

COMMISSION IMPLEMENTING REGULATION (EU) 2022/385

of 7 March 2022

correcting Implementing Regulation (EU) 2021/421 concerning the authorisation of tincture derived from *Artemisia vulgaris* L. (mugwort tincture) as a feed additive for all animal species, Implementing Regulation (EU) 2021/485 concerning the authorisation as feed additives of ginger essential oil from *Zingiber officinale* Roscoe for all animal species, ginger oleoresin from *Zingiber officinale* Roscoe for chickens for fattening, laying hens, turkeys for fattening, piglets, pigs for fattening, sows, dairy cows, veal calves (milk replacers), cattle for fattening, sheep, goats, horses, rabbits, fish and pets and ginger tincture from *Zingiber officinale* Roscoe for horses and dogs and Implementing Regulation (EU) 2021/551 concerning the authorisation of turmeric extract, turmeric oil, turmeric oleoresin from *Curcuma longa* L. rhizome as feed additives for all animal species and turmeric tincture from *Curcuma longa* L. rhizome as a feed additive for horses and dogs

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition ⁽¹⁾, and in particular Article 9(2) thereof,

Whereas:

- (1) The use of tincture derived from *Artemisia vulgaris* L. (mugwort tincture) as a feed additive for all animal species was authorised by Commission Implementing Regulation (EU) 2021/421 ⁽²⁾ for a 10-year period.
- (2) The use of ginger essential oil from *Zingiber officinale* Roscoe as a feed additive for all animal species, ginger oleoresin from *Zingiber officinale* Roscoe as a feed additive for chickens for fattening, laying hens, turkeys for fattening, piglets, pigs for fattening, sows, dairy cows, veal calves (milk replacers), cattle for fattening, sheep, goats, horses, rabbits, fish and pets and ginger tincture from *Zingiber officinale* Roscoe as a feed additive for horses and dogs was authorised by Commission Implementing Regulation (EU) 2021/485 ⁽³⁾ for a 10-year period.
- (3) The use of turmeric extract, turmeric oil, turmeric oleoresin from *Curcuma longa* L. rhizome as feed additives for all animal species and turmeric tincture from *Curcuma longa* L. rhizome as a feed additive for horses and dogs was authorised by Commission Implementing Regulation (EU) 2021/551 ⁽⁴⁾ for a 10-year period.
- (4) In the Annexes to Implementing Regulations (EU) 2021/421, (EU) 2021/485 and (EU) 2021/551, an incorrect provision for the labelling of the recommended maximum content of the active substances in premixtures was inserted in the column 'Other provisions'. That provision should only apply to the additives themselves.

⁽¹⁾ OJ L 268, 18.10.2003, p. 29.

⁽²⁾ Commission Implementing Regulation (EU) 2021/421 of 9 March 2021 concerning the authorisation of tincture derived from *Artemisia vulgaris* L. (mugwort tincture) as a feed additive for all animal species (OJ L 83, 10.3.2021, p. 21).

⁽³⁾ Commission Implementing Regulation (EU) 2021/485 of 22 March 2021 concerning the authorisation as feed additives of ginger essential oil from *Zingiber officinale* Roscoe for all animal species, ginger oleoresin from *Zingiber officinale* Roscoe for chickens for fattening, laying hens, turkeys for fattening, piglets, pigs for fattening, sows, dairy cows, veal calves (milk replacers), cattle for fattening, sheep, goats, horses, rabbits, fish and pets and ginger tincture from *Zingiber officinale* Roscoe for horses and dogs (OJ L 100, 23.3.2021, p. 3).

⁽⁴⁾ Commission Implementing Regulation (EU) 2021/551 of 30 March 2021 concerning the authorisation of turmeric extract, turmeric oil, turmeric oleoresin from *Curcuma longa* L. rhizome as feed additives for all animal species and turmeric tincture from *Curcuma longa* L. rhizome as a feed additive for horses and dogs (OJ L 111, 31.3.2021, p. 3).

