuffs**  
(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,  
Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 93/113/EC of 14 December 1993 concerning the use and marketing of enzymes, micro-organisms and their preparations in animal nutrition <sup>(1)</sup>, as last amended by Council Directive 97/40/EC <sup>(2)</sup>, and in particular Article 5 thereof,

Whereas Council Directive 70/524/EEC of 23 November 1970 concerning additives in feedingstuffs <sup>(3)</sup>, as last amended by Commission Directive 98/19/EC <sup>(4)</sup>, lays down that new additives or new additive uses may be authorised in line with advances in scientific and technical knowledge;

Whereas Directive 93/113/EC, by derogation from Directive 70/524/EEC, authorises Member States to permit provisionally the use and marketing of enzymes, micro-organisms and their preparations in animal nutrition;

Whereas examination of the dossiers, submitted by the Member States in accordance with Article 3 of Directive 93/113/EC, indicates that a certain number of substances in the groups of enzymes and micro-organisms can be provisionally authorised;

Whereas the Scientific Committee for animal nutrition has delivered a favourable opinion with regard to the harmlessness of these substances;

Whereas the measures provided for in this Regulation are in accordance with the opinion of the Standing Committee on Feedingstuffs,

HAS ADOPTED THIS REGULATION:

*Article 1*

The substances belonging to the group 'enzymes' and listed in Annex I to this Regulation may be authorised as additives in animal nutrition under the conditions laid down in that Annex.

*Article 2*

The substances belonging to the group 'micro-organisms' and listed in Annex II to this Regulation may be authorised as additives in animal nutrition under the conditions laid down in that Annex.

*Article 3*

This Regulation shall enter into force on 1 July 1999.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 3 July 1998.

*For the Commission*

Franz FISCHLER

*Member of the Commission*

<sup>(1)</sup> OJ L 334, 31. 12. 1993, p. 17.

<sup>(2)</sup> OJ L 180, 9. 7. 1997, p. 21.

<sup>(3)</sup> OJ L 270, 14. 12. 1970, p. 1.

<sup>(4)</sup> OJ L 96, 28. 3. 1998, p. 39.

