



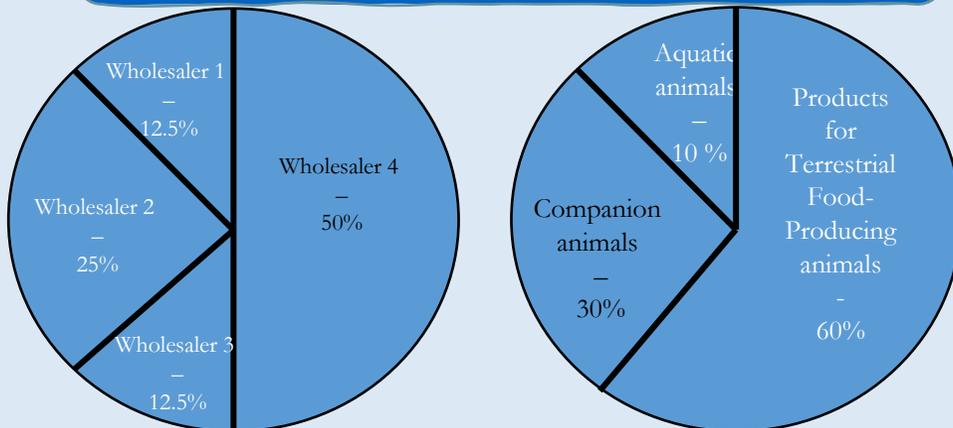
Calculation of the numerator: kilograms of active ingredients



1 Map a distribution system of the veterinary products at national level

2 If you request that different stakeholders calculate the data, make sure they receive a training and that you can have access to all their calculations

3 Estimate the coverage of the data



Different considerations for estimating the coverage:

- The number of stakeholders that contributed and their relative contribution to the total
- Animal species covered by the products
- Types of products covered (oral products are usually predominant)

Antimicrobial Class
Aminoglycosides
Amphenicols
Arsenicals
Cephalosporins (all generations)
1-2 gen. cephalosporins
3-4 gen cephalosporins
Fluoroquinolones
Glycopeptides
Glycophospholipids
Lincosamides
Macrolides
Nitrofurans
Orthosomycins
Other quinolones
Penicillins
Pleuromutilins
Polypeptides
Quinoxalines
Streptogramins
Sulfonamides (including trimethoprim)
Tetracyclines
Others
Aggregated class data
Total kg

OTHER

All other antibiotics not covered by the antimicrobial classes already listed. This could include novobiocin, fusidic acid, kirromycins, fosfomycin, rifamycins, etc.

AGGREGATED CLASS DATA

This is for **confidential** data only, not for products having more than one antibiotic. If in your country the data for one antimicrobial class needs to remain confidential, then the data can be reported under this category by selecting this category in ANIMUSE and report the names of the classes to WOAAH.

Aminoglycosides

Aggregated Class Data ?

Veterinary Medical Use <small>(including prevention of clinical signs)</small>	Oral route <small>(kg)</small>	Injection route <small>(kg)</small>	Other routes <small>(kg)</small>
Terrestrial food-producing animals		3.6	





Which data do you need to have for obtaining kilograms of active ingredients?

Antimicrobial
Quantities

Mandatory
Data

Active Ingredients

Molecule name (e.g.
Enrofloxacin)

Package Size (e.g. 1
L)

Concentration and
units (e.g. 100 mg each 1
ml)

Optional Data

Target Species (e.g.
Poultry)

Routes of
administration
(e.g. Oral)

Analyse the Data at Veterinary Product

1 Name of the veterinary product



Sometimes the name might indicate the species, active substances or concentrations. If available, use it to cross-check information

2 Active substances per product



Remember, that each calculation must be done by product e.g. tetracycline, neomycin, enrofloxacin, etc.

