D1 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES WITH CERTAIN VALUES OPTIONALLY CHOSEN BY THE USER AND WITH NORMAL IPCC N2O EMISSION VALUES — BASIC VALUES — By Jacob Bugge, Version 310308, — Available at www.ppo.bugge.com, See terms of use on Sheet A — D1

Note 33

Crop, fodder/food	WRS	WWH	WWB	WBA	RYE	TRI	SBA	SWH	OAT	MCC	MCW	GRO	GCR	CGR	GHP	GRP	CGR0	CONC	
Crop #	22	11	13	10	14	16	1	2	3	5	216	263	260	261	2520	252	2610	9999	Note 1
<NUE/e>	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.05	0.83	1.33	11.68	0.44	0.81	-2.75	1.00	Note 16
N digestibility, food/fodder crops	0.84	0.67	0.68	0.66	0.62	0.65	0.65	0.67	0.64	0.62	0.63	0.78	0.80	0.80	0.66	0.78	0.80	0.87	Note 4
<NUE/e> addition before cereal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04	0.11	29.21	0.00	0.00	-0.81	0.00	Note 34
<NUE/e> addition from straw	0.09	0.07	0.07	0.08	0.11	0.10	0.08	0.05	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	160	309	199	21	132	132	-87		Note 14

Crop, PPO/biodiesel/bioethanol	WRB	WWHB	WWBB	WBB	RYB	TRB	SBB	SWB	OAB	MCB	
Crop #	229	119	139	109	149	169	19	29	39	59	Note 1
<NUE/e>	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	Note 16
N digestibility, other crop parts	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.83	Note 4
<NUE/e> addition before cereal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
<NUE/e> addition from straw	0.09	0.07	0.07	0.08	0.11	0.10	0.08	0.05	0.07	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	Note 14

<NUE/e> amounts from crop res	0.02	0.07	0.06	0.05	0.10	0.09	0.06	0.08	0.06	0.14	0.04	0.04	0.13	1.28	0.15	0.15	-0.30		Note 34
<NUE/e> amounts from N fixation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	7.97	0.00	0.00	-2.70		Note 34

Manure/fertilizer kind, #	None	N	Cattle manure			Pig manure				Poultry manure					Sheep manure		Goat manure		Green	Green	None	None	
	0	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	6	6	71	72	0	0	Note 35
Manure handling	None		Liquid	Separated	Deep litter	Grazing	Liquid	Separated	Deep litter	Rooting	Liquid	Separated	Deep litter	Scraping	Deep litter	Grazing	Deep litter	Grazing	high N	low N	None	None	Note 35
#	0	1	21	22	23	24	31	32	33	34	41	42	43	44	53	54	63	64	71	72	0	0	Note 35
Manure+straw, relative		1.000	1.016	1.016	1.159	1.000	1.000	1.024	1.127	1.000	1.000	1.000	1.013	1.000	1.162	1.000	1.162	1.000	1.000	1.000			Note 36
Vol/NH3 House	0.000	0.000	0.080	0.050	0.060	0.000	0.140	0.180	0.250	0.000	0.100	0.250	0.400	0.000	0.150	0.000	0.150	0.000	0.000	0.000			Note 37
Vol/NH3 Store	0.000	0.000	0.022	0.085	0.300	0.000	0.027	0.214	0.400	0.000	0.020	0.150	0.175	0.000	0.150	0.000	0.150	0.000	0.000	0.000			Note 37
% use of field store					20				70				85										Note 38
Vol/NH3 Field	0.000	0.022	0.250	0.250	0.250	0.070	0.250	0.250	0.250	0.070	0.250	0.250	0.250	0.070	0.250	0.070	0.250	0.070	0.250	0.250			Note 37
N efficiency	0.000	1.000	0.700	0.650	0.450	0.450	0.750	0.650	0.650	0.650	0.650	0.650	0.450	0.450	0.450	0.450	0.450	0.450	0.700	0.400			Note 39
N-Vol/NH3 efficiency		1.022	0.933	0.867	0.600	0.484	1.000	0.867	0.867	0.699	0.867	0.867	0.600	0.484	0.600	0.484	0.600	0.484	0.933	0.533			Note 40

Use	Kind	Waste moved	Waste in field	Cattle Dairy	Cattle Beef	Pig Pork	Poultry Meat	Poultry Eggs	Sheep Milk/mutton	Goat Milk/meat	N crop high N	N crop low N	Food/ beverage	Fuel/ other	
Kind #		-1	0	21	22	32	42	43	51	61	71	72	8	9	Note 41
Fodder to food	N eff	NON		0.264	0.227	0.418	0.510	0.241	0.142	0.096					Note 41
Fodder to food	N eff	ORG		0.264	0.146	0.269	0.328	0.272	0.142	0.096					Note 41
Fodder to food	ND eff	NON		0.351	0.310										Note 41
Fodder to food	ND eff	ORG		0.351	0.199										Note 41

Ratios of N2O-N to N according to		IPCC 1996 (current inventories)			IPCC 2006 (newest values, not yet used for inventories)			
Fertilizer/manure		N	Animal	Green	N	Animal	Green	Note 42
Handling/	Slurry and liquid manure	0	0.0010	0	0	0.0050	0	Note 42
house/store	Solid manure and deep litter	0	0.0200	0	0	0.0050	0	Note 42
Application/field		0.0125	0.0125	0.0125	0.0100	0.0100	0.0100	Note 42
Grazing cattle, rooting pigs, craping poultry		0	0.0200	0	0	0.0200	0	Note 42
Grazing, others		0	0.0200	0	0	0.0100	0	Note 42
Volatilisation/NH3		0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	Note 42
Crop residues		0	0.0000	0.0125	0	0.0000	0.0100	Note 42
N fixing crops		0	0.0000	0.0125	0	0.0000	0.0000	Note 42
Leaching		0.0250	0.0250	0.0250	0.0075	0.0075	0.0075	Note 42

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE DAIRY Note 43
AND CONTINUING WITH LIQUID CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							24.7	24.6				1.61	3.30	1.43	2.03	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					13.3	13.2				0.13		0.13		Note 45
1-10 N leach			FIRST YEAR		0.0517		0.0314		TOTAL N AMOUNTS IN KG AND % LEACHED					62.5	62.2				1.56		0.47		Note 45
			TOTAL		0.0674		0.0414		TOTAL N AMOUNTS IN KG AND %					100.5	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1336		0.0822	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	21	28.2	1.27	2.54	1.13	1.54	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	2.3	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050	Note 49
Year	N	21	0	26.4	26.4	0	100	11	0	1	19.8	21	7.4	1.7	0.0	0.0	1.4	21	5.6	0.27	0.61	0.24	0.39	Note 47
2	Vol/NH3	Cattle	NO	0.0	6.6	NON	100.00	WWH	1.000	YES	11.0	Cattle	0.67				0.0	Cattle	0.5	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	1.4	11.0	Dairy	2				1.3	Liquid	0.0	0.28	0.0010	0.08	0.0050	Note 49
Year	N	21	0	5.3	5.3	0	100	11	0	1	4.0	21	1.5	0.3	0.0	0.0	0.3	21	1.1	0.05	0.12	0.05	0.08	Note 47
3	Vol/NH3	Cattle	NO	0.0	1.3	NON	100.00	WWH	1.000	YES	2.2	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.3	2.2	Dairy	2				0.3	Liquid	0.0	0.06	0.0010	0.02	0.0050	Note 49