## ANNEX I

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingstuff	Units of activity per kilogram of complete feedingstuff			
2	3-Phytase EC 3.1.3.8	Preparation of 3-phytase produced by <i>Aspergillus oryzae</i> (DSM 10 289) having a minimum activity of: Coated form: 2 500 FYT (°)/g Liquid form: 5 000 FYT/g	Piglets	Four months	250 FYT	1 000 FYT	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingstuff: 500 FYT. 3. For use in compound feed rich in phytates, e.g. containing more than 40 % cereals (corn, barley, oats, wheat, rye, triticale), oilseeds and pulses.	30. 9. 1999	
					400 FYT	1 000 FYT			
			Chickens for fattening	—	200 FYT	1 000 FYT	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingstuff: 500 FYT. 3. For use in compound feed rich in phytates, e.g. containing more than 40 % cereals (corn, barley, oats, wheat, rye, triticale), oilseeds and pulses.	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingstuff	Units of activity per kilogram of complete feedingstuff			
3	Alpha-galactosidase EC 3.2.1.22	Preparation of alpha-galactosidase produced by <i>Aspergillus oryzae</i> (DSM 10 286) having a minimum activity of: Liquid form: 1 000 GALU (°)/g	Chickens for fattening	—	300 GALU	1 000 GALU	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedingstuff: 450 GALU.</p> <p>3. For use in compound feed rich in oligosaccharides, e.g. containing more than 25 % soy meal, cotton seed cakes, peas.</p>	30. 9. 1999	
4	Endo-1,3(4)-beta-glucanase EC 3.2.1.6	Preparation of endo-1,3(4)-beta-glucanase produced by <i>Aspergillus aculeatus</i> (CBS 589.94) having a minimum activity of: Coated form: 50 FBG (°)/g Liquid form: 120 FBG/g	Piglets	Four months	25 FBG	40 FBG	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedingstuff: 25 FBG.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 50 % corn or barley.</p>	30. 9. 1999	
5	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Aspergillus oryzae</i> (DSM 10 287) having a minimum activity of: Coated form: 1 000 FXU (°)/g Liquid form: 650 FXU/ml	Chickens for fattening	—	80 FXU	200 FXU	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedingstuff: 150 FXU.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 50 % wheat.</p>	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingstuff			
			Turkeys for fattening	—	225 FXU	600 FXU	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedingstuff: 225-600 FXU.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 50 % wheat.</p>	30. 9. 1999
			Piglets	Four months	200 FXU	—	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedingstuff: 200 FXU.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 50 % wheat.</p>	30. 9. 1999
6	Endo-1,4-beta-xylanase EC 3.2.1.8 Endo-1,4-beta-glucanase EC 3.2.1.4	Preparation of endo-1,4-beta-xylanase and endo-1,4-beta-glucanase produced by <i>Humicola insolens</i> (DSM 10 442) having a minimum activity of: Coated form: 800 FXU(°)/g 75 FBG(°)/g Microgranulated form: 800 FXU/g 75 FBG/g Liquid form: 550 FXU/ml 50 FBG/ml	Chickens for fattening	—	200 FXU 19 FBG	1 000 FXU 94 FBG	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedingstuff: 400 FXU 38 FBG.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 30 % barley and/or oats, wheat.</p>	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff	Units of activity per kilogram of complete feedstuff			
			Piglets	Four months	240 FXU 22 FBG	1 000 FXU 94 FBG		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 400 FXU 38 FBG. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 30 % barley and/or oats, wheat.	30. 9. 1999
7	Endo-1,4-beta-xylanase EC 3.2.1.8 Endo-1,4-beta-glucanase EC 3.2.1.4	Preparation of endo-1,4-beta-xylanase and endo-1,4-beta-glucanase produced by <i>Aspergillus niger</i> (CBS 600.94) having a minimum activity of: Solid and liquid forms: 12 000 FXU <sup>(*)</sup> /g 5 000 BGU <sup>(*)</sup> /g	Chickens for fattening	—	3 600 FXU 1 500 BGU	12 000 FXU 5 000 BGU		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 3 600-6 000 FXU 1 500-2 500 BGU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 40 % wheat, rye, triticale.	30. 9. 1999
