



**SUBSTANCES WITHOUT MAXIMUM RESIDUE LIMITS
USED IN EQUINE MEDICINE**

Foreword:

No maximum residue limits (MRLs) have been established for many of the substances used in equine medicine. These substances are in some cases authorized for use in companion animal species; in most cases however they are only licensed for use in humans.

Members

- Austria
- Belgium
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- FYROM
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovak Republic
- Slovenia
- Spain
- Sweden
- Switzerland
- United Kingdom
- Yugoslavia

The veterinary use of substances without MRLs in horses is however forbidden under EU legislation and no product should be authorized for use in horses if it contains a substance without MRLs.

FVE did an enquiry to collect information on the type of substances used in equine medicine, on their frequency of use and on how essential these substances are for equine practitioners.

Methodology:

A list of substances without MRLs used in equine medicine was drawn up with the help of equine practitioners. Practitioners were then asked, through a questionnaire, to indicate how frequently each substance is used and how essential it is. Practitioners were invited to place crosses on two lines. The more the cross is on the left, the less frequent is the use of the substance and the less essential it is. The more the cross is on the right, the more frequent its use and the more essential it is.

The example provided below illustrates the case of a substance, which is the only available substance for the treatment of a relatively rare disease.

How frequent? -----X-----
How essential? -----X-----

Results:

17 individual responses were received from Austria, Belgium, France, Germany, Ireland, Italy, the Netherlands, Spain, Sweden, Switzerland and the UK. The information received was then compiled, an average score was established for each substance, ranking from 0 (not essential at all) to 10 (absolutely essential), and substances were eventually sorted by order of essentialness, as in the example below:

		How essential?	How frequent?	Countries/Vet	
7 ¹	Halothane	Not included in any annexes ²	8,8 ± 1,1 ³	9,0 ± 0,6 ⁴	10/15 ⁵
	Vital for equine anaesthesia. Isoflurane not adequate for deep anaesthesia.				

The results only show those substances used in equine medicine which have no MRLs for the horse.

Sections

- Practitioners
- State Officers
- Industry and Research
- Hygienists

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¹ This figure indicates the ranking of the substance.

² This is the MRL status of the substance.

³ The first figure indicates how essential the substance is. The second figure represents the mean standard deviation of all the responses received.

⁴ The first figure indicates how frequently the substance is used. The second figure represents the mean standard deviation of all the responses received.

⁵ The first figure indicates the number of countries, which are included in the response. The second figure indicates the number of practitioners who have contributed to the response. Figures vary from substance to substance as practitioners did not provide an answer for all substances.

Considering the most 40 essential substances, 10 of them only have an MRL set for another food-producing species. The others have no MRLs and are therefore not listed in any of the annexes of Council Regulation 2377/90.

Way forward:

This is important to consider in relation to the proposal of the Committee for Veterinary Medicinal Products of the European Agency for the Evaluation of Medicinal Products to extrapolate MRLs between species. If such extrapolation was applied in this case, this would only address the problem of less than 25 per cent of the most essential substances without MRLs for horses.

For the other substances, the veterinary use of substances without MRLs in horses should be allowed, provided records of treatments are kept and that horses do not enter into the food-chain before 6 months after such use, as it was intended at the time of adoption of Decision 2000/68 in December 1999. This however requires additional amendments to the current legislative framework.

FVE is therefore urging the European Commission to submit to the Council, as a matter of urgency, proposals to amend the legislative framework, as intended since December 1999, so that equine practitioners are allowed to use state-of-the-art medicinal products within the law.