Year	N	21	0	1.1	1.1	0	100	1	0	1	0.8	21	0.3	0.1	0.0	0.0	0.1	21	0.2	0.01	0.02	0.01	0.02	Note 47
4	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.1	0.4	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.2	0.2	0	100	10	0	1	0.2	21	0.1	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Cattle	NO	0.0	0.1	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	22	1	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	1	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	10	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	1.28	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.30	2.03	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.30	2.03	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.89	Total including natural	4.19	2.92	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE DAIRY Note 43
AND CONTINUING WITH SEPARATED CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							24.7	24.5				1.93	3.64	1.44	2.04	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							12.4	12.3				0.12		0.12		Note 45
1-10	N leach		FIRST YEAR		0.0567	0.0313	TOTAL N AMOUNTS IN KG AND % LEACHED							63.5	63.2				1.59		0.48		Note 45
			TOTAL		0.0743	0.0416	TOTAL N AMOUNTS IN KG AND %							100.5	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1477		0.0828	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	22	28.2	1.53	2.78	1.14	1.54	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.4	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050	Note 49
Year	N	22	0	27.2	27.2	0	100	11	0	1	20.4	21	7.1	1.7	0.0	0.0	1.4	22	5.4	0.33	0.70	0.25	0.41	Note 47
2	Vol/NH3	Cattle	NO	0.0	6.8	NON	100.00	WWH	1.000	YES	11.9	Cattle	0.67				0.0	Cattle	0.3	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	1.4	11.9	Dairy	2				1.4	Sep	0.0	0.30	0.0105	0.09	0.0050	Note 49
Year	N	22	0	5.2	5.2	0	100	11	0	1	3.9	21	1.4	0.3	0.0	0.0	0.3	22	1.0	0.06	0.13	0.05	0.08	Note 47
3	Vol/NH3	Cattle	NO	0.0	1.3	NON	100.00	WWH	1.000	YES	2.3	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.3	2.3	Dairy	2				0.3	Sep	0.0	0.06	0.0105	0.02	0.0050	Note 49
Year	N	22	0	1.0	1.0	0	100	1	0	1	0.8	21	0.3	0.1	0.0	0.0	0.1	22	0.2	0.01	0.03	0.01	0.01	Note 47
4	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.1	0.4	Dairy	2				0.0	Sep	0.0	0.01	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.2	0.2	0	100	10	0	1	0.1	21	0.1	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.1	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	22	1	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	1	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	10	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.26	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.64	2.04	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.64	2.04	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	4.52	2.92	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE DAIRY Note 43
AND CONTINUING WITH CATTLE DEEP LITTER TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							24.2	23.1				2.23	4.05	1.45	2.09	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					13.2	12.6				0.13		0.13		Note 45
1-10 N leach			FIRST YEAR		0.0619		0.0314		TOTAL N AMOUNTS IN KG AND % LEACHED					67.5	64.3				1.69		0.51		Note 45
			TOTAL		0.0826		0.0426		TOTAL N AMOUNTS IN KG AND %					105.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1670		0.0862	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	23	28.2	1.78	3.03	1.13	1.54	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.7	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050	Note 49
Year	N	23	0	30.7	30.7	0	100	11	0	1	23.0	21	5.5	1.3	0.0	0.0	1.6	23	4.2	0.39	0.86	0.27	0.47	Note 47
2	Vol/NH3	Cattle	NO	0.0	7.7	NON	100.00	WWH	1.000	YES	15.9	Cattle	0.67				0.0	Cattle	0.3	0.08	0.0125	0.08	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	1.6	15.9	Dairy	2				1.6	Deep	0.0	0.40	0.0200	0.12	0.0050	Note 49
Year	N	23	0	4.6	4.6	0	100	11	0	1	3.5	21	0.8	0.2	0.0	0.0	0.2	23	0.6	0.06	0.13	0.04	0.07	Note 47
3	Vol/NH3	Cattle	NO	0.0	1.2	NON	100.00	WWH	1.000	YES	2.4	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.2	2.4	Dairy	2				0.2	Deep	0.0	0.06	0.0200	0.02	0.0050	Note 49
Year	N	23	0	0.7	0.7	0	100	1	0	1	0.5	21	0.1	0.0	0.0	0.0	0.0	23	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	NO	0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.4	Dairy	2				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050	Note 49
Year	N	23	0	0.1	0.1	0	100	10	0	1	0.1	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.1	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	0	0.0	0.0	0	100	22	1	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	0	0.0	0.0	0	100	1	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	0	0.0	0.0	0	100	10	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.20	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.05	2.09	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.05	2.09	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	4.88	2.92	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE DAIRY Note 43
AND CONTINUING WITH MANURE FROM GRAZING CATTLE TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							24.3	24.3	2.31	4.13	1.98	2.56	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							4.5	4.5	0.04		0.04		Note 45
1-10 N leach			FIRST YEAR		0.0622	0.0398	TOTAL N AMOUNTS IN KG AND % LEACHED							71.2	71.2	1.78		0.53		Note 45
			TOTAL		0.0842	0.0523	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																	0.1697		0.1054	Note 46
Year N	1	0	100.0	100.0	0	100	22	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	24	28.2	1.81	3.05	1.57	1.95	Note 47