8	Endo-1,4-beta-glucanase EC 3.2.1.4 Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-glucanase and endo-1,4-beta-xylanase produced by <i>Aspergillus niger</i> (CBS 600.94) having a minimum activity of: Solid and liquid forms: 10 000 BGU <sup>(*)</sup> /g 4 000 FXU <sup>(*)</sup> /g	Chickens for fattening	—	3 000 BGU 1 200 FXU	10 000 BGU 4 000 FXU		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 3 000-10 000 BGU 1 200-4 000 FXU. 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans and arabinoxylans), e.g. containing more than 30 % barley.	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingsstuff	Units of activity per kilogram of complete feedingsstuff			
9	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Aspergillus niger</i> (CBS 270.95) having a minimum activity of: Solid form: 28 000 EXU ( <sup>(1)</sup> )/g Liquid form: 14 000 EXU/ml	Chickens for fattening	—	1 400 EXU	—	1. In the directions for use of the ad- ditive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 1 400 EXU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 50 % wheat.	30. 9. 1999	
10	Alpha-amylase EC 3.2.1.1	Preparation of alpha-amylase produced by <i>Bacillus amyloliquefaciens</i> (CBS 360.94) having a minimum activity of: Solid form: 45 000 RAU ( <sup>(2)</sup> )/g Liquid form: 20 000 RAU/ml	Piglets	Four months	1 800 RAU	—	1. In the directions for use of the ad- ditive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 1 800 RAU. 3. For use, exclusively, in compound feed destined for liquid feeding systems, and containing starch-rich feed materials (e.g. containing more than 35 % wheat).	30. 9. 1999	
			Pigs for fattening	—	1 800 RAU	—	1. In the directions for use of the ad- ditive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 1 800 RAU. 3. For use, exclusively, in compound feed destined for liquid feeding systems, and containing starch-rich feed materials (e.g. containing more than 35 % wheat).	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff	Units of activity per kilogram of complete feedstuff			
			Sows	—	1 800 RAU	—		<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedstuff: 1 800 RAU.</p> <p>3. For use, exclusively, in compound feed destined for liquid feeding systems, and containing starch-rich feed materials (e.g. containing more than 35 % wheat).</p>	30. 9. 1999
11	Endo-1,4-beta-glucanase EC 3.2.1.4 Endo-1,3(4)-beta-glucanase EC 3.2.1.6 Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-glucanase, endo-1,3(4)-beta-glucanase and endo-1,4-beta-xylanase produced by <i>Trichoderma longibrachiatum</i> (ATCC 74 252) having a minimum activity of: Endo-1,4-beta-glucanase: 8 000 U/ml <sup>(13)</sup> Endo-1,3(4)-beta-glucanase: 18 000 U/ml <sup>(14)</sup> Endo-1,4-beta-xylanase: 26 000 U/ml <sup>(15)</sup>	Chickens for fattening	—	Endo-1,4-beta-glucanase: 400 U Endo-1,3(4)-beta-glucanase: 900 U Endo-1,4-beta-xylanase: 1 300 U	—		<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedstuff: endo-1,4-beta-glucanase: 400-1 600 U endo-1,3(4)-beta-glucanase: 900-3 600 U endo-1,4-beta-xylanase: 1 300-5 200 U.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 30 % wheat or barley and 10 % rye.</p>	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff	Units of activity per kilogram of complete feedstuff			
12	Endo-1,4-beta-glucanase EC 3.2.1.4	Preparation of endo-1,4-beta-glucanase, endo-1,3(4)-beta-glucanase and endo-1,4-beta-xylanase produced by <i>Trichoderma viride</i> (FERM BP-4447) having a minimum activity of: Endo-1,4-beta-glucanase: 8 000 U/g <sup>(16)</sup> Endo-1,3(4)-beta-glucanase: 18 000 U/g <sup>(17)</sup> Endo-1,4-beta-xylanase: 26 000 U/g <sup>(18)</sup>	Chickens for fattening	—	Endo-1,4-beta-glucanase: 200 U	—	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: endo-1,4-beta-glucanase: 800-1 200 U/g endo-1,3(4)-beta-glucanase: 1 800-2 700 U/g endo-1,4-beta-xylanase: 2 600-3 900 U/g. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylyans and beta-glucans), e.g. containing more than 20 % wheat and 20 % barley, and/or 25 % rye.	30. 9. 1999
	Endo-1,3(4)-beta-glucanase EC 3.2.1.6				Endo-1,3(4)-beta-glucanase: 450 U				
	Endo-1,4-beta-xylanase EC 3.2.1.8		Laying hens	—	Endo-1,4-beta-glucanase: 640 U Endo-1,3(4)-beta-glucanase: 1 440 U Endo-1,4-beta-xylanase: 2 080 U	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: endo-1,4-beta-glucanase: 640-1 280 U endo-1,3(4)-beta-glucanase: 1 440-2 880 U endo-1,4-beta-xylanase: 2 080-4 160 U. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylyans and beta-glucans), e.g. containing more than 20 % wheat and 20 % barley and/or 25 % rye.	30. 9. 1999	



Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff	Units of activity per kilogram of complete feedstuff			
			Turkeys for fattening	—	Endo-1,4-beta-glucanase: 1 200 U Endo-1,3(4)-beta-glucanase: 2 700 U Endo-1,4-beta-xylanase: 3 900 U	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: endo-1,4-beta-glucanase: 1 200 U endo-1,3(4)-beta-glucanase: 2 700 U endo-1,4-beta-xylanase: 3 900 U. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 20 % wheat and 20 % barley and/or 20 % rye.	30. 9. 1999	
13	Endo-1,3(4)-beta-glucanase EC 3.2.1.6 Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,3(4)-beta-glucanase and endo-1,4-beta-xylanase produced by <i>Trichoderma longibrachiatum</i> (CBS 35794) having a minimum activity of: Powder form: 8 000 BGU/g ( <sup>19</sup> ) 11 000 EXU/g ( <sup>20</sup> ) Granulated form: 6 000 BGU/g 8 250 EXU/g Liquid form: 2 000 BGU/ml 2 750 EXU/ml	Chickens for fattening	—	100 BGU 130 EXU	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 100 BGU 130 EXU. 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans and arabinoxylans), e.g. containing more than 30 % wheat and 30 % barley, or 20 % rye.	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingsstuff	Units of activity per kilogram of complete feedingsstuff			
14	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Aspergillus niger</i> (CBS 520.94) having a minimum activity of: Solid form: 600 U/g <sup>(2)</sup> Liquid form: 300 U/ml	Chickens for fattening	—	300 U	—	1. In the directions for use of the ad- ditive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram complete feedingsstuff: 300-600 U. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 50 % wheat.	30. 9. 1999	
15	Endo-1,3(4)-beta- glucanase EC 3.2.1.6	Preparation of endo-1,3(4)-beta- glucanase produced by <i>Trichoderma viride</i> (CBS 517.94) having a minimum activity of: Solid form: 650 U/g <sup>(2)</sup> Liquid form: 325 U/ml	Chickens for fattening	—	325 U	—	1. In the directions for use of the ad- ditive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 325-650 U. 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 50 % barley.	30. 9. 1999	
16	Endo-1,4-beta-glucanase EC 3.2.1.4	Preparation of endo-1,4-beta-glucanase produced by <i>Trichoderma longibrachi- atum</i> (IMI SD 142) having a minimum activity of: Solid form: 1 000 CU/g <sup>(2)</sup> Liquid form: 2 000 CU/ml	Chickens for fattening	—	250 CU	—	1. In the directions for use of the ad- ditive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 500-1 000 CU. 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 40 % barley.	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff			
			Laying hens	—	250 CU	—	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage, life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedstuff: 500-1 000 CU.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 40 % barley.</p>	30. 9. 1999
			Piglets	Four months	250 CU	—	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedstuff: 500-1 000 CU.</p> <p>3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 40 % barley.</p>	30. 9. 1999
			Pigs for fattening	—	250 CU	—	<p>1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.</p> <p>2. Recommended dose per kilogram of complete feedstuff: 500-1 000 CU.</p> <p>3. For use in compound feed rich in non starch polysaccharides (mainly beta-glucans), e.g. containing more than 40 % barley.</p>	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingstuff	Units of activity per kilogram of complete feedingstuff			
17	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Trichoderma longibrachiatum</i> (IMI SD 135) having a minimum activity of: Solid form: 3 000 EPU/g (*) Liquid form: 6 000 EPU/ml	Chickens for fattening	—	750 EPU	—	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingstuff: 1 500-3 000 EPU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 40 % wheat or maize.	30. 9. 1999
			Laying hens	—	750 EPU	—	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingstuff: 1 500-3 000 EPU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 40 % wheat or maize.	30. 9. 1999
			Piglets	Four months	750 EPU	—	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingstuff: 1 500-3 000 EPU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 40 % wheat or maize.	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingsstuff	Units of activity per kilogram of complete feedingsstuff			