SUBSTANCES USED IN EQUINE MEDICINE WHERE NO MAXIMUM RESIDUE LIMITS HAVE BEEN ESTABLISHED FOR HORSES

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			How essential?	How frequent?	Countries/Vets
1	Phenylbutazone Painkiller and anti-inflammatory drug.	Not included in any annexes	9,5 ± 0,4	8,9 ± 0,9	9/15
2	Flunixin AINS.	Annex I: Bovine, porcine	9,4 ± 0,4	8,9 ± 0,7	9/15
3	Fluorescein Diagnosticum.	Not included in any annexes	9,1 ± 0,6	7,9 ± 1,8	10/15
4	Gentamicin Gram-negative sensitive bacterial infections.	Annex III: Bovine, porcine (Provisional MRLs expire on 01.06.02)	9,1 ± 0,4	8,9 ± 0,6	10/17
5	Detomidine Analgesic and sedative.	Annex II: Bovine, equine (For therapeutic uses only)	9,0 ± 0,8	8,9 ± 0,8	10/16
6	Metronidazole Specific for anaerobic infections.	Annex IV: Use prohibited in food-producing animals	8,8 ± 0,8	5,4 ± 1,9	9/16
7	Halothane Vital for equine anaesthesia. Isoflurane not adequate for deep anaesthesia.	Not included in any annexes	8,8 ± 1,1	9,0 ± 0,6	10/15
8	Ceftiofur Sensitive bacterial diseases (Pasteurella, Actinobacillus, Haemophilus, Streptococcus).	Annex I: Bovine, porcine	8,6 ± 0,9	6,4 ± 2,7	9/15
9	Erythromycin Sensitive bacterial diseases.	Not included in any annexes	8,6 ± 1,1	6,5 ± 2,0	9/14
10	Altrenogest Induction of oestrus in mares.	Not included in any annexes	8,6 ± 1,4	7,4 ± 1,6	10/14
11	Prednisolone Corticosteroid.	Annex I: Bovine	8,6 ± 1,2	7,6 ± 1,4	10/16
12	Triamcinolone Long acting steroid preparations for intra-articular and local treatment of sports injuries.	Not included in any annexes	8,5 ± 0,9	6,9 ± 2,3	10/15
13	Acepromazin Anaesthetic premedication, tranquillisation and sedation.	Not included in any annexes	8,5 ± 1,4	7,4 ± 1,8	10/16
14	Diazepam Sedative and pre-med. Anticonvulsant.	Not included in any annexes	8,5 ± 1,2	7,5 ± 2,1	10/14
15	Quinidine Treatment of atrial fibrillation.	Not included in any annexes	8,3 ± 1,4	3,0 ± 1,2	9/15
16	Dobutamine Used to maintain blood pressure during general anaesthesia.	Not included in any annexes	8,3 ± 1,6	6,1 ± 2,9	10/15
17	Methylprednisolone Long acting steroid preparations for intra-articular and local treatment of sports injuries.	Annex III: Bovine (Provisional MRLs expire on 01.07.01)	8,3 ± 1,2	7,1 ± 2,0	10/16
18	Enrofloxacin Sensitive infectious diseases of the respiratory and alimentary tracts of bacterial and mycoplasmal origin.	Annex I: Bovine, rabbits, ovine, porcine, poultry	8,2 ± 1,1	6,8 ± 1,6	10/16
19	Rifampicin Specific for treating intra-cellular organisms in conjunction with other antibiotics. Vital for treatment of R.Equi foal pneumonia.	Not included in any annexes	8,1 ± 1,6	5,1 ± 2,3	9/16
20	Lignocaine Local anaesthetic - also used post colic surgery for ileus.	Not included in any annexes	8,1 ± 2,2	7,1 ± 2,4	9/15
21	Dopamin Low blood pressure.	Not included in any annexes	8,0 ± 1,4	4,3 ± 2,4	10/14
22	Doxopram Respiratory stimulant for post-anaesthetic and neonatal uses.	Not included in any annexes	7,9 ± 1,7	4,4 ± 1,6	9/13
23	Bupivacaine Long acting local anaesthetic.	Not included in any annexes	7,9 ± 1,6	5,8 ± 3,2	10/14
24	Dipyrone (metamizole) Analgesic, anti-spasmodic. Vital for treating colic.	Annex III: Bovine, porcine, equine (Provisional MRLs expire on 01.07.01)	7,9 ± 1,3	8,0 ± 1,3	10/16
25	Oxibuprocain Local anaesthetic.	Not included in any annexes	7,8 ± 2,0	4,7 ± 2,5	8/11
26	Buprenorphine Analgesic.	Not included in any annexes	7,8 ± 0,9	6,2 ± 1,3	7/10
27	Quinalbarbitone Sodium Used for humane destruction.	Not included in any annexes	7,7 ± 1,9	6,6 ± 2,9	7/11