1 Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Graz	0.0	1.22	0.0200	0.37	0.0200	Note 49
Year N	24	0	28.2	28.2	0	100	11	0	1	26.2	21	5.1	1.2	0.0	0.0	1.8	24	3.9	0.43	0.93	0.36	0.53	Note 47
2 Vol/NH3	Cattle	NO	0.0	2.0	NON	100.00	WWH	1.000	YES	19.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	1.8	19.3	Dairy	2				1.8	Graz	0.0	0.48	0.0200	0.15	0.0200	Note 49
Year N	24	0	3.9	3.9	0	100	11	0	1	3.6	21	0.7	0.2	0.0	0.0	0.2	24	0.5	0.06	0.13	0.05	0.07	Note 47
3 Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	WWH	1.000	YES	2.7	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.2	2.7	Dairy	2				0.2	Graz	0.0	0.07	0.0200	0.02	0.0200	Note 49
Year N	24	0	0.5	0.5	0	100	1	0	1	0.5	21	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.02	0.01	0.01	Note 47
4 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.4	Dairy	2				0.0	Graz	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year N	24	0	0.1	0.1	0	100	10	0	1	0.1	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
5 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	24	0	0.0	0.0	0	100	22	1	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
6 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	24	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
7 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	24	0	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
8 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	24	0	0.0	0.0	0	100	1	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
9 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	24	0	0.0	0.0	0	100	10	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
10 Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.14	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.13	2.56	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.13	2.56	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.79	Total including natural	4.92	3.36	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE BEEF Note 43
AND CONTINUING WITH LIQUID CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE BEEF Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											23.3	23.2	1.63	3.35	1.46	2.07 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									13.9	13.8	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0517		0.0316		TOTAL N AMOUNTS IN KG AND % LEACHED									63.3	63.0	1.58		0.48	Note 45
			TOTAL		0.0683		0.0422		TOTAL N AMOUNTS IN KG AND %									100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1439		0.0889 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	21	29.6	1.27	2.54	1.14	1.55 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	2.4	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050 Note 49
Year	N	21	0	27.7	27.7	0	100	11	0	1	20.7	22	7.7	1.6	0.0	0.0	1.4	21	6.1	0.28	0.65	0.25	0.41 Note 47
2	Vol/NH3	Cattle	NO	0.0	6.9	NON	100.00	WWH	1.000	YES	11.6	Cattle	0.67				0.0	Cattle	0.5	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	1.4	11.6	Beef	2				1.4	Liquid	0.0	0.29	0.0010	0.09	0.0050 Note 49
Year	N	21	0	5.7	5.7	0	100	11	0	1	4.3	22	1.6	0.3	0.0	0.0	0.3	21	1.3	0.06	0.13	0.05	0.09 Note 47
3	Vol/NH3	Cattle	NO	0.0	1.4	NON	100.00	WWH	1.000	YES	2.4	Cattle	0.67				0.0	Cattle	0.1	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.3	2.4	Beef	2				0.3	Liquid	0.0	0.06	0.0010	0.02	0.0050 Note 49
Year	N	21	0	1.2	1.2	0	100	1	0	1	0.9	22	0.3	0.1	0.0	0.0	0.1	21	0.3	0.01	0.03	0.01	0.02 Note 47
4	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	SBA	1.000	YES	0.5	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.1	0.5	Beef	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	21	0	0.2	0.2	0	100	10	0	1	0.2	22	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.00 Note 47
5	Vol/NH3	Cattle	NO	0.0	0.1	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.1	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	0.1	0.1	0	100	22	1	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	0.0	0.0	0	100	1	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	0.0	0.0	0	100	10	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.30	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.35	2.07	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.35	2.07	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.90	Total including natural	4.25	2.97	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE BEEF Note 43
AND CONTINUING WITH SEPARATED CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE BEEF Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							23.2	23.1				1.97	3.71	1.47	2.08	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							13.0	12.9				0.13		0.13		Note 45
1-10	N leach		FIRST YEAR		0.0570	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED							64.4	64.0				1.61		0.48		Note 45
			TOTAL		0.0756	0.0424	TOTAL N AMOUNTS IN KG AND %							100.6	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1597		0.0895	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	22	29.6	1.54	2.80	1.14	1.54	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.5	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050	Note 49
Year	N	22	0	28.6	28.6	0	100	11	0	1	21.4	22	7.4	1.5	0.0	0.0	1.5	22	5.9	0.34	0.73	0.26	0.43	Note 47
2	Vol/NH3	Cattle	NO	0.0	7.1	NON	100.00	WWH	1.000	YES	12.5	Cattle	0.67				0.0	Cattle	0.3	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	1.5	12.5	Beef	2				1.4	Sep	0.0	0.31	0.0105	0.09	0.0050	Note 49
Year	N	22	0	5.7	5.7	0	100	11	0	1	4.3	22	1.5	0.3	0.0	0.0	0.3	22	1.2	0.07	0.15	0.05	0.09	Note 47
3	Vol/NH3	Cattle	NO	0.0	1.4	NON	100.00	WWH	1.000	YES	2.5	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.3	2.5	Beef	2				0.3	Sep	0.0	0.06	0.0105	0.02	0.0050	Note 49
Year	N	22	0	1.1	1.1	0	100	1	0	1	0.8	22	0.3	0.1	0.0	0.0	0.1	22	0.2	0.01	0.03	0.01	0.02	Note 47