			Pigs for fattening	—	750 EPU	—		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting 2. Recommended dose per kilogram of complete feedingsstuff: 1 500-3 000 EPU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 40 % wheat or maize.	30. 9. 1999
18	Endo-1,3(4)-beta-glucanase EC 3.2.1.6	Preparation of endo-1,3(4)-beta-glucanase produced by <i>Aspergillus niger</i> (MUCCL 39199) having a minimum activity of: Solid form: 2 000 AGL/g <sup>(2a)</sup> Liquid form: 500 AGL/ml	Chickens for fattening	—	100 AGL	—		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 100 AGL 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 40 % barley and 20 % wheat.	30. 9. 1999
19	Endo-1,3(4)-beta-glucanase EC 3.2.1.6	Preparation of endo-1,3(4)-beta-glucanase produced by <i>Aspergillus niger</i> (MUCCL 39199) having a minimum activity of: Solid form: 1 500 AGL/g <sup>(2a)</sup> Liquid form: 200 AGL/g	Chickens for fattening	—	25 AGL	—		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingsstuff: 25-100 AGL. 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 50 % barley.	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff	Units of activity per kilogram of complete feedstuff			
20	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Trichoderma longibrachiatum</i> (MUCL 39203) having a minimum activity of: Solid form: 2 000 AXC/g <sup>(27)</sup> Liquid form: 500 AXC/ml	Chickens for fattening	—	100 AXC	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 100 AXC 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylyans), e.g. containing more than 40 % wheat or rye.	30. 9. 1999	
21	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Trichoderma longibrachiatum</i> (MUCL 39203) having a minimum activity of: Solid form: 1 500 AXC/g <sup>(28)</sup> Liquid form: 200 AXC/g	Chickens for fattening	—	25 AXC	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 25-100 AXC. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylyans), e.g. containing more than 50 % wheat.	30. 9. 1999	
22	Endo-1,3(4)-beta-glucanase EC 3.2.1.6	Preparation of endo-1,3(4)-beta-glucanase produced by <i>Trichoderma longibrachiatum</i> (CNCM MA 6-10 W) having a minimum activity of: Solid form: 70 000 BGN/g <sup>(29)</sup> Liquid form: 14 000 BGN/ml	Chickens for fattening	—	1 050 BGN	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 2 800 BGN. 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans), e.g. containing more than 50 % barley.	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedstuff	Units of activity per kilogram of complete feedstuff			
23	Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,4-beta-xylanase produced by <i>Trichoderma longibrachiatum</i> (CNCM MA 6-10 W) having a minimum activity of: Solid form: 70 000 IFP/g <sup>(30)</sup> Liquid form: 7 000 IFP/ml	Chickens for fattening	—	1 050 IFP	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 1 400 IFP. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans), e.g. containing more than 56 % wheat.	30. 9. 1999	
24	Endo-1,4-beta-xylanase EC 3.2.1.8 Endo-1,3(4)-beta-glucanase EC 3.2.1.6	Preparation of endo-1,4-beta-xylanase and endo-1,3(4)-beta-glucanase produced by <i>Aspergillus niger</i> (CNCM I-1517) having a minimum activity of: 28 000 QXU/g <sup>(31)</sup> 140 000 QGU/g <sup>(32)</sup>	Chickens for fattening	—	420 QXU 2 100 QGU	1 120 QXU 5 600 QGU	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedstuff: 560 QXU 2 800 QGU. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 30 % wheat and 30 % barley.	30. 9. 1999	
25	Endo-1,3(4)-beta-glucanase EC 3.2.1.6 Endo-1,4-beta-xylanase EC 3.2.1.8	Preparation of endo-1,3(4)-beta-glucanase and endo-1,4-beta-xylanase produced by <i>Aspergillus niger</i> (NRRL 25541) having a minimum activity of: Endo-1,3(4)-beta-glucanase: 1 100 U/g <sup>(33)</sup> Endo-1,4-beta-xylanase: 1 600 U/g <sup>(34)</sup>	Chickens for fattening	—	Endo-1,3(4)-beta-glucanase: 138 U Endo-1,4-beta-xylanase: 200 U	—	1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended doses per kilogram of complete feedstuff: endo-1,3(4)-beta-glucanase: 138 U endo-1,4-beta-xylanase: 200 U 3. For use in compound feed rich in non-starch polysaccharides (mainly beta-glucans and arabinoxylans), e.g. containing more than 50 % barley or 30 % wheat and 30 % corn.	30. 9. 1999	