- (5) Implementing Regulations (EU) 2021/421, (EU) 2021/485 and (EU) 2021/551 should therefore be corrected accordingly. For the sake of clarity, it is appropriate to replace the whole Annex to those Implementing Regulations.
- (6) In order to allow feed business operators to adapt the labelling of the additives and feed containing them to the corrected terms of authorisation, a transitional period should be provided for as regards the placing on the market of those products.
- (7) In order to preserve the legitimate expectations of the interested parties in relation to the terms of the authorisation of these additives, this Regulation should enter into force as a matter of urgency.
- (8) The measures provided for in this Regulation are in accordance with the opinion of the Standing Committee on Plants, Animals, Food and Feed,

HAS ADOPTED THIS REGULATION:

Article 1

The Annex to Implementing Regulation (EU) 2021/421 is replaced by Annex I to this Regulation.

Article 2

The Annex to Implementing Regulation (EU) 2021/485 is replaced by Annex II to this Regulation.

Article 3

The Annex to Implementing Regulation (EU) 2021/551 is replaced by Annex III to this Regulation.

Article 4

The substances specified in Annexes I, II and III and premixtures containing those substances, which are produced and labelled before 9 September 2022 in accordance with the rules applicable before 9 March 2022 may continue to be placed on the market until the existing stocks are exhausted.

Article 5

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

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

Done at Brussels, 7 March 2022.

For the Commission
The President
Ursula VON DER LEYEN

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ANNEX I

Identification number of the additive	Name of the holder of authorisation	Additive	Composition, chemical formula, description, analytical method.	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	End of period of authorisation
						mg active substance/kg of complete feed with a moisture content of 12 %			

Category: Sensory additives**Functional group: Flavouring compounds**

2b72-t	-	Mugwort tincture	<p><i>Additive composition</i></p> <p>Tincture produced from the fragmented aerial parts of <i>Artemisia vulgaris</i> L.</p> <p><i>Characterisation of the active substance</i></p> <p>Tincture produced from the fragmented aerial parts of <i>Artemisia vulgaris</i> L by extended extraction with a water/ethanol mixture as defined by the Council of Europe (1). The specifications of the active substance are:</p> <p>Dry matter: 1,4-1,9 %</p> <p>Ash: 0,2-0,5 %</p> <p>Organic fraction: 1,13-1,65 %, of which</p> <ul style="list-style-type: none"> — Total polyphenols: 0,05-0,2 % — Phenolic acids 0,02-0,11 % — Chlorogenic acid: 0,0028-0,0136 % — α- and β-thujone: < 0,005 % — 1,8-cineole: 0,005 % — Solvent (ethanol): 98,1-98,6 % 	All animal species	-	-	-	<ol style="list-style-type: none"> 1. The additive shall be incorporated into the feed in the form of a premixture. 2. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated. 3. On the label of the additive the following shall be indicated: 'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of 12 %: 400 mg/kg'. 4. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture where the use level on the label of the premixture would result in exceeding the level referred to in point 3. 5. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal 	30.3.2031
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		<p>CoE number: 72</p> <p>Liquid form</p> <p><i>Analytical method</i> ⁽²⁾</p> <p>For the characterisation of the feed additive (Mugwort tincture):</p> <ul style="list-style-type: none"> — gravimetric method for the determination of loss on drying and the ash content — spectrophotometric method for the determination of total polyphenols content — high performance thin layer chromatography (HPTLC) method for the determination of total phenolic acids, chlorogenic acid, alpha- and beta- thujones and eucalyptol. 					<p>contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
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⁽¹⁾ Natural sources of flavourings – Report No 2 (2007).

⁽²⁾ Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

ANNEX II

Identification number of the additive	Name of the holder of authorisation	Additive	Composition, chemical formula, description, analytical method.	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	End of period of authorisation
						mg active substance/kg of complete feed with a moisture content of 12 %			