4	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	SBA	1.000	YES	0.5	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.1	0.5	Beef	2				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.2	0.2	0	100	10	0	1	0.2	22	0.1	0.0	0.0	0.0	0.0	22	0.0	0.00	0.01	0.00	0.00	Note 47
5	Vol/NH3	Cattle	NO	0.0	0.1	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.1	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	22	1	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	1	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	22	0	0.0	0.0	0	100	10	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	1.28	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.71	2.08	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.71	2.08	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	Total including natural	4.60	2.97	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE BEEF Note 43
AND CONTINUING WITH CATTLE DEEP LITTER TO PRODUCE WINTER WHEAT FOR CATTLE BEEF Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											22.9	21.7	2.29	4.14	1.48	2.13 Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											13.8	13.2	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0624	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED											68.5	65.1	1.71		0.51	Note 45
			TOTAL		0.0844	0.0434	TOTAL N AMOUNTS IN KG AND %											105.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1811		0.0931	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	23	29.6	1.80	3.06	1.14	1.55 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.8	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	23	0	32.2	32.2	0	100	11	0	1	24.2	22	5.8	1.2	0.0	0.0	1.7	23	4.6	0.41	0.91	0.28	0.49 Note 47
2	Vol/NH3	Cattle	NO	0.0	8.1	NON	100.00	WWH	1.000	YES	16.7	Cattle	0.67				0.0	Cattle	0.3	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	1.7	16.7	Beef	2				1.6	Deep	0.0	0.42	0.0200	0.13	0.0050 Note 49
Year	N	23	0	5.0	5.0	0	100	11	0	1	3.8	22	0.9	0.2	0.0	0.0	0.3	23	0.7	0.06	0.14	0.04	0.08 Note 47
3	Vol/NH3	Cattle	NO	0.0	1.3	NON	100.00	WWH	1.000	YES	2.6	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.3	2.6	Beef	2				0.3	Deep	0.0	0.06	0.0200	0.02	0.0050 Note 49
Year	N	23	0	0.8	0.8	0	100	1	0	1	0.6	22	0.1	0.0	0.0	0.0	0.0	23	0.1	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Cattle	NO	0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.4	Beef	2				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	23	0	0.1	0.1	0	100	10	0	1	0.1	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.1	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	0	0.0	0.0	0	100	22	1	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	0	0.0	0.0	0	100	1	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	0	0.0	0.0	0	100	10	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.21	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.14	2.13	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.14	2.13	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	4.98	2.97	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND CATTLE BEEF Note 43
AND CONTINUING WITH MANURE FROM GRAZING CATTLE TO PRODUCE WINTER WHEAT FOR CATTLE BEEF Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP		TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED												23.0	23.0	2.36	4.22	2.04	2.63	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									4.6	4.6	0.05		0.05		Note 45
1-10 N leach			FIRST YEAR		0.0628	0.0404		TOTAL N AMOUNTS IN KG AND % LEACHED									72.4	72.4	1.81		0.54		Note 45
			TOTAL		0.0861	0.0536		TOTAL N AMOUNTS IN KG AND %									100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.1839		0.1145	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	24	29.6	1.84	3.08	1.59	1.98	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Graz	0.0	1.22	0.0200	0.37	0.0200	Note 49
Year	N	24	0	29.6	29.6	0	100	11	0	1	27.5	22	5.3	1.1	0.0	0.0	1.9	24	4.2	0.45	0.98	0.38	0.56	Note 47
2	Vol/NH3	Cattle	NO	0.0	2.1	NON	100.00	WWH	1.000	YES	20.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	1.9	20.3	Beef	2				1.9	Graz	0.0	0.51	0.0200	0.15	0.0200	Note 49
Year	N	24	0	4.2	4.2	0	100	11	0	1	3.9	22	0.8	0.2	0.0	0.0	0.3	24	0.6	0.06	0.14	0.05	0.08	Note 47
3	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	WWH	1.000	YES	2.9	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.3	2.9	Beef	2				0.3	Graz	0.0	0.07	0.0200	0.02	0.0200	Note 49
Year	N	24	0	0.6	0.6	0	100	1	0	1	0.6	22	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.4	Beef	2				0.0	Graz	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	24	0	0.1	0.1	0	100	10	0	1	0.1	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	0	0.0	0.0	0	100	22	1	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	0	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	0	0.0	0.0	0	100	1	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	0	0.0	0.0	0	100	10	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.22	2.63	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.22	2.63	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	5.02	3.43	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND PIG PORK Note 43
AND CONTINUING WITH LIQUID PIG MANURE TO PRODUCE WINTER WHEAT FOR PIG PORK Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							29.9	29.9				1.51	3.08	1.31	1.87	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			11.9	11.9				0.12		0.12		Note 45
1-10 N leach			FIRST YEAR		0.0518		0.0310				TOTAL N AMOUNTS IN KG AND % LEACHED			58.1	58.1				1.45		0.44		Note 45