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			How essential?	How frequent?	Countries/Vets
28	Penicillin G Infections with susceptible organisms (Group G penicillins).	Not included in any annexes	7,7 ± 1,8	7,5 ± 1,9	9/17
29	Cisapride Motility modifying drugs. Vital for colic surgery.	Not included in any annexes	7,6 ± 1,7	5,4 ± 2,3	9/13
30	Furosemide Treatment of oedematous syndromes.	Annex II: Bovine, equine (For intravenous administration only)	7,6 ± 1,8	5,7 ± 2,1	10/14
31	Chloramphenicol Eye ointment.	Annex IV: Use prohibited in food-producing animals	7,5 ± 1,5	5,8 ± 2,6	9/13
32	Dimethylsulfoxyde (D Used locally as a carrier for other substances to penetrate through the skin. Also has anti-inflammatory and local anaesthesia and antithrombotic pr	Not included in any annexes	7,5 ± 1,8	7,0 ± 2,0	10/16
33	Pentobarbitone Used for humane destruction.	Not included in any annexes	7,4 ± 2,1	5,2 ± 2,7	9/13
34	Guaifenesin (guaiaacol gl Muscular relaxant.	Not included in any annexes	7,4 ± 2,0	6,9 ± 2,2	10/16
35	Hydroxypropyl methyl c False tears.	Not included in any annexes	7,3 ± 1,5	4,7 ± 2,2	8/11
36	Betamethasone Corticosteroid.	Annex I: Bovine, porcine	7,3 ± 1,9	5,7 ± 2,1	10/15
37	Diclofenamid Treatment of glaucoma.	Not included in any annexes	7,2 ± 1,3	3,0 ± 1,7	5/8
38	Domperidone Induction of lactation in agalactic mares.	Not included in any annexes	7,2 ± 1,2	3,3 ± 1,6	7/11
39	Imidocarb Treatment of Babesiosis.	Annex III: Bovine, ovine (Provisional MRLs expire on 01.01.02)	7,2 ± 2,1	3,5 ± 2,7	8/13
40	Amikacin Infections with susceptible organisms (Aminosides).	Not included in any annexes	7,2 ± 1,8	4,2 ± 2,5	10/15
41	Cinchocaine HCL Used for humane destruction.	Not included in any annexes	7,2 ± 2,0	5,2 ± 2,5	6/11
42	Phenylephrine (neosyn Mydriatic. Epiphora.	Not included in any annexes	7,1 ± 2,0	4,2 ± 2,7	7/11
43	Thiopentone Barbiturate anaesthetics.	Not included in any annexes	7,1 ± 2,0	5,2 ± 2,0	10/16
44	Tropicamide Pupil dilator.	Not included in any annexes	7,1 ± 1,6	5,2 ± 2,1	8/13
45	Beclometasone Inhalation Therapy. Nasal oedema.	Not included in any annexes	7,0 ± 2,0	4,7 ± 2,2	9/13
46	Daraprim Treatment of equine protozoal myelitis treatment.	Not included in any annexes	6,9 ± 2,4	0,9 ± 0,7	7/11
47	Urografin Radiographic contrast agent.	Not included in any annexes	6,9 ± 2,1	1,4 ± 0,8	7/10
48	Proxymetacaine Eye local anaesthetic.	Not included in any annexes	6,9 ± 2,2	4,6 ± 1,2	6/10
49	Pilocarpine Miotic.	Not included in any annexes	6,8 ± 2,0	3,3 ± 1,5	8/10
50	Phenobarbital (phenoba Anticonvulsant. Treatment of convulsion in foals.	Not included in any annexes	6,8 ± 1,8	3,6 ± 1,6	9/13
51	Metoclopramide Prokinetic drug.	Not included in any annexes	6,8 ± 2,6	4,8 ± 2,0	8/11
52	Chondriten (or Chondr Used to encourage cartilage development and repair.	Not included in any annexes	6,8 ± 1,5	6,7 ± 2,0	10/16
53	Phenytoin Treatment of convulsion in foals.	Not included in any annexes	6,7 ± 2,4	2,8 ± 2,0	8/12
54	Omeprozole Treatment of gastric ulceration in foals & adults.	Not included in any annexes	6,7 ± 2,4	4,4 ± 2,4	10/15