3 Concentration of active substances



The strength is expressed:
-in mg or g of the active ingredient per volume or weight or other unit (for example: ml, l, kg, tablet or piece),
-in International Units (IU) per weight, volume or other unit,
-in per cent (%) weight per weight (w/w) or weight per volume (w/v).



Example 1

- Product Name: Product premix
- Package size: 500 g
- Sales during a year: 1 500 units
- Molecules and concentrations:
 - Tetracycline 40 mg / 1 g
 - Neomycin 20 mg / 1 g

Active Ingredient 1

Tetracycline

$$= \frac{0.04 \text{ g} * 500 \text{ g}}{1 \text{ g}} \times 1\,500$$

$$= 30\,000 \text{ g} / 1\,000$$

$$= 30 \text{ kg reported for tetracyclines class}$$

Active Ingredient 2

Neomycin

$$= \frac{0.02 \text{ g} * 500 \text{ g}}{1 \text{ g}} \times 1\,500$$

$$= 15\,000 \text{ g} / 1\,000$$

$$= 15 \text{ kg reported for aminoglycosides class}$$

Example 2

- Product Name: Doggy tabs
- Package size: 1 box with 3 blisters (each blister has 10 tabs)
- Imports during a year: 950 boxes
- Molecules and concentrations:
 - Metronidazole 125 mg / 1 tablet
 - Spiramycin 700 000 IU / 1 tablet

Active Ingredient 1

Metronidazole

$$= \frac{125 \text{ mg} * 30 \text{ piece}}{1 \text{ piece}} \times 950$$

$$= 3\,562\,500 \text{ mg} / 1\,000\,000$$

$$= 3.6 \text{ kg reported for the Other class}$$

Active Ingredient 2

Spiramycin

$$= \frac{700\,000 \text{ IU} * 30 \text{ piece}}{1 \text{ piece}} \times 950$$

$$= 19\,950\,000\,000 \text{ IU} \times \mathbf{0.000313}$$

$$= 6\,244\,350 \text{ mg} / 1\,000\,000$$

$$= 6.2 \text{ kg reported for macrolides class}$$

Table 2: Conversion of International Units (IUs) of certain antimicrobial agents into mg and relevant active entities, based on the ESVAC conversion factors¹

Antimicrobial agent in the veterinary medicine	Antimicrobial active entity for reporting to WOAHA	International Units per mg	Conversion factor to mg for multiplication
Apramycin	Apramycin	552	0.00181
Bacitracin	Bacitracin	74	0.013514
Benzylopenicillin (penicillin G) ²	Benzylopenicillin	1670	0.0006
Chlortetracycline	Chlortetracycline	1000	0.001
Colistin methane sulfonate sodium (colistimethate sodium INN)	Colistin	12700	0.000079
Colistin sulfate	Colistin	20500	0.000049
Dihydrostreptomycin	Dihydrostreptomycin	777	0.00129
Erythromycin	Erythromycin	920	0.001087
Gentamicin	Gentamicin	620	0.001613
Kanamycin	Kanamycin	796	0.001256
Neomycin	Neomycin	762	0.00131
Neomycin B (Framycetin)	Neomycin B (Framycetin)	706	0.00142
Oxytetracycline	Oxytetracycline	880	0.00114
Paromomycin	Paromomycin	750	0.00133
Polymyxin B	Polymyxin B	8403	0.000119
Rifamycin	Rifamycin	887	0.001127
Spiramycin	Spiramycin	3200	0.000313
Streptomycin	Streptomycin	760	0.00132
Tetracycline	Tetracycline	982	0.00102
Tobramycin	Tobramycin	875	0.001143
Tylosin	Tylosin	1000	0.001



Table 3: Conversion of content stated in mg, g or kg of derivatives/compounds of antimicrobial agents in the veterinary product into corresponding mg, g or kg antimicrobial active entity for reporting to WOAHA, based on the ESVAC conversion factors³