			TOTAL		0.0628		0.0380				TOTAL N AMOUNTS IN KG AND %			100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1028		0.0623	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	31	23.3	1.27	2.54	1.10	1.52	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Pig	0.84				0.0	Pig	3.3	0.05	0.0125	0.05	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050	Note 49
Year	N	31	0	20.0	20.0	0	100	11	0	1	15.0	32	6.0	2.5	0.0	0.0	1.0	31	3.5	0.20	0.46	0.18	0.29	Note 47
2	Vol/NH3	Pig	NO	0.0	5.0	NON	100.00	WWH	1.000	YES	8.0	Pig	0.67				0.0	Pig	0.5	0.05	0.0125	0.05	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	1.0	8.0	Pork	3				1.0	Liquid	0.0	0.20	0.0010	0.06	0.0050	Note 49
Year	N	31	0	3.0	3.0	0	100	11	0	1	2.3	32	0.9	0.4	0.0	0.0	0.2	31	0.5	0.03	0.07	0.03	0.04	Note 47
3	Vol/NH3	Pig	NO	0.0	0.8	NON	100.00	WWH	1.000	YES	1.2	Pig	0.67				0.0	Pig	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.2	1.2	Pork	3				0.2	Liquid	0.0	0.03	0.0010	0.01	0.0050	Note 49
Year	N	31	0	0.5	0.5	0	100	1	0	1	0.3	32	0.1	0.1	0.0	0.0	0.0	31	0.1	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Pig	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.2	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.2	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	31	0	0.1	0.1	0	100	10	0	1	0.1	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	31	0	0.0	0.0	0	100	22	1	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	31	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	31	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	31	0	0.0	0.0	0	100	1	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	31	0	0.0	0.0	0	100	10	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.21	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.08	1.87	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.08	1.87	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	3.92	2.71	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND PIG PORK Note 43
AND CONTINUING WITH SEPARATED PIG MANURE TO PRODUCE WINTER WHEAT FOR PIG PORK Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											29.4	29.2	1.70	3.29	1.29	1.86 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							12.6	12.5	0.13		0.13	Note 45
1-10 N leach			FIRST YEAR		0.0556		0.0311				TOTAL N AMOUNTS IN KG AND % LEACHED							58.6	58.3	1.46		0.44	Note 45
			TOTAL		0.0671		0.0379				TOTAL N AMOUNTS IN KG AND %							100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1121		0.0633 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	32	23.3	1.45	2.73	1.10	1.53 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Pig	0.84				0.0	Pig	4.2	0.06	0.0125	0.06	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050 Note 49
Year	N	32	0	19.5	19.5	0	100	11	0	1	14.7	32	5.1	2.1	0.0	0.0	1.0	32	3.0	0.22	0.49	0.17	0.29 Note 47
2	Vol/NH3	Pig	NO	0.0	4.9	NON	100.00	WWH	1.000	YES	8.6	Pig	0.67				0.0	Pig	0.5	0.05	0.0125	0.05	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	1.0	8.6	Pork	3				1.0	Sep	0.0	0.21	0.0105	0.06	0.0050 Note 49
Year	N	32	0	2.5	2.5	0	100	11	0	1	1.9	32	0.6	0.3	0.0	0.0	0.1	32	0.4	0.03	0.06	0.02	0.04 Note 47
3	Vol/NH3	Pig	NO	0.0	0.6	NON	100.00	WWH	1.000	YES	1.1	Pig	0.67				0.0	Pig	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.1	1.1	Pork	3				0.1	Sep	0.0	0.03	0.0105	0.01	0.0050 Note 49
Year	N	32	0	0.3	0.3	0	100	1	0	1	0.2	32	0.1	0.0	0.0	0.0	0.0	32	0.0	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Pig	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.1	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.1	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	0	0.0	0.0	0	100	10	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	0	0.0	0.0	0	100	22	1	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	0	0.0	0.0	0	100	1	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	0	0.0	0.0	0	100	10	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.17	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.29	1.86	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.29	1.86	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	4.10	2.67	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND PIG PORK Note 43
AND CONTINUING WITH PIG DEEP LITTER TO PRODUCE WINTER WHEAT FOR PIG PORK Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											29.4	28.7	1.87	3.48	1.28	1.87 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							14.5	14.2	0.15		0.15	Note 45
1-10 N leach			FIRST YEAR		0.0590		0.0313				TOTAL N AMOUNTS IN KG AND % LEACHED							58.6	57.2	1.47		0.44	Note 45
			TOTAL		0.0710		0.0381				TOTAL N AMOUNTS IN KG AND %							102.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1186		0.0636	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	33	23.3	1.59	2.89	1.09	1.53 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Pig	0.84				0.0	Pig	5.8	0.08	0.0125	0.08	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	33	0	19.7	19.7	0	100	11	0	1	14.8	32	5.1	2.1	0.0	0.0	1.0	33	3.0	0.24	0.51	0.17	0.29 Note 47
2	Vol/NH3	Pig	NO	0.0	4.9	NON	100.00	WWH	1.000	YES	8.6	Pig	0.67				0.0	Pig	0.7	0.06	0.0125	0.06	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	1.0	8.6	Pork	3				1.0	Deep	0.0	0.22	0.0200	0.06	0.0050 Note 49
Year	N	33	0	2.5	2.5	0	100	11	0	1	1.9	32	0.7	0.3	0.0	0.0	0.1	33	0.4	0.03	0.07	0.02	0.04 Note 47
3	Vol/NH3	Pig	NO	0.0	0.6	NON	100.00	WWH	1.000	YES	1.1	Pig	0.67				0.0	Pig	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.1	1.1	Pork	3				0.1	Deep	0.0	0.03	0.0200	0.01	0.0050 Note 49