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					Units of activity per kilogram of complete feedingstuff	Units of activity per kilogram of complete feedingstuff			
			Laying hens	—	Endo-1,3(4)-beta-glucanase: 138 U Endo-1,4-beta-xylanase: 200 U	—		1. In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. 2. Recommended dose per kilogram of complete feedingstuffs: endo-1,3(4)-beta-glucanase: 138 U endo-1,4-beta-xylanase: 200 U. 3. For use in compound feed rich in non-starch polysaccharides (mainly arabinoxylans and beta-glucans), e.g. containing more than 50 % barley or 30 % wheat and 30 % corn.	30. 9. 1999

(1) One FYT is the amount of enzyme which liberates one micromole of inorganic phosphate per minute from sodium phytate at pH 5,5 and 37 °C.

(2) One GALU is the amount of enzyme which hydrolyses one micromole of p-nitrophenyl-alpha-galactopyranoside per minute at pH 5,0 and 30 °C.

(3) One FBG is the amount of enzyme which liberates one micromole of reducing sugars (glucose equivalents) from barley beta-glucan per minute at pH 5,5 and 37 °C.

(4) One FXU is the amount of enzyme which liberates 7,8 micromoles of reducing sugars (xylose equivalents) from azo-wheat arabinoxylan per minute at pH 6,0 and 50 °C.

(5) One FXU is the amount of enzyme which liberates 3,1 micromoles of reducing sugars (xylose equivalents) from azo-wheat arabinoxylan per minute at pH 6,0 and 50 °C.

(6) One FBG is the amount of enzyme which liberates one micromole of reducing sugars (glucose equivalents) from barley beta-glucan per minute at pH 6,0 and 50 °C.

(7) One FXU is the amount of enzyme which liberates 0,15 micromoles of xylose from azurine-cross-linked xylan per minute at pH 5,0 and 40 °C.

(8) One BGU is the amount of enzyme which liberates 0,15 micromoles of glucose from azurine-cross-linked beta-glucan per minute at pH 5,0 and 40 °C.

(9) One BGU is the amount of enzyme which liberates 0,15 micromoles of glucose from azurine-cross-linked beta-glucan per minute at pH 5,0 and 40 °C.

(10) One FXU is the amount of enzyme which liberates 0,15 micromoles of xylose from azurine-cross-linked xylan per minute at pH 5,0 and 40 °C.

(11) One EXU is the amount of enzyme which liberates one micromole of reducing sugars (xylose equivalents) from arabinoxylan per minute at pH 3,5 and 55 °C.

(12) One RAU is the amount of enzyme which converts 1 mg of soluble starch into a product having an equal absorption at 620 nm after reaction with iodine, per minute at pH 6,6 and 30 °C.

(13) One U is the amount of enzyme which liberates 0,1 micromoles of glucose from carboxymethylcellulose per minute at pH 5,0 and 40 °C.

(14) One U is the amount of enzyme which liberates 0,1 micromoles of glucose from barley beta-glucan per minute at pH 5,0 and 40 °C.

(15) One U is the amount of enzyme which liberates 0,1 micromoles of glucose from oat spelt xylan per minute at pH 5,0 and 40 °C.

(16) One U is the amount of enzyme which liberates 0,1 micromoles of glucose from carboxymethylcellulose per minute at pH 5,0 and 40 °C.

(17) One U is the amount of enzyme which liberates 0,1 micromoles of glucose from barley beta-glucan per minute at pH 5,0 and 40 °C.