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55	Permethrin	Annex III: Bovine, caprine, porcine, chicken (Provisional MRLs expire on Treatment of lice on horses. It is an export requirement for horses going to Australia.	6,7 ± 1,4	4,6 ± 2,0	9/14
56	17B-Oestradiol	Annex II: All mammalian food producing species Fertility problems. The induction of oestrus in ovariectomized mares on AI stations.	6,7 ± 2,4	4,7 ± 2,7	8/12
57	Medroxyprogesterone	Annex II: Ovine (For intravaginal use for zootechnical purposes only) Oestrus control.	6,7 ± 2,8	4,8 ± 3,1	7/10
58	Glucosamine (or glycos	Not included in any annexes Used to encourage cartilage development and repair.	6,7 ± 2,0	6,5 ± 2,3	9/15
59	Radio-opaque iodine	Not included in any annexes Radiographic contrast agent.	6,6 ± 1,3	2,3 ± 1,0	10/15
60	Digoxin	Not included in any annexes Treatment of myocardial function. Increase cardiac contractility.	6,5 ± 2,0	2,0 ± 0,7	9/13
61	Ticarcillin	Not included in any annexes Specific for Klebsiella infections.	6,5 ± 2,9	3,0 ± 2,2	8/12
62	Pentobarbitone	Not included in any annexes General anaesthesia.	6,5 ± 3,2	4,5 ± 3,4	8/12
63	Pethidine	Not included in any annexes Analgesic for the symptomatic relief of pain in spasmodic colic.	6,4 ± 2,9	2,8 ± 1,5	8/11
64	Ciclosporin A	Not included in any annexes Tretament of conjunctivitis.	6,4 ± 2,6	3,0 ± 1,2	7/10
65	Diclofenac	Not included in any annexes Eye antiinflammatory.	6,4 ± 2,6	4,3 ± 2,7	7/10
66	Polymixin B	Not included in any annexes Intra-uterine Lavage.	6,3 ± 2,1	3,5 ± 2,9	8/13
67	Cyproheptadin	Not included in any annexes Histamin antagonist.. Head shakers.	6,3 ± 2,3	4,4 ± 2,2	9/12
68	Albuterol	Not included in any annexes Inhalation therapy.	6,3 ± 2,0	4,8 ± 2,7	9/13
69	Idoxyuridine	Not included in any annexes Treatment of viral eye ulcers.	6,2 ± 2,5	1,7 ± 1,3	9/12
70	Ranitidine	Not included in any annexes Treatment of gastric ulceration in foals & adults.	6,2 ± 1,8	4,9 ± 1,9	10/16
71	Econazole	Not included in any annexes Mycosis.	6,1 ± 2,6	3,1 ± 2,3	8/10
72	Cimetidine	Not included in any annexes Treatment of gastric ulceration in foals & adults.	6,1 ± 2,3	4,5 ± 1,4	10/17
73	Hydrochlorothiazide	Annex II: Bovine Treatment of oedematous syndromes.	6,1 ± 2,6	4,5 ± 3,2	9/11
74	Enfluran	Not included in any annexes Narcosis.	6,1 ± 2,6	4,9 ± 3,0	7/10
75	Pergolide	Not included in any annexes Cushings disease.	6,0 ± 2,7	2,7 ± 1,9	9/15
76	Propofol	Not included in any annexes Narcosis.	6,0 ± 2,3	2,9 ± 1,6	7/10
77	ACTH	Not included in any annexes Treatment of premature foals.	6,0 ± 2,6	3,7 ± 2,4	9/14
78	Ciprofloxacin	Not included in any annexes Eye antibiotic.	6,0 ± 2,3	3,8 ± 2,3	8/11
79	Aminophylline	Not included in any annexes Treatment of chronic obstructive pulmonary disease (COPD).	6,0 ± 2,1	4,6 ± 2,8	9/13
80	Acetylsalicylic acid	Not included in any annexes AINS.	6,0 ± 2,6	5,4 ± 2,5	10/14
81	Griseofulvin	Not included in any annexes Oral treatment of Ringworm. Zoonotic importance.	6,0 ± 1,4	5,7 ± 1,6	10/16