Category: Sensory additives**Functional group: Flavouring compounds**

2b489-- eo	-	Ginger essential oil	<p><i>Additive composition</i></p> <p>Essential oil derived by steam distillation from the dried rhizomes of <i>Zingiber officinale</i> Roscoe.</p> <p><i>Characterisation of the active substance</i></p> <p>Essential oil derived by steam distillation from the dried rhizomes of <i>Zingiber officinale</i> Roscoe as defined by the Council of Europe ⁽¹⁾.</p> <p>— α-zingiberene: 29-40 %</p> <p>— β-sesquiphellandrene: 8-14 %</p> <p>— α-curcumene: 5-12 %</p> <p>— α-farnesene: 4-10 %</p> <p>— camphene: 2-10 %</p> <p>— β-bisabolene: 2-9 %</p> <p>CAS number: 8007-08-7</p> <p>Einecs number: 283-634-2</p> <p>FEMA number: 2522</p> <p>CoE number: 489</p> <p>Liquid form</p> <p><i>Analytical method</i> ⁽²⁾</p>	All animal species	-	-	-	<ol style="list-style-type: none"> The additive shall be incorporated into the feed in the form of a premixture. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated. On the label of the additive the following shall be indicated: 'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of 12 %: — veal calves (milk replacer): 80 mg; — other species or categories of animals: 20 mg'. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture where the use level on the label of the premixture would result in exceeding the level referred to in point 3. 	12.4.2031
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			<p>For the quantification of alpha-zingiberene, beta-sesquiphellandrene and ar-curcumene in the feed additive:</p> <p>— Gas chromatography coupled to mass spectrometry (GC-MS) (full scan mode) using Retention Time Locking (RTL) methodology (or standard substances of the phytochemical markers) with (or without) gas chromatography coupled to flame ionisation detection (GC-FID) based on the ISO 11024 standard method.</p>					<p>5. The mixture of ginger essential oil with other authorised additives obtained from <i>Zingiber officinale</i> Roscoe shall be not be allowed in feedingstuffs.</p> <p>6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
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(¹) Natural sources of flavourings – Report No 2 (2007).

(²) Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

Identification number of the additive	Name of the holder of authorisation	Additive	Composition, chemical formula, description, analytical method.	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	End of period of authorisation
						mg active substance/kg of complete feed with a moisture content of 12 %			

Category: Sensory additives

Functional group: Flavouring compounds

2b489--or	-	Ginger oleoresin	<p><i>Additive composition</i></p> <p>Ginger oleoresin obtained by steam distillation and solvent extraction of dried rhizomes of <i>Zingiber officinale</i> Roscoe.</p>	<p>Chickens for fattening</p> <p>Laying hens</p>	-	-	-	<p>1. The additive shall be incorporated into the feed in the form of a premixture.</p> <p>2. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated.</p>	12.4.2031
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		<p><i>Characterisation of the active substance</i></p> <p>Ginger oleoresin obtained by steam distillation and solvent extraction of dried rhizomes of <i>Zingiber officinale</i> Roscoe as defined by the Council of Europe (1).</p> <p>Essential oil: 25-30 (w/w)</p> <p>Total gingerols: 0,5-8 % (w/w)</p> <ul style="list-style-type: none"> — 6-Gingerol — 8-Gingerol — 10-Gingerol <p>Total shogaols: 3-6 % (w/w)</p> <ul style="list-style-type: none"> — 6-Shogaol — 8-Shogaol <p>Humidity and volatiles: 25-30 (w/w)</p> <p>CoE number: 489</p> <p>Liquid form</p> <p><i>Analytical method (2)</i></p> <p>For the quantification of the phytochemical markers: total gingerols and total shogaols in the feed additive (ginger oleoresin):</p> <ul style="list-style-type: none"> — High performance liquid chromatography (HPLC) with spectrophotometric (UV) detection – ISO 13685 	<p>Turkeys for fattening</p> <p>Piglets</p> <p>Pigs for fattening</p> <p>Sows</p> <p>Dairy cows</p> <p>Veal calves (milk replacers)</p> <p>Cattle for fattening</p> <p>Sheep and goats</p> <p>Horses</p> <p>Rabbits</p> <p>Fish</p> <p>Pets</p>				<p>3. On the label of the additive the following shall be indicated:</p> <p>'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of 12 % and for milk replacers with a moisture content of 5,5 %:</p> <ul style="list-style-type: none"> — chickens for fattening: 5 mg; — laying hens and rabbits: 7 mg; — turkeys for fattening: 6 mg; — piglets: 8 mg; — pigs for fattening: 10 mg; — sows: 13 mg; — dairy cows: 12 mg; — veal calves (milk replacers): 21 mg; — cattle for fattening: 19 mg; — sheep, goats, horses and fish: 20 mg; — pets: 1 mg'. <p>4. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture where the use level on the label of the premixture would result in exceeding the level referred to in point 3.</p> <p>5. The mixture of ginger oleoresin with other authorised additives obtained from <i>Zingiber officinale</i> Roscoe shall not be allowed in feedingstuffs.</p>	
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										6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.
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(¹) Natural sources of flavourings – Report No 2 (2007).