Year	N	33	0	0.3	0.3	0	100	1	0	1	0.2	32	0.1	0.0	0.0	0.0	0.0	33	0.0	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Pig	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.1	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.1	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	0	0.0	0.0	0	100	10	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	0	0.0	0.0	0	100	22	1	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	0	0.0	0.0	0	100	1	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	0	0.0	0.0	0	100	10	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.18	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.48	1.87	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.48	1.87	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	4.30	2.69	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND PIG PORK Note 43
AND CONTINUING WITH MANURE FROM ROOTING PIGS TO PRODUCE WINTER WHEAT FOR PIG PORK Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											30.5	30.5	2.13	3.81	1.83	2.36 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									4.1	4.1	0.04		0.04	Note 45
1-10 N leach			FIRST YEAR		0.0602		0.0378		TOTAL N AMOUNTS IN KG AND % LEACHED									65.4	65.4	1.63		0.49	Note 45
			TOTAL		0.0777		0.0481		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1249		0.0773 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	34	23.3	1.71	2.95	1.47	1.85 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Pig	0.84				0.0	Pig	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Root	0.0	1.22	0.0200	0.37	0.0200 Note 49
Year	N	34	0	23.3	23.3	0	100	11	0	1	21.7	32	6.1	2.5	0.0	0.0	1.5	34	3.5	0.36	0.73	0.31	0.43 Note 47
2	Vol/NH3	Pig	NO	0.0	1.6	NON	100.00	WWH	1.000	YES	14.1	Pig	0.67				0.0	Pig	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	1.5	14.1	Pork	3				1.5	Root	0.0	0.35	0.0200	0.11	0.0200 Note 49
Year	N	34	0	3.5	3.5	0	100	11	0	1	3.3	32	0.9	0.4	0.0	0.0	0.2	34	0.5	0.05	0.11	0.05	0.06 Note 47
3	Vol/NH3	Pig	NO	0.0	0.2	NON	100.00	WWH	1.000	YES	2.1	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.2	2.1	Pork	3				0.2	Root	0.0	0.05	0.0200	0.02	0.0200 Note 49
Year	N	34	0	0.5	0.5	0	100	1	0	1	0.5	32	0.1	0.1	0.0	0.0	0.0	34	0.1	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.3	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.3	Pork	3				0.0	Root	0.0	0.01	0.0200	0.00	0.0200 Note 49
Year	N	34	0	0.1	0.1	0	100	10	0	1	0.1	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	34	0	0.0	0.0	0	100	22	1	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	34	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	34	0	0.0	0.0	0	100	11	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	34	0	0.0	0.0	0	100	1	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	34	0	0.0	0.0	0	100	10	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Pig	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.17	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.81	2.36	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.81	2.36	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	4.62	3.17	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY MEAT Note 43
AND CONTINUING WITH LIQUID POULTRY MANURE TO PRODUCE WINTER WHEAT FOR POULTRY MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										33.1	33.1	1.47	3.00	1.26	1.79	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3								9.4	9.4	0.09		0.09		Note 45
1-10 N leach			FIRST YEAR		0.0515		0.0305		TOTAL N AMOUNTS IN KG AND % LEACHED								57.5	57.5	1.44		0.43		Note 45
			TOTAL		0.0611		0.0365		TOTAL N AMOUNTS IN KG AND %								100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.0905		0.0540	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	41	19.6	1.26	2.52	1.09	1.50 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	2.0	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050 Note 49
Year	N	41	0	17.6	17.6	0	100	11	0	1	13.2	42	4.6	2.3	0.0	0.0	0.9	41	2.2	0.18	0.42	0.15	0.26 Note 47
2	Vol/NH3	Poultry	NO	0.0	4.4	NON	100.00	WWH	1.000	YES	7.7	Poultry	0.67				0.0	Poultry	0.2	0.05	0.0125	0.05	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.9	7.7	Meat	4				0.9	Liquid	0.0	0.19	0.0010	0.06	0.0050 Note 49
Year	N	41	0	2.0	2.0	0	100	11	0	1	1.5	42	0.5	0.3	0.0	0.0	0.1	41	0.3	0.02	0.05	0.02	0.03 Note 47
3	Vol/NH3	Poultry	NO	0.0	0.5	NON	100.00	WWH	1.000	YES	0.9	Poultry	0.67				0.0	Poultry	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.1	0.9	Meat	4				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050 Note 49
Year	N	41	0	0.2	0.2	0	100	1	0	1	0.2	42	0.1	0.0	0.0	0.0	0.0	41	0.0	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Poultry	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.1	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.1	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	0	0.0	0.0	0	100	22	1	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	0	0.0	0.0	0	100	1	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.16	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.00	1.79	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.00	1.79	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	3.80	2.59	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY MEAT Note 43
AND CONTINUING WITH SEPARATED POULTRY MANURE TO PRODUCE WINTER WHEAT FOR POULTRY MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											32.4	32.4	1.58	3.09	1.21	1.75	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											11.7	11.7	0.12		0.12		Note 45
1-10	N leach		FIRST YEAR		0.0549	0.0308		TOTAL N AMOUNTS IN KG AND % LEACHED											55.9	55.9	1.40		0.42		Note 45
			TOTAL		0.0631	0.0357		TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0954		0.0540	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	42	19.6	1.40	2.69	1.07	1.51	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	4.9	0.07	0.0125	0.07	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050	Note 49
Year	N	42	0	14.7	14.7	0	100	11	0	1	11.0	42	3.8	1.9	0.0	0.0	0.8	42	1.9	0.16	0.36	0.13	0.22	Note 47