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82	Insulin Hyperlipaemie.	Not included in any annexes	5,9 ± 2,5	1,6 ± 0,9	9/12
83	Digitoxin Treatment of myocardial function. Increase cardiac contractility.	Not included in any annexes	5,9 ± 2,7	1,8 ± 0,8	9/13
84	Ciclosporin Immunosuppressive.	Not included in any annexes	5,9 ± 2,8	2,1 ± 0,9	6/9
85	Sucralfate Treatment of gastric ulceration in foals & adults.	Not included in any annexes	5,9 ± 2,3	5,3 ± 1,8	10/17
86	Morphine sulphate Pain control.	Not included in any annexes	5,8 ± 2,7	3,9 ± 2,9	9/14
87	Tetracosactide (synthet Exploration of corticadrenal function.	Not included in any annexes	5,7 ± 3,6	3,1 ± 2,4	8/11
88	Pentoxiphylline Treatment of laminitis & shock.	Not included in any annexes	5,7 ± 2,6	3,4 ± 2,1	9/12
89	Cypermethrin Treatment of lice, etc.	Annex III: Bovine, ovine, aprine, porcine, chicken and salmonidae	5,7 ± 1,9	4,1 ± 2,5	8/11
90	Tobramycin Eye drops.	Not included in any annexes	5,7 ± 3,2	4,2 ± 3,3	8/11
91	Diocetyl sodium sulfosuc Used in impaction colics.	Not included in any annexes	5,7 ± 2,5	4,4 ± 3,1	8/12
92	Eltenac AINS.	Not included in any annexes	5,7 ± 2,8	5,1 ± 3,0	7/10
93	Cefaclor Infections with susceptible organisms (1st generation cephalosporin).	Not included in any annexes	5,6 ± 2,6	1,5 ± 1,1	7/10
94	Naloxon Barbiturate intoxication.	Not included in any annexes	5,6 ± 2,9	1,6 ± 1,1	8/12
95	Methylegometrin Uterus contraction. Used in hemorrhage during delivery and post-partum.	Not included in any annexes	5,6 ± 2,8	2,2 ± 1,7	6/9
96	Boldenone Recovery from illness, treatment of anaemia.	Not included in any annexes	5,6 ± 2,7	2,3 ± 1,6	7/10
97	Ipratropium Used locally to produce bronchodilatation.	Not included in any annexes	5,6 ± 2,4	2,5 ± 2,2	6/8
98	Amphotericin B Fungal metritis.	Not included in any annexes	5,6 ± 1,9	2,6 ± 2,0	9/14
99	Metaclorpromide HCl Motility modifying drugs. Vital for colic surgery.	Not included in any annexes	5,5 ± 1,9	3,7 ± 1,7	9/13
100	Glyceryl trinitrate Laminitis.	Not included in any annexes	5,5 ± 2,6	4,1 ± 2,1	7/11
101	Neosporin Eye drops antimicrobial.	Not included in any annexes	5,4 ± 1,9	3,5 ± 1,9	7/11
102	Neomycin Gram-negative sensitive bacterial infections.	Annex III: Bovine, porcine, chicken (Provisional MRLs expire on 01.06.02	5,4 ± 2,2	4,1 ± 1,8	9/15
103	Diclazuril Treatment of Babesiosis.	Annex I: Ovine (For oral use in lambs only)	5,3 ± 1,8	1,7 ± 1,4	6/10
104	Glycopyrolate To prevent heart from slowing down.	Not included in any annexes	5,3 ± 2,5	2,1 ± 1,2	8/11
105	Timolol Treatment of glaucoma.	Not included in any annexes	5,3 ± 3,1	2,2 ± 1,9	6/8
106	Cefalexin Infections with susceptible organisms (1st generation cephalosporin).	Annex I: Bovine	5,3 ± 2,7	2,7 ± 1,7	9/12
107	Loperamid Antidiarrhoeal agent.	Not included in any annexes	5,3 ± 2,9	3,6 ± 2,3	9/11
108	Phenylephrine (neosyn Splenic contraction.	Not included in any annexes	5,2 ± 2,3	2,2 ± 1,1	9/12