(²) Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

Identification number of the additive	Name of the holder of authorisation	Additive	Composition, chemical formula, description, analytical method.	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	End of period of authorisation
						mg active substance/kg of complete feed with a moisture content of 12 %			

Category: Sensory additives

Functional group: Flavouring compounds

2b489-t	-	Ginger tincture	<p><i>Additive composition</i></p> <p>Ginger tincture obtained by extraction of ground dried rhizomes of <i>Zingiber officinale</i> Roscoe using an ethanol/water mixture.</p> <p><i>Characterisation of the active substance</i></p> <p>Ginger tincture is obtained by extraction of ground dried rhizomes of <i>Zingiber officinale</i> Roscoe using an ethanol/water mixture as defined by the Council of Europe (¹).</p>	Horses Dogs	-	-	-	<ol style="list-style-type: none"> 1. The additive shall be incorporated into the feed in the form of a premixture. 2. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated. 3. On the label of the additive the following shall be indicated: 	12.4.2031
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		<p>Solvent (ethanol/water, 90/10): 97-98 % (w/w)</p> <p>Dry matter: 2-3 % (w/w)</p> <p>Total gingerols: 0,14-0,11 % (w/w)</p> <ul style="list-style-type: none"> — 6-Gingerol — 8-Gingerol — 10-Gingerol <p>Total shogaols: 0,043-0,031 % (w/w)</p> <ul style="list-style-type: none"> — 6 Shogaol — 8-Shogaol <p><i>Analytical method</i> ⁽²⁾</p> <p>For the quantification of the phytochemical markers: total gingerols and total shogaols in the feed additive (ginger tincture):</p> <ul style="list-style-type: none"> — High performance liquid chromatography (HPLC) with spectrophotometric (UV) detection – ISO 13685 					<p>'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of 12 %:</p> <ul style="list-style-type: none"> — Horses 1,58 mL — Dogs 1,81 mL. <p>4. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture where the use level on the label of the premixture would result in exceeding the level referred to in point 3.</p> <p>5. The mixture of ginger tincture with other authorised additives obtained from <i>Zingiber officinale</i> Roscoe shall be not be allowed in feedingstuffs.</p> <p>6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
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⁽¹⁾ Natural sources of flavourings – Report No 2 (2007).

⁽²⁾ Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

ANNEX III

Identification number of the additive	Name of the holder of authorisation	Additive	Composition, chemical formula, description, analytical method.	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	End of period of authorisation
						mg active substance/kg of complete feed with a moisture content of 12 %			