Derivate or compound	Active entity	Conversion factor for multiplication
Benethamine benzylopenicillin ⁴	Benzylopenicillin	0.61
Benzathine benzylopenicillin ⁵	Benzylopenicillin	0.68
Cefapirin benzathine ⁶	Cefapirin	0.78
Cefalexin benzathine ⁷	Cefalexin	0.74
Cloxacillin benzathine ⁸	Cloxacillin	0.78
Oxacillin benzathine ⁹	Oxacillin	0.77
Penethamate hydriodide ¹⁰	Benzylopenicillin	0.60
Procaine benzylopenicillin ¹¹	Benzylopenicillin	0.57

Context

- Not mandatory.
- Based on the Calculation Tool - Excel.
- This Module, as the Calculation Tool, collects data at a veterinary product level to help with the calculation of kilograms of active ingredients.
- Any information provided in the Module is confidential, regardless of the confidentiality status of the dossier.

Do not change	Optional	Optional	Mandatory	Mandatory	Optional	Optional																					
OIE ID	Data Source Used	ID Product Presentation	Product name	Please indicate the purpose of the product, according to its label declaration. (Medical use includes prevention of clinical signs)	Route of administration, according to its label declaration	Please indicate the Animals covered by the product																					
						Bovine	Swine	Sheep	Goats	Poultry	Carnivora	Equidae	Rabbits/Hares	Bees - Honey	Regalia	Fish - Undefined	Fish - Coys	Fish - Salmon or Trout	Fish - Tilapia	Fish - Codfish	Fish - Marine	Crustaceans	Molluscs	Arachnids	Canines	Felines	Ornamental fish
0	Imports	ASFR-20156	Example 1	Vet. Medical use	Parenteral																						Yes
1	Manufacture/Prod.	ASFR-20157	Example 2	Growth promotion	Oral		Yes					Yes															

Table 1. Top Products with highest antimicrobial quantities

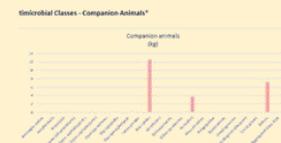
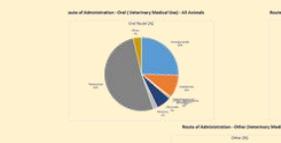
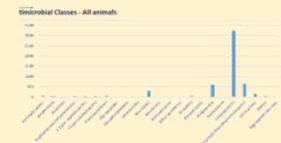
Product ID	Product Name	Net Weight (kg)	Percentage (%)	Number of Animals	Package Size	Route of Administration
1	Product 1	1,200.0	24%	1,200.0	100 mg	Oral
2	Product 2	800.0	16%	800.0	100 mg	Oral
3	Product 3	600.0	12%	600.0	100 mg	Oral
4	Product 4	400.0	8%	400.0	100 mg	Oral
5	Product 5	300.0	6%	300.0	100 mg	Oral
6	Product 6	200.0	4%	200.0	100 mg	Oral
7	Product 7	150.0	3%	150.0	100 mg	Oral
8	Product 8	100.0	2%	100.0	100 mg	Oral
9	Product 9	50.0	1%	50.0	100 mg	Oral
10	Product 10	50.0	1%	50.0	100 mg	Parenteral

Table 3. Veterinary Medical Use of Antimicrobial Quantities, by OIE Animal Groups and Routes of Administration

Animal Group	Parenteral (%)	Oral (%)	Other (%)
Bovine	95.0%	5.0%	0.0%
Swine	97.0%	3.0%	0.0%
Sheep	98.0%	2.0%	0.0%
Goats	99.0%	1.0%	0.0%
Poultry	99.5%	0.5%	0.0%
Carnivora	99.8%	0.2%	0.0%
Equidae	99.9%	0.1%	0.0%
Rabbits/Hares	100.0%	0.0%	0.0%
Bees - Honey	100.0%	0.0%	0.0%
Regalia	100.0%	0.0%	0.0%
Fish - Undefined	100.0%	0.0%	0.0%
Fish - Coys	100.0%	0.0%	0.0%
Fish - Salmon or Trout	100.0%	0.0%	0.0%
Fish - Tilapia	100.0%	0.0%	0.0%
Fish - Codfish	100.0%	0.0%	0.0%
Fish - Marine	100.0%	0.0%	0.0%
Crustaceans	100.0%	0.0%	0.0%
Molluscs	100.0%	0.0%	0.0%
Arachnids	100.0%	0.0%	0.0%
Canines	100.0%	0.0%	0.0%
Felines	100.0%	0.0%	0.0%
Ornamental fish	100.0%	0.0%	0.0%