2	Vol/NH3	Poultry	NO	0.0	3.7	NON	100.00	WWH	1.000	YES	6.4	Poultry	0.67				0.0	Poultry	0.5	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.8	6.4	Meat	4				0.7	Sep	0.0	0.16	0.0105	0.05	0.0050	Note 49
Year	N	42	0	1.4	1.4	0	100	11	0	1	1.1	42	0.4	0.2	0.0	0.0	0.1	42	0.2	0.02	0.03	0.01	0.02	Note 47
3	Vol/NH3	Poultry	NO	0.0	0.4	NON	100.00	WWH	1.000	YES	0.6	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.1	0.6	Meat	4				0.1	Sep	0.0	0.02	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.1	0.1	0	100	1	0	1	0.1	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.1	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.1	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.0	0.0	0	100	22	1	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.0	0.0	0	100	1	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.13	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.09	1.75	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.09	1.75	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	3.87	2.53	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY MEAT Note 43
AND CONTINUING WITH POULTRY DEEP LITTER TO PRODUCE WINTER WHEAT FOR POULTRY MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											31.2	31.2	1.62	3.14	1.17	1.72 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									13.6	13.6	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0571		0.0311		TOTAL N AMOUNTS IN KG AND % LEACHED									55.3	55.2	1.38		0.41	Note 45
			TOTAL		0.0640		0.0350		TOTAL N AMOUNTS IN KG AND %									100.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1004		0.0549	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	43	19.6	1.48	2.80	1.06	1.53 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	7.8	0.10	0.0125	0.10	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	43	0	11.9	11.9	0	100	11	0	1	8.9	42	2.1	1.1	0.0	0.0	0.6	43	1.1	0.13	0.32	0.10	0.18 Note 47
2	Vol/NH3	Poultry	NO	0.0	3.0	NON	100.00	WWH	1.000	YES	6.2	Poultry	0.67				0.0	Poultry	0.4	0.03	0.0125	0.03	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.6	6.2	Meat	4				0.6	Deep	0.0	0.15	0.0200	0.05	0.0050 Note 49
Year	N	43	0	0.6	0.6	0	100	11	0	1	0.5	42	0.1	0.1	0.0	0.0	0.0	43	0.1	0.01	0.02	0.01	0.01 Note 47
3	Vol/NH3	Poultry	NO	0.0	0.2	NON	100.00	WWH	1.000	YES	0.3	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.3	Meat	4				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	1	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	22	1	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	1	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	1.07	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.14	1.72	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.14	1.72	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	Total including natural	3.88	2.46	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY MEAT Note 43
AND CONTINUING WITH MANURE FROM SCRAPING POULTRY TO PRODUCE WINTER WHEAT FOR POULTRY MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											32.8	32.8	1.94	3.57	1.65	2.16 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							3.7	3.7	0.04		0.04	Note 45
1-10 N leach			FIRST YEAR		0.0587		0.0363				TOTAL N AMOUNTS IN KG AND % LEACHED							63.5	63.5	1.59		0.48	Note 45
			TOTAL		0.0727		0.0441				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1088		0.0659	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	44	19.6	1.64	2.88	1.39	1.78 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Scrap	0.0	1.22	0.0200	0.37	0.0200 Note 49
Year	N	44	0	19.6	19.6	0	100	11	0	1	18.2	42	3.5	1.8	0.0	0.0	1.3	44	1.7	0.28	0.63	0.23	0.35 Note 47
2	Vol/NH3	Poultry	NO	0.0	1.4	NON	100.00	WWH	1.000	YES	13.4	Poultry	0.67				0.0	Poultry	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	1.3	13.4	Meat	4				1.2	Scrap	0.0	0.34	0.0200	0.10	0.0200 Note 49
Year	N	44	0	1.7	1.7	0	100	11	0	1	1.6	42	0.3	0.2	0.0	0.0	0.1	44	0.2	0.02	0.06	0.02	0.03 Note 47
3	Vol/NH3	Poultry	NO	0.0	0.1	NON	100.00	WWH	1.000	YES	1.2	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.1	1.2	Meat	4				0.1	Scrap	0.0	0.03	0.0200	0.01	0.0200 Note 49
Year	N	44	0	0.2	0.2	0	100	1	0	1	0.1	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.1	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	22	1	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	11	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	1	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	10	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.09	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.57	2.16	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.57	2.16	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.76	Total including natural	4.33	2.92	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY EGGS Note 43
AND CONTINUING WITH LIQUID POULTRY MANURE TO PRODUCE WINTER WHEAT FOR POULTRY EGGS Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N	RATIO OF N2O-N TO N IN FIRST CROP		TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED														22.5	22.5	1.61	3.34	1.44	2.05	Note 45
Year N NH3	ACCORDING TO		IPCC 1996	IPCC 2006							TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							14.2	14.2	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR		0.0519	0.0317							TOTAL N AMOUNTS IN KG AND % LEACHED							63.3	63.3	1.58		0.47		Note 45
	TOTAL		0.0680	0.0419							TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.1484		0.0914	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	41	30.4	1.27	2.54	1.14	1.56	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	3.0	0.05	0.0125	0.05	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050	Note 49
Year	N	41	0	27.3	27.3	0	100	11	0	1	20.5	43	7.1	1.7	0.0	0.0	1.4	41	5.4	0.28	0.65	0.25	0.41	Note 47