Category: Sensory additives**Functional group: Flavouring compounds**

2b163-- eo	-	Turmeric essential oil	<p><i>Additive composition</i></p> <p>Essential oil derived by steam distillation from the dried rhizomes of <i>Curcuma longa</i> L.</p> <p><i>Characterisation of the active substance</i></p> <p>Essential oil derived by steam distillation from the dried rhizomes of <i>Curcuma longa</i> L. as defined by the Council of Europe ⁽¹⁾:</p> <ul style="list-style-type: none"> — ar-Turmerone: 40-60 % — β-Turmerone (curlone): 5-15 % — ar-Curcumene: 3-6 % — β-Sesquiphellandrene: 3-6 % — a-Zingiberene: 1-5 % — (E)-Atlantone: 2-4 % <p>CAS number: 8024-37-1 ⁽²⁾</p> <p>Einecs number: 283-882-1¹</p> <p>FEMA number: 3085¹</p> <p>CoE number: 163</p> <p>Liquid form</p> <p><i>Analytical method</i> ⁽³⁾</p>	All animal species	-	-	-	<ol style="list-style-type: none"> 1. The additive shall be incorporated into the feed in the form of a premixture. 2. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated. 3. On the label of the additive the following shall be indicated: 'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of 12 % or milk replacers with a moisture content of 5,5 %: — all animal species except veal calves: 20 mg — veal calves: 80 mg (milk replacers)'. 4. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture, if the content of the active substance in complete feedingstuff specified in point 3 is exceeded. 	20.4.2031
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			<p>For the quantification of the phytochemical markers: ar-turmerone and beta-turmerone in the feed additive (turmeric oil):</p> <p>— Gas chromatography coupled to mass spectrometry (GC-MS) (full scan mode) using Retention Time Locking (RTL) methodology (or standard substances of the phytochemical markers) with (or without) gas chromatography coupled to flame ionisation detection (GC-FID) based on the ISO 11024 standard method</p>					<p>5. The mixture of Turmeric essential oil with other authorised additives obtained from <i>Curcuma longa</i> L. shall be not be allowed in feedingstuffs.</p> <p>6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
2b163-- or	-	Turmeric oleoresin	<p><i>Additive composition</i></p> <p>Oleoresin obtained by solvent extraction of dried rhizomes of <i>Curcuma longa</i> L.</p> <p><i>Characterisation of the active substance</i></p> <p>Oleoresin obtained by solvent extraction of dried rhizomes of <i>Curcuma longa</i> L. as defined by the Council of Europe (*).</p> <p>Essential oil: 30-33 % (w/w)</p> <p>Total curcuminoids: 20-35 % (w/w)</p> <p>— Curcumin (I): 16-21 % (w/w)</p> <p>— Desmethoxycurcumin (II): 4-6 % (w/w)</p> <p>— Bis-desmethoxycurcumin (III): 3-5 % (w/w).</p> <p>Humidity: 12-30 % (w/w)</p>	All animal species	-	-	-	<p>1. The additive shall be incorporated into the feed in the form of a premixture.</p> <p>2. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated.</p> <p>3. On the label of the additive the following shall be indicated: ‘Recommended maximum content of the active substance per kg complete feedingstuff with a moisture content of 12 %: — Chicken and laying hens: 30 mg — Other animal species: 5 mg’.</p>	20.4.2031

			<p><i>Analytical method</i> (5)</p> <p>For the quantification of the phytochemical marker (total curcuminoids) in the feed additive (turmeric oleoresin):</p> <p>— Spectrophotometry – FAO JECFA Combined Compendium of Food Additive Specifications, 'Turmeric Oleoresin', monograph No 1 (2006)</p>					<p>4. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture, if the content of the active substance in complete feedingstuff specified in point 3 is exceeded.</p> <p>5. The mixture of Turmeric oleoresin with other authorised additives obtained from <i>Curcuma longa</i> L. shall be not be allowed in feedingstuffs.</p> <p>6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
2b163-- ex	-	Turmeric extract	<p><i>Additive composition</i></p> <p>Extract of dried rhizomes <i>Curcuma longa</i> L. using organic solvents.</p> <p><i>Characterisation of the active substance</i></p> <p>Extract of dried rhizomes <i>Curcuma longa</i> L. using organic solvents as defined by the Council of Europe (6).</p> <p>Total curcuminoids: ≥ 90 % (w/w)</p> <p>— Curcumin (I): 74-79 % (w/w)</p> <p>— Desmethoxycurcumin (II): 15-19 % (w/w)</p>	All animal species	-	-	-	<p>1. The additive shall be incorporated into the feed in the form of a premixture.</p> <p>2. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated.</p> <p>3. On the label of the additive the following shall be indicated: 'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of</p>	20.4.2031

		<p>— Bis-desmethoxycurcumin (III): 2-5 % (w/w)</p> <p>Water: 0,30-1,7 % (w/w)</p> <p>Einecs number: 283-882-1⁴</p> <p>FEMA number: 3086⁴</p> <p>CAS number: 8024-37-1⁴</p> <p>CoE number: 163</p> <p>Solid form (powder)</p> <p><i>Analytical method</i> ⁽⁷⁾</p> <p>For the quantification of the phytochemical marker (total curcuminoids) in the feed additive (turmeric extract):</p> <p>— Spectrophotometry – FAO JECFA Combined Compendium of Food Additive Specifications, ‘Curcumin’, monograph No 1 (2006)</p>					<p>12 % and milk replacers with a moisture content of 5,5 %: all species and veal calves (milk replacers): 15 mg’.</p> <p>4. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture, if the content of the active substance in complete feedingstuff specified in point 3 is exceeded.</p> <p>5. The mixture of Turmeric extract with other authorised additives obtained from <i>Curcuma longa</i> L. shall be not be allowed in feedingstuffs.</p> <p>6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
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⁽¹⁾ Natural sources of flavourings – Report No 2 (2007).