(18) One U is the amount of enzyme which liberates 0,1 micromoles of glucose from oat spelt xylan per minute at pH 5,0 and 40 °C.

(19) One BGU is the amount of enzyme which liberates 0,278 micromoles of reducing sugars (glucose equivalents) from barley beta-glucan per minute at pH 3,5 and 40 °C.

(20) One EXU is the amount of enzyme which liberates one micromole of reducing sugars (xylose equivalents) from wheat arabinoxylan per minute at pH 3,5 and 55 °C.

(21) One U is the amount of enzyme which liberates one micromole of xylose from birchwood xylan per minute at pH 5,3 and 50 °C.

(22) One U is the amount of enzyme which liberates one micromole of reducing sugars (glucose equivalents) from barley beta-glucan per minute at pH 5,0 and 30 °C.

(23) One CU is the amount of enzyme which liberates 0,128 micromoles of reducing sugars (glucose equivalents) from barley beta-glucan per minute at pH 4,5 and 30 °C.

(24) One EPU is the amount of enzyme which liberates 0,0083 micromoles of reducing sugars (xylose equivalents) from oat spelt xylan per minute at pH 4,7 and 30 °C.

(25) One AGL is the amount of enzyme which liberates 5,55 micromoles of reducing sugars (maltose equivalents) from barley beta-glucan per minute at pH 4,6 and 30 °C.

(26) One AGL is the amount of enzyme which liberates 5,55 micromoles of reducing sugars (maltose equivalents) from barley beta-glucan per minute at pH 4,6 and 30 °C.

(27) One AXG is the amount of enzyme which liberates 17,2 micromoles of reducing sugars (maltose equivalents) from oat xylan per minute at pH 4,7 and 30 °C.

(28) One AXG is the amount of enzyme which liberates 17,2 micromoles of reducing sugars (maltose equivalents) from oat xylan per minute at pH 4,7 and 30 °C.

(29) One BGN is the amount of enzyme which liberates one micromole of reducing sugar (glucose equivalents) from barley beta-glucan per minute at pH 4,8 and 50 °C.



- (<sup>20</sup>) One IFP is the amount of enzyme which liberates one micromole of reducing sugars (xylose equivalents) from oat xylan per minute at pH 4,8 and 50 °C.
- (<sup>21</sup>) One QXU is the amount of enzyme which liberates one micromole of reducing sugars (xylose equivalents) from oat xylan per minute at pH 5,1 and 50 °C.
- (<sup>22</sup>) One QGU is the amount of enzyme which liberates one micromole of reducing sugars (glucose equivalents) from barley beta-glucan per minute at pH 4,8 and 50 °C.
- (<sup>23</sup>) One U is the amount of enzyme which liberates one micromole of reducing sugars (glucose equivalents) from oat beta-glucan per minute at pH 4,0 and 30 °C.
- (<sup>24</sup>) One U is the amount of enzyme which liberates one micromole of reducing sugars (xylose equivalents) from oat xylan per minute at pH 4,0 and 30 °C.

## ANNEX II

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation	
					CFU/kg of complete feedingstuff					
3	<i>Saccharomyces cerevisiae</i> NCYC Sc 47	Preparation of <i>Saccharomyces cerevisiae</i> containing a minimum $5 \times 10^9$ CFU/g additive	Rabbits for fattening	—	$2,5 \times 10^9$	$5 \times 10^9$	In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. May be used in compound feed containing the permitted coccidiostat: meticlorpindol.	30. 9. 1999		
			Sows	—	$5 \times 10^9$	$2,5 \times 10^{10}$			In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999
			Piglets	Four months	$5 \times 10^9$	$1 \times 10^{10}$				
4	<i>Bacillus cereus</i> , ATCC 14 893, CIP 5832	Preparation of <i>Bacillus cereus</i> , ATCC 14 893, CIP 5832 containing a minimum $10^{10}$ CFU/g additive	Piglets	Four months	$5 \times 10^8$	$1 \times 10^{10}$	In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999		
			Pigs for fattening	—	$2 \times 10^8$	$1 \times 10^9$			In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999
			Sows	15 days before farrowing and during lactation	$8,5 \times 10^8$	$1,2 \times 10^9$				