Table 2. Animals covered by the antimicrobial quantities

Animal Group	# of Products	# of Products
Bovine	10	10
Swine	10	10
Sheep	10	10
Goats	10	10
Poultry	10	10
Carnivora	10	10
Equidae	10	10
Rabbits/Hares	10	10
Bees - Honey	10	10
Regalia	10	10
Fish - Undefined	10	10
Fish - Coys	10	10
Fish - Salmon or Trout	10	10
Fish - Tilapia	10	10
Fish - Codfish	10	10
Fish - Marine	10	10
Crustaceans	10	10
Molluscs	10	10
Arachnids	10	10
Canines	10	10
Felines	10	10
Ornamental fish	10	10



Code	Molecular Name	Antimicrobial Class	Percentage (%)	Quantity (kg)	Percentage (%)	Quantity (kg)	Percentage (%)	Quantity (kg)
01	Confidant	Aggregated class data	0.0	0.0	0.0	0.0	0.0	0.0
02	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
03	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
04	Amoxicillin + clavulanic acid	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
05	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
06	Amoxicillin + sulbactam	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
07	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
08	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
09	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
10	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
11	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
12	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
13	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
14	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
15	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
16	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
17	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
18	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0
19	Amoxicillin	Antimicrobials	0.0	0.0	0.0	0.0	0.0	0.0
20	Amoxicillin	Penicillins	0.0	0.0	0.0	0.0	0.0	0.0

Images from the Calculation Tool - Excel

When to use it?

- Any time, 24/7 during.
- For assistance in calculations due to large number of products.
- If there is no national database for collecting data at veterinary product level (use the online entry).
- If there is a national database for collecting data at veterinary product level, but the national system does not perform the calculations (use the injection file).
- When willing to check if the calculations are good.
- When willing to have more data analysis at a molecule or veterinary product level.

The screenshot displays the 'CALCULATION MODULE' interface. At the top, there are year selection tabs for 2021, 2020, and 2022. Below this, a search bar prompts the user to 'Find a product, active ingredient, ID of the product' with an input field for 'Enter Product Presentation ID'. To the right, there are input fields for 'Product name', 'Enter Product Presentation ID', and 'Enter Product WOAH ID Code'. A 'Generate' button is visible in the top right corner. The 'Import data' section includes an 'Upload File' button, an 'Add product' button, and a 'Delete all products' button. The 'Units and Package Sizes' section has a label 'Enter the number of units (by packages) imported or sold in a year or the period of time declared to WOAH', a dropdown for 'Package Sizes' (currently set to 'ml'), and an input field for 'Units'. The 'Type of Use' section features three radio button options: 'Vet. Medical Use', 'Growth Promotion', and 'Vet. Medical Use + Growth Promotion'. The 'Route of Administration' section has a label '(Optional)' and a dropdown menu. The 'Animals Covered by the Product' section also has a label '(Optional)'. A large grey rectangular area is present at the bottom left of the interface.