⁽²⁾ The same identifier applies indiscriminately to different kinds of extracts and derivatives from *Curcuma longa* such as turmeric essential oil, turmeric extract and turmeric tincture.

⁽³⁾ Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

⁽⁴⁾ Natural sources of flavourings – Report No 2 (2007).

⁽⁵⁾ Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

⁽⁶⁾ Natural sources of flavourings – Report No 2 (2007).

⁽⁷⁾ Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>

Identification number of the additive	Name of the holder of authorisation	Additive	Composition, chemical formula, description, analytical method.	Species or category of animal	Maximum age	Minimum content	Maximum content	Other provisions	End of period of authorisation
						mL active substance/kg of complete feed with a moisture content of 12 %			
Category: Sensory additives									
Functional group: Flavouring compounds									
2b163-t	-	Turmeric tincture	<p><i>Additive composition</i></p> <p>Tincture produced by extraction of ground-dried rhizomes of <i>Curcuma longa</i> L. using a water/ethanol mixture (55/45 % v/v).</p> <p><i>Characterisation of the active substance</i></p> <p>Tincture produced by extraction of ground-dried rhizomes of <i>Curcuma longa</i> L. using a water/ethanol mixture (55/45 % v/v), as defined by the Council of Europe (1).</p> <p>Phenols (as gallic acid equivalent): 1 000-1 500 µg/mL</p> <p>Total curcuminoids (2) (as curcumin): 0,04 to 0,09 % (w/v)</p> <p>Curcumin (I): 83-182 µg/mL</p> <p>Desmethoxycurcumin (II): 80-175 µg/mL</p> <p>Bis-desmethoxycurcumin (III): 139-224 µg/mL</p> <p>Essential oil: 1 176-1 537 µg/mL</p> <p>Dry matter: 2,62-3,18 % (w/w)</p> <p>Solvent (water/ethanol, 55/45): 96-97,5 % (w/w)</p> <p>CoE number:163</p> <p>Liquid form</p>	Horses Dogs	-	-	-	<ol style="list-style-type: none"> The additive shall be incorporated into the feed in the form of a premixture. In the directions for use of the additive and premixtures, the storage conditions and stability to heat treatment shall be indicated. On the label of the additive the following shall be indicated: 'Recommended maximum content of the active substance per kg of complete feedingstuff with a moisture content of 12 %: — horses: 0,75 mL; — dogs: 0,05 mL'. The functional group, the identification number, the name and the added amount of the active substance shall be indicated on the label of the premixture, if the content of the active substance in complete feedingstuff specified in point 3 is exceeded. The mixture of Turmeric tincture with other authorised additives obtained from <i>Curcuma longa</i> L. shall be not be allowed in feedingstuffs. 	20.4.2031

			<p><i>Analytical method</i> ⁽³⁾</p> <p>For the quantification of the phytochemical marker (total curcuminoids) in the feed additive (turmeric tincture):</p> <p>— Spectrophotometry (based on European Pharmacopeia monograph 'Turmeric Javanese' (01/2008:1441))</p>					<p>6. For users of the additive and premixtures, feed business operators shall establish operational procedures and organisational measures to address potential risks by inhalation, dermal contact or eye contact. Where those risks cannot be eliminated or reduced to a minimum by such procedures and measures, the additive and premixtures shall be used with personal protective equipment, including breathing protection, safety glasses and gloves.</p>	
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⁽¹⁾ Natural sources of flavourings – Report No 2 (2007).

⁽²⁾ Determined by spectrophotometry as dicinnamoyl methane derivatives.

⁽³⁾ Details of the analytical methods are available at the following address of the Reference Laboratory: <https://ec.europa.eu/jrc/en/eurl/feed-additives/evaluation-reports>