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109	Reserpine Temperament modifier.	Not included in any annexes	5,2 ± 2,8	2,6 ± 2,1	6/9
110	Nystatine Fungal metritis.	Not included in any annexes	5,1 ± 1,4	2,3 ± 1,7	9/13
111	Methadon Sedation and analgesia.	Not included in any annexes	5,1 ± 2,8	3,9 ± 2,9	8/11
112	Naproxen Antiinflammatoricum.	Not included in any annexes	5,1 ± 2,9	4,4 ± 2,4	9/12
113	Benzy benzoate Sweet itch - allergic dermatitis.	Not included in any annexes	5,1 ± 1,9	5,8 ± 2,6	9/15
114	Acyclovir Treatment of herpes virus.	Not included in any annexes	5,0 ± 3,4	1,6 ± 0,9	9/12
115	Testosterone Fertility problems.	Not included in any annexes	5,0 ± 2,3	2,6 ± 1,5	7/10
116	Salbutanol Antiastrmaticum.	Not included in any annexes	5,0 ± 2,1	3,1 ± 2,5	9/11
117	Prilocain Local anaesthetic.	Not included in any annexes	5,0 ± 2,9	3,7 ± 2,4	6/9
118	Meclofenamic acid AINS.	Not included in any annexes	5,0 ± 2,7	4,2 ± 2,3	8/12
119	Pentazocine Morphine agonist analgesic.	Not included in any annexes	4,9 ± 2,5	2,6 ± 1,3	7/9
120	Ibuprofen AINS.	Not included in any annexes	4,9 ± 2,7	4,5 ± 3,2	9/13
121	Codeine phosphate Anti-tussive.	Not included in any annexes	4,8 ± 2,5	3,0 ± 1,9	7/11
122	Codeine phosphate Anti-diarrhoeal drug.	Not included in any annexes	4,8 ± 2,4	4,0 ± 2,6	9/14
123	Fusidic acid Eye ointment.	Not included in any annexes	4,8 ± 2,6	4,3 ± 2,7	7/10
124	Sulfasalazin Intestinal inflammation.	Not included in any annexes	4,7 ± 3,4	1,4 ± 1,3	5/7
125	Propanolol To correct cardiac arrhythmia.	Not included in any annexes	4,6 ± 2,2	1,5 ± 0,9	8/12
126	Fluorouracil Treatment of keratosis. Cytotoxic cream.	Not included in any annexes	4,6 ± 1,3	1,9 ± 1,2	8/10
127	Atipamezole Reversal of alpha2 agonists.	Not included in any annexes	4,6 ± 2,2	2,9 ± 2,0	8/10
128	Suxamethonium hydrox Muscle relaxation.	Not included in any annexes	4,6 ± 2,4	4,3 ± 2,6	6/10
129	Ceftadizime Infections with susceptible organisms (3rd generation cephalosporin).	Not included in any annexes	4,5 ± 3,8	1,0 ± 0,5	7/10
130	Imipramin Antidepressive.	Not included in any annexes	4,5 ± 3,5	1,1 ± 0,4	7/9
131	Itraconazol Antimycotic.	Not included in any annexes	4,5 ± 1,3	2,0 ± 1,7	9/13
132	Diprenorphine Reversal of narcosis.	Not included in any annexes	4,5 ± 2,9	2,9 ± 1,9	6/8
133	Bibrocathol Eye antibiotic.	Not included in any annexes	4,5 ± 3,3	3,1 ± 2,2	8/10
134	Cefotaxime Infections with susceptible organisms (3rd generation cephalosporin).	Not included in any annexes	4,4 ± 3,0	0,9 ± 0,4	7/10
135	Cisplatin Antitumoral.	Not included in any annexes	4,4 ± 2,9	1,6 ± 0,9	7/11

