



Veterinary antibiotic sales in NL in 2011 – partial report

report of total sales data

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This is a publication of LEI, part of Wageningen UR.

This is a preliminary, partial report.

The full report 'Veterinary antibiotic usage in the Netherlands in 2011' will soon be published, on June 15, 2012, and will include use data per livestock sector.

The information presented on the MARAN website is a collation of data from on-going surveillance systems on the sales and use of antimicrobial agents in animal husbandry in the Netherlands. The website also provides more detailed data about the usage of antibiotics.

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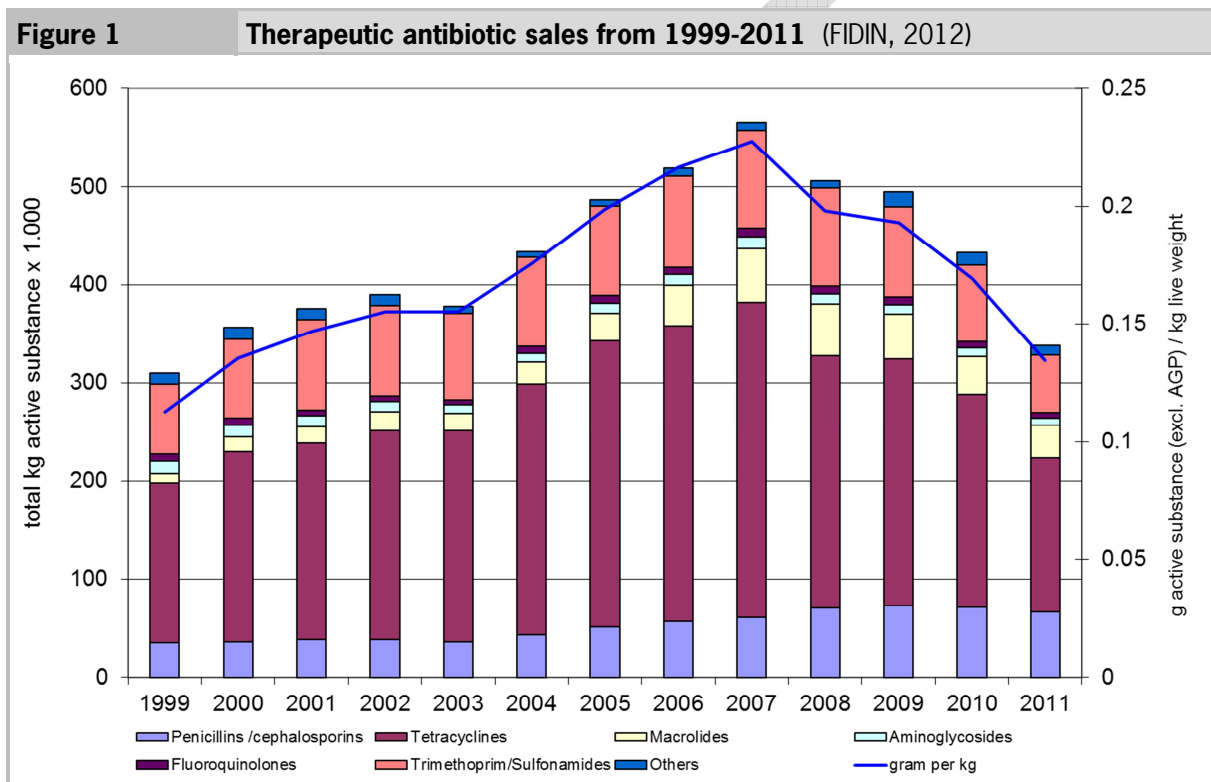
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Trends in total sales

In the years 2009-2011 the total sales of antibiotics, licensed for therapeutic usage in animals in the Netherlands, decreased by nearly 32%, from 495 tonnes in 2009 to 338 tonnes in 2011 (FIDIN, 2012). This means that the policy objective for 2011, a 20% reduction in 2011, compared with 2009, was more than reached. Moreover, using 2007 as reference year with the highest sales, the decrease up to 2011 was even 40%.

Figure 1 shows the trend in the total sales, also expressed in grams of active substance per kg of live weight present.



Discussion

The total sales volume amounted to 338 tonnes in 2011, which is below the level of the year 2000. However, at that time an additional 205 tonnes of antimicrobial growth promoters were used (see Table 1). Almost all classes of antibiotics showed a decrease.

Tetracyclines

The sales data show a decrease of tetracyclines from 251 tonnes in 2009 to 157 tonnes in 2011 (-37%), of which 102 tonnes of oxytetracycline (-41%) and 54 tonnes of doxycycline (-31%). The true exposure to tetracyclines decreased by an estimated 35%, roughly assuming a constant livestock population and an average dosage of 30 mg per kg of animal for oxytetracycline and 10 mg per kg for doxycycline.

Fluoroquinolones

In 2011 the fluoroquinolones represented 1.52% of the total veterinary antibiotic sales in the Netherlands, of which 0.43% 'newer' fluoroquinolones (danofloxacin, difloxacin, enrofloxacin and marbofloxacin). In the years 2009-2011 the sales of fluoroquinolones decreased substantially, by 34%. The sales of the newer fluoroquinolones showed a slight increase of 6%.

Cephalosporins

The cephalosporins represented 0.23% of the total sales, of which 0.17% third and fourth generation cephalosporins (cefoperazon, cefovecin, cefquinome, ceftiofur). In 2009-2011 the sales of third and fourth generation cephalosporins decreased by 37%.