The screenshot shows the ANIMUSE dashboard. At the top, there is a header menu with items: HOME, CALCULATION MODULE (with a dropdown arrow), QUESTIONNAIRE, DATA VISUALISATION (with a dropdown arrow), and HISTORY. A dark grey dropdown menu is open under 'CALCULATION MODULE', containing three items: 'Calculation Module Managem...' (with a pencil icon), 'Product History' (with a calendar icon), and 'History Logs' (with a circular arrow icon). An orange arrow points from the text 'You can access the Calculation Module through the Header Menu.' to the 'Calculation Module Managem...' option. On the left side of the dashboard, there is a section titled 'Welcome to th' and 'Module'. Below this, there is a section titled 'Select the year of data entry' with a calendar icon. It contains four circular buttons: '2021 Target', '2020 Optional' (with a mouse cursor over it), '2022 Optional', and '+ Add a year'.

You can access the Calculation Module through the Header Menu.

You can also access it when answering the questionnaire.

The screenshot shows a questionnaire question: '1 Are data on the amount of antimicrobial agents intended for use in animals available?' with radio buttons for 'Yes' (selected) and 'No'. Below the question are two buttons: 'Next (use Calculation Module)' and 'Next (no data in the Calculation Module)'. A black arrow points from the text 'You can also access it when answering the questionnaire.' to the 'Next (use Calculation Module)' button.

ANIMUSE: How to Use the Calculation Module?

The Calculation Module is accessible 24/7.

It has the same entry fields as the Calculation Tool (the Excel that some countries have been using).

Bovine Swine Sheep Goats Poultry Cervidae Camelidae Equines Rabbits/hares Bees - Honey Reptiles Fish - Salmon or Trout Fish - Tilapia Fish - Catfish Fish - Marine Fish - Undefined Crustaceans Molluscs Amphibians Canines Felines Ornamental Fish

Active ingredient

Chemical compound as declared on the label

1

Active Ingredient Name ?

Strength of Antimicrobial Agent Required

Per unit of content

Result for active ingredient

Antimicrobial Class <input type="text" value="Tetracyclines"/>	Calculated amount of antimicrobial agents <input type="text" value="83750"/> kg	Conversion factor <input type="text" value="Not Applicable"/>
--	---	---

+ Add an active ingredient

Delete this product

Save

2021 2020 2022

Product name

Enter Product Presentation ID

Units and Package Sizes

Enter the number of units (by packages) imported or sold in a year or the period of time declared to WOAH

Package Sizes

Type of Use ?

Vet. Medical Use

Growth Prom

Vet. Medical U

Select

Oral

Injection

Other

Route of Administration *(Optional)*

This is an example on how to manually enter product data. The injection of datasets and connection from a national system (APIs) is also possible, if you want more information on APIs, please contact the Antimicrobial Use Team



ANIMUSE: How to Use the Calculation Module?

2021 2020 **2022**

Find a product, active ingredient, ID of the product

Enter Product Presentation ID

Import data

Upload File

+ Add product

Delete all products

Product 1 | 250 ml

Product 1 · A0001 · **250 ml**

Updated on 03/05/2023

Units and Package Sizes + Add units

Total units for the year: **1,340**

Number of units (by packages) imported or sold in a year or the period of time declared to WOAH

Select All

Delete Change year

1,340 units | Added on 03/05/2023 by Delfy Gochez

Items per page: 5 1 - 1 of 1

Type of Use Vet. Medical Use

Route of Administration Oral

Animals Covered by the Product Bovine, Sheep, Goats

Active ingredient

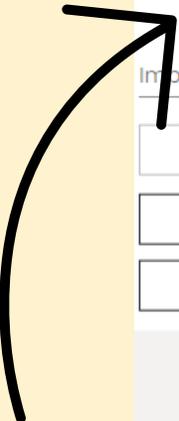
1 Tetracycline · 250 mg / 1 ml

Antimicrobial Class	Calculated amount of antimicrobial agents	Conversion factor
Tetracyclines	83.8 kg	Not Applicable

Delete this product Edit product sheet

You can also add more units for the same product with same package size

You can always edit the product information or delete it.



Once the product is saved, you can visualize it in the product list or do a search (by product name, molecule or ID).