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136	Procainamide Antiarrhythmic.	Not included in any annexes	4,4 ± 2,2	1,8 ± 1,1	8/12
137	Terbutalin Antiasthmaticum.	Not included in any annexes	4,4 ± 3,6	1,9 ± 1,2	4/6
138	Johexol Diagnosticum.	Not included in any annexes	4,3 ± 2,8	1,2 ± 0,7	7/10
139	Clemastin Histamin antagonist.	Not included in any annexes	4,3 ± 2,5	1,6 ± 0,5	6/8
140	Nandrolone Recovery from illness, treatment of anaemia.	Not included in any annexes	4,3 ± 2,6	2,8 ± 2,0	10/15
141	Methocarbamol Muscular relaxant.	Not included in any annexes	4,3 ± 3,6	3,6 ± 2,9	8/12
142	Isoniazid Specific for treating intra-cellular organisms in conjunction with other antibiotics. Vital for treatment of R.Equi foal pneumonia.	Not included in any annexes	4,2 ± 2,9	1,0 ± 0,6	8/10
143	Clotrimazol Mycosis.	Not included in any annexes	4,2 ± 2,9	2,2 ± 1,6	9/12
144	Ketoconazol Antimycotic.	Not included in any annexes	4,2 ± 2,1	2,3 ± 1,3	9/12
145	Levomepromazine Sedative.	Not included in any annexes	4,2 ± 3,4	2,5 ± 2,6	4/7
146	Streptomycin Gram-negative sensitive bacterial infections.	Annex III: Bovine, ovine, porcine (Provisional MRLs expire on 01.06.02)	4,2 ± 3,2	4,8 ± 3,4	9/16
147	Cefixime Infections with susceptible organisms (3rd generation cephalosporin).	Not included in any annexes	4,1 ± 3,3	0,9 ± 0,3	7/10
148	Cefadroxil Infections with susceptible organisms (1st generation cephalosporin).	Not included in any annexes	4,1 ± 2,6	1,4 ± 1,1	8/11
149	Primidone Treatment of convulsion in foals.	Not included in any annexes	4,1 ± 2,1	1,8 ± 0,9	7/10
150	Ipratropium Antiasthmaticum. Inhalation therapy.	Not included in any annexes	4,1 ± 2,6	2,0 ± 1,3	5/6
151	Lactulose Used in impaction colics.	Not included in any annexes	4,1 ± 2,4	2,9 ± 2,3	6/9
152	Chanazine Sedative with analgesic and muscle relaxant properties.	Not included in any annexes	4,1 ± 3,7	3,5 ± 3,4	5/8
153	Cefalotin Infections with susceptible organisms (1st generation cephalosporin).	Not included in any annexes	4,0 ± 2,8	1,0 ± 0,4	7/10
154	Penethacillin Gram-negative sensitive bacterial respiratory infections.	Not included in any annexes	4,0 ± 3,4	1,5 ± 1,0	6/10
155	Fluconazol Antimycotic.	Not included in any annexes	4,0 ± 2,0	2,2 ± 1,4	9/13
156	Tranexamic acid Hemostaticum.	Not included in any annexes	4,0 ± 3,7	2,2 ± 2,3	7/9
157	Cefuroxim Infections with susceptible organisms (2nd generation cephalosporin).	Not included in any annexes	3,9 ± 3,1	2,0 ± 1,7	6/8
158	Warfarin Anticoagulation.	Not included in any annexes	3,8 ± 3,1	1,3 ± 0,8	8/11
159	Terfenadin Antihistamin.	Not included in any annexes	3,7 ± 3,2	1,1 ± 0,6	4/6
160	Glucagon Glucogenolysis.	Not included in any annexes	3,7 ± 3,0	1,2 ± 0,6	7/10
161	Desmopressin Antidiuretic hormone.	Not included in any annexes	3,6 ± 3,1	1,7 ± 1,4	7/10
162	Dalteparin Anticoagulation.	Not included in any annexes.:	3,6 ± 2,8	2,2 ± 2,3	7/9