Table 1. Therapeutic antibiotic sales from 1999-2011 in tonnes (FIDIN, 2012)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Penicillins /cephalosporins	35	36	38	38	36	43	51	57	61	70	73	71	66
Tetracyclines	162	194	200	214	216	256	292	301	321	257	251	217	157
Macrolides	10	15	17	19	17	23	28	42	55	52	46	39	34
Aminoglycosides	13	12	11	10	9	9	11	11	12	11	10	9	7
Fluoroquinolones	7	7	6	6	5	7	8	7	9	8	8	7	5
Trimethoprim/Sulfonamides	71.5	80.4	92.1	92.1	88.2	91.1	91.1	93.1	99	100	92	78	58
Others	11	12	11	11	7	6	6	8	8	7	15	13	10
Total therapeutic sales	310	356	376	390	378	434	487	519	565	506	495	433	338
Antimicrobial growth promoters (AGP)	250	205	180	140	120	80	40	0	0	0	0	0	0
Total sales including AGP	560	561	556	530	498	514	527	519	565	506	495	433	338

Materials and method

FIDIN, the federation of the Dutch veterinary pharmaceutical industry, reports the total number of kilograms of antibiotics (active ingredient) sold in the Netherlands in 2011, at the level of pharmacotherapeutic groups. The data about use of active substances are based on sales data of members of FIDIN and are estimated to cover about 98% of all sales in the Netherlands. Actual use can differ from the amounts sold, as a result of stock piling and cross border use.

The European Medicines Agency (EMA) collects harmonised antibiotic usage data based on overall sales of veterinary antimicrobial agents. The European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project was launched by EMA in September 2009. To ensure that the data provided by the Member States are harmonised, an ESVAC Data Collection Protocol (ESVAC template) has been developed and a call for data has been sent to most EU member states. To fully implement the ESVAC protocol FIDIN had to adjust the levels of active ingredients for several products, taking into account the salt and ester formulations and calculation factors of active ingredients expressed in international units. These corrections led to a reduction of the calculated total amount of active substance by approximately 4%. The sales figures of 2009, 2010 and 2011 were based on the ESVAC template, the figures of 1999 to 2008 were re-calculated and corrected accordingly.

Total sales for all animals

The sales data in this partial report give information about the total sales for all animals, not per individual animal species. Information about the use per animal species will be published in the complete report, on the MARAN website, on June 15, 2012.

To adjust for trends in the size of the animal population the sales of antibiotics were also expressed as grams of active ingredient per kilogram live animal weight (Figure 1). For this purpose the annual total sales data published by FIDIN were related to the total live weight of the average number of animals present in the Dutch livestock farming sector (pigs, poultry, veal calves, other cattle and sheep). For this analysis the following average weights were used: veal calves 172 kg (i.e. the weighted average of white veal calf 164 kg and rosé veal calf 192 kg), other cattle 500 kg, turkeys 6 kg, other poultry 1 kg, fattening pigs 70 kg, sows 220 kg, piglets (< 20 kg) 10 kg, sheep 60 kg. This yields information about the trend in the sales of antibiotics in grams per kilogram of live animal weight present in the Netherlands over the years, thus taking into account yearly fluctuations in the size of the animal population.

The yearly average numbers of animals and its conversion into live weight are given in Table 2 and 3.

Table 2. Trends in livestock in the Netherlands in numbers (thousands)

Number of animals * 1.000	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Piglets (less than 20 kg)	4,791	4,935	4,422	4,225	3,896	4,300	4,170	4,470	4,680	4,555	4,809	4,649	4,797
Sows	1,320	1,272	1,161	1,140	1,052	1,125	1,100	1,050	1,060	1,025	1,100	1,098	1,106
Fattening pigs	7,028	6,615	5,931	5,789	5,818	5,715	5,730	5,700	5,970	6,155	6,199	6,459	6,200
Turkeys	1,544	1,544	1,523	1,451	1,112	1,238	1,245	1,140	1,232	1,222	1,246	1,167	1,167
Other poultry	53,453	53,453	58,475	62,066	42,991	43,854	45,525	42,529	44,487	50,270	52,323	54,367	57,811
Veal calves	800	756	676	692	748	775	813	824	860	913	886	921	919
Cattle (excl. veal calves)	3,297	3,134	3,166	3,088	2,986	2,984	2,933	2,849	2,960	3,083	3,112	3,039	2,993
Sheep	1,152	1,250	1,250	1,300	1,476	1,700	1,725	1,755	1,715	1,545	1,091	1,211	1,113

Sources: Eurostat (pigs, cattle, sheep, laying hens before 2008), FAO (other poultry), CBS (laying hens 2008-2011); For poultry, FAO Poultry figures 2011 were not yet available; and 2010 data were used

Table 3. Trends in livestock in the Netherlands in live weight (tonnes)

Live weight *1.000 kg	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Pigs	831,676	793,563	715,996	699,438	678,789	691,693	685,946	675,840	699,094	703,131	725,260	741,472	726,530
Poultry	62,717	62,717	67,613	70,772	49,663	51,282	52,995	49,369	51,879	57,602	59,799	61,369	64,813
Veal calves	137,920	130,334	116,542	119,301	129,024	133,610	140,161	142,058	148,264	157,401	152,746	158,780	158,436
Cattle (excl. veal calves)	1,648,500	1,567,000	1,583,000	1,544,000	1,493,150	1,492,000	1,466,500	1,424,500	1,480,000	1,541,500	1,556,000	1,519,500	1,496,500
Sheep	69,120	75,000	75,000	78,000	88,560	102,000	103,500	105,300	102,900	92,700	65,460	72,660	66,780
total	2,749,933	2,628,614	2,558,152	2,511,511	2,439,186	2,470,585	2,449,102	2,397,067	2,482,137	2,552,334	2,559,265	2,553,781	2,513,059



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