CALCULATION MODULE ▾ QUESTIONNAIRE

- Calculation Module Management
- Product History
- History Logs

PRODUCT HISTORY

Product History Consolidated data

From To Year Product / Product ID Active Ingredient Antimicrobial Class

You can search for a specific product with the filters

By selecting a product(s), you can **edit** the information or **delete** them.

Product entries are listed by date / unit data is modifiable

	#	Date of Entry	Year	Product ID	Antimicrobial Agent #1			Antimicrobial Agent #2			Actions
					Product name	Package Size	N° of Units	Active Ingredient	Antimicrobial Class	Quantity in kg	
<input checked="" type="checkbox"/>	241012	14/03/2023	2022	Product 60	20 ml	10	Gentamicin	Aminoglycosides	0		<input type="button" value="Edit"/> <input type="button" value="Delete"/>
<input type="checkbox"/>	241011	14/03/2023	2022	Product 59	25 kg	234	Salinomycin	Ionophores	702		<input type="button" value="Edit"/> <input type="button" value="Delete"/>
<input checked="" type="checkbox"/>	241010	14/03/2023	2022	Product 58	25 kg	40	Salinomycin	Ionophores	120		<input type="button" value="Edit"/> <input type="button" value="Delete"/>
<input type="checkbox"/>	241009	14/03/2023	2022	Product 57	150 g	60	Enramycin	Polypeptides	0.4		<input type="button" value="Edit"/> <input type="button" value="Delete"/>
<input type="checkbox"/>	241008	14/03/2023	2022	Product 56	10 kg	7	Bacitracin	Polypeptides	7.1		<input type="button" value="Edit"/> <input type="button" value="Delete"/>

The Product History allows you to visualize entries for the same product.

CALCULATION MODULE ▾ QUESTIC

- Calculation Module Managem...
- Product History
- History Logs

ANTIMICROBIAL QUANTITIES BY PRODUCT

Product History Consolidated data

Year ▾ Product / Product ID product Active Ingredient ▾ Antimicrobial Class ▾ Type of Use ▾ Route of Administr... ▾ Animal Group

Consolidated data for all products saved in system

	Year	Product ID	Product name	Package Size	Number of Units	Active Ingredient	Antimicrobial Class	Quantity in kg	Type of Use	Route of Administration	Animal Groups	Actions
<input checked="" type="checkbox"/>	2022	Product 152	100 ml	12	Oxytetracycline	Tetracyclines	0.1	Vet. Medical Use	Injection			
<input type="checkbox"/>	2022	Product 154	250 ml	7	Oxytetracycline	Tetracyclines	0.2	Vet. Medical Use	Injection			
<input type="checkbox"/>	2022	Product 155	500 ml	60	Oxytetracycline	Tetracyclines	3	Vet. Medical Use	Injection			
<input type="checkbox"/>	2022	Product 151	100 ml	777	Oxytetracycline	Tetracyclines	3.9	Vet. Medical Use	Injection			

You can search for a specific product with the filters.

By selecting a product(s), you can **delete** them.

The Consolidated Data allows you to **visualize** the consolidated data for the same product with same package size.



- Calculation Module
- Calculation Module
- Product History
- History Logs

HISTORY LOGS

You can search for a specific product with the filters.

Year From To Product Name Action

- Select
- Added
- Deleted

Year	Date	Product Name	Package Size	Units	Action	Author
2021	19/04/2023	Product 94	100 g	2	DELETED	Delfy Gochez
2021	19/04/2023	Product 93	100 g	42	DELETED	Delfy Gochez
2021	19/04/2023	Product 92	100 ml	24	DELETED	Delfy Gochez
2021	19/04/2023	Product 91	50 g	23	DELETED	Delfy Gochez
2021	19/04/2023	Product 90	100 g	42	DELETED	Delfy Gochez
2021	19/04/2023	Product 89	50 g	25	DELETED	Delfy Gochez



Thank you



For any question, contact us at antimicrobialuse@woah.org