

Annex 3.D.1 – Table A.

Background data for CRF, table 4.A - Enteric Fermentation

Compounds	Animal category	Average daily feed intake	CH ₄ conversion
		1990-2002	1990-2002
CH ₄	Dairy cattle	note 1	6.0
	Non-dairy cattle	note 1	6.0
	Sheep	59.7	6.0
	Goats	54.9	5.0
	Horses	208.8	2.5
	Swine	note 1	0.6
	Poultry	NE	NE

Note 1 Feed intake

Animal category	Subcategory	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MJ/day per produced unit*														
Dairy cattle	Big race	285.8	285.8	285.8	285.8	302.4	302.4	302.4	302.4	304.1	304.1	304.1	304.1	305.8
Dairy cattle	Jersey	237.2	237.2	237.2	237.2	250.7	250.7	250.7	250.7	253.2	253.2	253.2	253.2	255.7
Non-dairy cattle	Bull >½ year. heavy breed	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2
	Heifer >½ year. heavy breed	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.5	98.5	98.5	98.5	98.5
	Calves. bull. heavy breed	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1
	Calves. heifer. heavy breed	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.5	9.5	9.5	9.4	9.4
Swine	Slaughtering pigs	10.8	10.8	10.8	10.8	9.7	9.7	9.7	9.7	9.5	9.5	9.5	9.5	9.5
	Piglets	1.7	1.7	1.7	1.7	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1
	Sows	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	64.2	64.2	64.2	64.2	64.2

* The feed in take is given per produced unit. which mean it is not comparable with the default values in IPCC.

Background data for CRF - table 4.A - Enteric Fermentation - additional information

Indicators		Dairy cattle	Non-dairy cattle
		<u>1985-2002</u>	<u>1985-2002</u>
	Weigth	575	325
Note 1	Fedding situation	85	54
Note 2	Milk yield	note 2	NO
	Work	NO	NO
	Pregnant	90	NO
Note 3	Digestibility of feed	71	78

Note 1	Feeding situation	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<u>Percent of feeding in stable</u>														
	Dairy cattle	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
	Bull-calves	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Bulls	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Heifer-calves	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Heifer	0.55	0.53	0.52	0.50	0.48	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
	Cattle for suckling	0.50	0.47	0.45	0.43	0.41	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39

Note 2	Milk yield	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<u>kg milk/head/yr</u>														
	No. of dairy cattle	17.07	16.95	17.23	17.97	17.90	18.16	18.83	19.18	19.50	19.87	20.02	20.32	20.62
	Milk yield per cow	6231	6187	6288	6560	6533	6628	6872	7001	7118	7252	7308	7416	7525

Note 3	Digestibility of feed	In stable (pct.)	On grass (pct.)
	Dairy cattle	71	78
	Bull-calves	79	79
	Bulls	75	78
	Heifer-calves	78	78
	Heifer	71	78
	Cattle for suckling	67	77

Annex 3.D.2 – Table B

Background data for CRF, table 4.A - Manure Management

Compounds	Animal category	Typical animal mass	VS daily excretion	Bo CH ₄ producing potential
		1990-2002 kg	1990-2002 kg DM/head/year	1990-2002
CH ₄	Dairy cattle	575.0 note 1a	1600.0	0.24
	Non-dairy cattle	325.0 note 1b	300.0	0.17
	Sheep	70.0	86.0	0.19
	Goats	60.0	84.0	0.17
	Horses	600.0	520.0	0.33
	Swine	76.0 note 1c	22.0	0.45
	Poultry	2.0	0.3	0.32

Note 1a – VS daily excretion depending on stable type

Animal category	Stable type	Manure type	Methane convention factor - MCF	Distribution of stable type 2002	Vs daily excretion kg VS/prod. head/yr 2002	Distribution of stable type 1990	Vs daily excretion kg VS/prod. head/yr 1990
Dairy cattle	Tied-up with liquid and solid manure	Solid manure	1	0.12	1317	0.35	1317
		+Liquid	10	0.12	225	0.35	225
	Tied-up with slurry	Slurry	10	0.23	1473	0.44	1473
	Loose-holding with beds, slatted floor	Slurry	10	0.39	1473	0.13	1473
	Loose-holding with beds, slatted floor, scrapes	Slurry	10	0.04	1473	0.01	1473
	Loose-holding with beds, solid floor	Slurry	10	0.11	1473	0.04	1473
	Deep litter (all)	Deep litter	1	0.00	2958	0.00	2958
	Deep litter, slatted floor	Deep litter	1	0.07	2255	0.03	2255
	Deep litter, slatted floor, scrapes	+Slurry	10	0.07	495	0.03	495
		Deep litter	1	0.01	2255	0.00	2255
		+Slurry	10	0.01	495	0.00	495
	Deep litter, solid floor, scrapes	Deep litter	1	0.03	2255	0.01	2255
		+Slurry	10	0.03	495	0.01	495

Average VS daily excretion				1622	1539		
Note 1b – VS daily excretion depending on stable type							
Animal category	Stable type	Manure type	Methane convention factor - MCF	Distribution of stable type 2002	Vs daily excretion kg VS/prod. head/yr 2002	Distribution of stable type 1990	Vs daily excretion kg VS/prod. head/yr 1990
Heifer							
> ½ year*	Tied-up with liquid and solid manure	Solid manure	1	0.07	215.6	0.19	255.1
		+ Liquid	10	0.07	29.5	0.19	34.9
	Tied-up with slurry	Slurry	10	0.07	235.4	0.19	278.6
		Slatted floor-boxes	Slurry	10	0.23	191.4	0.40
	Loose-holding with beds, slatted floor	Slurry	10	0.19	235.4	0.04	278.6
	Deep litter (all)	Deep litter	1	0.00	446.4	0.03	528.3
	Deep litter, solid floor	Deep litter	1	0.28	394.4	0.09	466.7
	Deep litter, slatted floor	Deep litter	1	0.09	340.2	0.04	402.6
		+ Slurry	10	0.09	76.7	0.04	90.7
	Deep litter, slatted floor, scrapes	Deep litter	1	0.02	340.2	0.01	402.6
		+ Slurry	10	0.02	76.7	0.01	90.7
	Deep litter, solid floor, scrapes	Deep litter	1	0.05	340.2	0.01	402.6
		+ Slurry	10	0.05	76.7	0.01	90.7
Average VS daily excretion					309.6		310.1

* Heifer > ½ year is the largest subcategory

Note 1c – VS daily excretion depending on stable type

Animal category	Stable type	Manure type	Methane convention factor - MCF	Distribution of stable type 2002	Vs daily excretion kg VS/prod. head/yr 2002	Distribution of stable type 1990	Vs daily excretion kg VS/prod. head/yr 1990
Pigs for slaughtering	Full slatted floor	Slurry	10	0.56	22.0	0.51	22.0
		Slurry	10	0.34	23.8	0.23	23.8
	Partly slatted floor	Solid manure	1	0.04	15.5	0.22	15.5
		+Liquid	10	0.04	4.8	0.22	4.8
	Deep litter	Deep litter	1	0.01	42.1	0.04	42.1
	Partley slatted floor and partley deep litter	Deep litter	1	0.05	19.8	0.00	19.8
		+Slurry	10	0.05	11.0	0.00	11.0

Average VS daily excretion	23.2	22.8
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