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					CFU/kg of complete feedingstuff	CFU/kg of complete feedingstuff			
			Calves	16 weeks	$1 \times 10^9$	$1,2 \times 10^9$		In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999
			Chickens for fattening	—	$2 \times 10^8$	$1 \times 10^9$		In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. May be used in compound feed containing the permitted coccidiostats: Amprolium, Halofuginone, Lasalocid sodium, Maduramicin ammonium, Monensin sodium, Narasin, Salinomycin sodium, Meticlorpindol, Diclazuril.	30. 9. 1999
			Turkeys for fattening	26 weeks	$2 \times 10^8$	$1 \times 10^9$		In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. May be used in compound feed containing the permitted coccidiostats: Amprolium, Halofuginone, Meticlorpindol/Methylbenzoquate, Diclazuril, Nifursol.	30. 9. 1999
5	<i>Saccharomyces cerevisiae</i> CBS 493.94	Preparation of <i>Saccharomyces cerevisiae</i> containing a minimum of: $1 \times 10^8$ CFU/g additive	Calves	Six months	$2 \times 10^8$	$2 \times 10^9$		In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999
6	<i>Saccharomyces cerevisiae</i> CNCM I-1079	Preparation of <i>Saccharomyces cerevisiae</i> containing a minimum of: $2 \times 10^{10}$ CFU/g additive	Sows	—	$2 \times 10^9$	$1 \times 10^{10}$		In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999
			Piglets	Four months	$6 \times 10^9$	$3 \times 10^{10}$		In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting.	30. 9. 1999

Number	Additive	Chemical formula, description	Species or category of animal	Maximum age	Minimum content		Maximum content	Other provisions	Period of authorisation
					CFU/kg of complete feedingstuff	CFU/kg of complete feedingstuff			
7	<i>Saccharomyces cerevisiae</i> CNCM I-1077	Preparation of <i>Saccharomyces cerevisiae</i> containing a minimum of: $2 \times 10^{10}$ CFU/g additive	Dairy cows	—	$5,5 \times 10^8$	$2,1 \times 10^9$	In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. The quantity of <i>Saccharomyces cerevisiae</i> in the daily ration must not exceed $8,4 \times 10^9$ CFU for 100 kg body weight. Add $1,8 \times 10^9$ CFU for each additional 100 kg body weight.	30. 9. 1999	
			Cattle for fattening	—	$1 \times 10^9$	$1,5 \times 10^9$	In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. The quantity of <i>Saccharomyces cerevisiae</i> in the daily ration must not exceed $4,6 \times 10^9$ CFU for 100 kg body weight. Add $2 \times 10^9$ CFU for each additional 100 kg body weight.	30. 9. 1999	
8	<i>Enterococcus faecium</i> ATCC 53519 <i>Enterococcus faecium</i> ATCC 55593 (In a 1/1 ratio)	Mixture of: encapsulated <i>Enterococcus faecium</i> ATCC 53519 and encapsulated <i>Enterococcus faecium</i> ATCC 55593 containing a minimum of $2 \times 10^8$ CFU/g of the additive (i.e. a minimum of $1 \times 10^8$ CFU/g of each bacterium)	Chickens for fattening	—	$1 \times 10^8$	$1 \times 10^8$	In the directions for use of the additive and premixture, indicate the storage temperature, storage life, and stability to pelleting. May be used in compound feed containing the permitted coccidiostats: Amprolium, Decoquinat, Halofuginone, Lasalocid sodium, Maduramicin ammonium, Monensin sodium, Narasin, Nicarbazine, Narasin/Nicarbazin, Salinomycin sodium.	30. 9. 1999	