SUBSTANCES USED IN EQUINE MEDICINE WHERE NO MAXIMUM RESIDUE LIMITS HAVE BEEN ESTABLISHED FOR HORSES

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		How essential?	How frequent?	Countries/Vets	
163	Piperacillin Infections with susceptible organisms (Group A penicillins).	Not included in any annexes	3,5 ± 3,1	0,6 ± 0,5	6/8
164	Fenoterol Antiastmaticum.	Not included in any annexes	3,5 ± 2,7	1,1 ± 0,5	4/6
165	Clindamycin Infections with susceptible organisms.	Not included in any annexes	3,5 ± 3,3	1,3 ± 1,0	6/8
166	Strychnine Used in neuromuscular syndromes.	Annex II: Bovine (For oral use only at dose up to 0.1 mg/kg bw)	3,5 ± 2,7	1,5 ± 0,8	5/8
167	Azathioprine Immunosuppressive.	Not included in any annexes	3,5 ± 2,5	1,9 ± 1,3	4/6
168	Ropivacain Local anaesthetic.	Not included in any annexes	3,5 ± 2,8	2,6 ± 2,4	6/9
169	Flumequine Sensitive bacterial diseases.	Annex I: Bovine, ovine, porcine, chicken, turkey and salmonidae	3,4 ± 3,2	0,6 ± 0,3	5/7
170	Hydroxyzin Sedative.	Not included in any annexes	3,3 ± 2,5	1,0 ± 0,4	5/7
171	Famotidin Ulcer.	Not included in any annexes	3,2 ± 2,1	1,8 ± 1,6	6/9
172	Lincomycin Infections with susceptible organisms.	Annex I and III: Bovine (Annex I) , porcine, chicken and ovine (Annex III)	3,1 ± 3,5	1,2 ± 1,1	8/10
173	Thiamylal Anticonvulsant.	Not included in any annexes	3,1 ± 2,0	1,4 ± 0,6	5/7
174	Etorphine Neuroleptanalgesia for restraint and minor surgical interventions.	Not included in any annexes	3,1 ± 2,7	1,8 ± 1,7	8/12
175	Clorocin Tail pruritus.	Not included in any annexes	3,0 ± 3,1	1,2 ± 1,1	7/9
176	Chloral hydrate Anticonvulsant.	Not included in any annexes	3,0 ± 2,2	1,5 ± 1,2	8/12
177	Ethacridinlactate Wound antiseptic.	Not included in any annexes	3,0 ± 3,5	3,0 ± 3,5	6/8
178	Acriflavine Wound antiseptic.	Not included in any annexes	2,8 ± 1,8	3,7 ± 2,4	9/14
179	Cresol sulfonic acid Anti-infectious.	Not included in any annexes	2,7 ± 2,7	1,4 ± 0,9	4/6
180	Lindane Treatment of ticks, mange mites.	Not included in any annexes	2,7 ± 2,1	1,9 ± 1,5	7/11
181	Netilmicin Infections with susceptible organisms (Aminosides).	Not included in any annexes	2,6 ± 2,4	0,9 ± 0,5	8/10
182	Spectinomycin Sensitive bacterial infections.	Annex I and III: Bovine, porcine, chicken (Annex I) and ovine (Annex III)	2,6 ± 2,7	0,9 ± 0,7	8/10
183	Oxymetazolin Nasal oedema.	Not included in any annexes	2,4 ± 2,3	1,7 ± 0,8	4/6
184	Hydralazin High blood pressure.	Not included in any annexes	2,0 ± 1,7	0,8 ± 0,5	7/9
185	Amidotrizoin Diagnosticum.	Not included in any annexes	1,8 ± 2,1	0,8 ± 0,8	6/9
186	Misoprostol Treatment of ulcer.	Not included in any annexes	1,8 ± 1,4	1,1 ± 0,8	6/8
187	Lansoprazole Ulcer.	Not included in any annexes	1,8 ± 1,5	1,3 ± 0,8	6/8
188	Pentoxyverine Drug modifying the bronchial mucosa.	Not included in any annexes	1,7 ± 0,9	1,5 ± 0,8	5/7
189	Nizatidine Treatment of ulcer.	Not included in any annexes	1,6 ± 1,6	1,1 ± 0,9	6/8

**SUBSTANCES USED IN EQUINE MEDICINE WHERE NO MAXIMUM RESIDUE
LIMITS HAVE BEEN ESTABLISHED FOR HORSES**

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			How essential?	How frequent?	Countries/Vets
190	Tocainid Antiarrytmicum.	Not included in any annexes	1,4 ± 1,3	0,7 ± 0,5	6/8
191	Terpine Drug modifying the bronchial mucosa.	Not included in any annexes	0,9 ± 0,5	0,9 ± 0,5	3/5
192	Prifinium Antispasmodic.	Not included in any annexes	0,8 ± 0,4	0,5 ± 0,4	4/7
193	Diagnostic Radioisotop Radiographic contrast agent.	Not included in any annexes	±	±	/