2	Vol/NH3	Poultry	NO	0.0	6.8	NON	100.00	WWH	1.000	YES	12.0	Poultry	0.67				0.0	Poultry	0.5	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	1.4	12.0	Eggs	4				1.4	Liquid	0.0	0.30	0.0010	0.09	0.0050	Note 49
Year	N	41	0	4.9	4.9	0	100	11	0	1	3.6	43	1.3	0.3	0.0	0.0	0.3	41	1.0	0.05	0.12	0.04	0.07	Note 47
3	Vol/NH3	Poultry	NO	0.0	1.2	NON	100.00	WWH	1.000	YES	2.1	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.3	2.1	Eggs	4				0.2	Liquid	0.0	0.05	0.0010	0.02	0.0050	Note 49
Year	N	41	0	0.9	0.9	0	100	1	0	1	0.6	43	0.2	0.1	0.0	0.0	0.1	41	0.2	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Poultry	NO	0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.1	0.4	Eggs	4				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.2	0.2	0	100	10	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.1	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0	100	22	1	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0	100	1	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0	100	10	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.26	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.34	2.05	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.34	2.05	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	Total including natural	4.21	2.93	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY EGGS Note 43
AND CONTINUING WITH SEPARATED POULTRY MANURE TO PRODUCE WINTER WHEAT FOR POULTRY EGGS Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											21.7	21.7	1.79	3.48	1.35	1.98 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									17.8	17.8	0.18		0.18	Note 45
1-10 N leach			FIRST YEAR		0.0571		0.0322		TOTAL N AMOUNTS IN KG AND % LEACHED									60.5	60.5	1.51		0.45	Note 45
			TOTAL		0.0710		0.0404		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1602		0.0912 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	42	30.4	1.48	2.80	1.12	1.58 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	7.6	0.10	0.0125	0.10	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050 Note 49
Year	N	42	0	22.8	22.8	0	100	11	0	1	17.1	43	5.9	1.4	0.0	0.0	1.2	42	4.5	0.26	0.58	0.20	0.35 Note 47
2	Vol/NH3	Poultry	NO	0.0	5.7	NON	100.00	WWH	1.000	YES	10.0	Poultry	0.67				0.0	Poultry	1.1	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	1.2	10.0	Eggs	4				1.1	Sep	0.0	0.25	0.0105	0.07	0.0050 Note 49
Year	N	42	0	3.4	3.4	0	100	11	0	1	2.5	43	0.9	0.2	0.0	0.0	0.2	42	0.7	0.04	0.09	0.03	0.05 Note 47
3	Vol/NH3	Poultry	NO	0.0	0.8	NON	100.00	WWH	1.000	YES	1.5	Poultry	0.67				0.0	Poultry	0.2	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.2	1.5	Eggs	4				0.2	Sep	0.0	0.04	0.0105	0.01	0.0050 Note 49
Year	N	42	0	0.5	0.5	0	100	1	0	1	0.4	43	0.1	0.0	0.0	0.0	0.0	42	0.1	0.01	0.01	0.00	0.01 Note 47
4	Vol/NH3	Poultry	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.2	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.2	Eggs	4				0.0	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	42	0	0.1	0.1	0	100	10	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	42	0	0.0	0.0	0	100	22	1	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	42	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	42	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	42	0	0.0	0.0	0	100	1	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	42	0	0.0	0.0	0	100	10	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.21	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.48	1.98	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.48	1.98	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	4.32	2.82	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY EGGS Note 43
AND CONTINUING WITH POULTRY DEEP LITTER TO PRODUCE WINTER WHEAT FOR POULTRY EGGS Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP							TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED								20.6	20.5	1.84	3.53	1.26	1.91 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006			TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3								20.5	20.4	0.20		0.20	Note 45
1-10 N leach			FIRST YEAR		0.0606		0.0327			TOTAL N AMOUNTS IN KG AND % LEACHED								59.2	59.0	1.48		0.44	Note 45
			TOTAL		0.0720		0.0390			TOTAL N AMOUNTS IN KG AND %								100.3	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1714		0.0929	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	43	30.4	1.61	2.97	1.09	1.60 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	12.1	0.14	0.0125	0.14	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	43	0	18.5	18.5	0	100	11	0	1	13.8	43	3.3	0.8	0.0	0.0	1.0	43	2.5	0.21	0.51	0.16	0.29 Note 47
2	Vol/NH3	Poultry	NO	0.0	4.6	NON	100.00	WWH	1.000	YES	9.6	Poultry	0.67				0.0	Poultry	1.0	0.06	0.0125	0.06	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	1.0	9.6	Eggs	4				0.9	Deep	0.0	0.24	0.0200	0.07	0.0050 Note 49
Year	N	43	0	1.5	1.5	0	100	11	0	1	1.1	43	0.3	0.1	0.0	0.0	0.1	43	0.2	0.02	0.04	0.01	0.02 Note 47
3	Vol/NH3	Poultry	NO	0.0	0.4	NON	100.00	WWH	1.000	YES	0.8	Poultry	0.67				0.0	Poultry	0.1	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.1	0.8	Eggs	4				0.1	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	43	0	0.1	0.1	0	100	1	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.1	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.1	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	10	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	22	1	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	1	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	0	0.0	0.0	0	100	10	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	1.11	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.53	1.91	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.53	1.91	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	Total including natural	4.30	2.68	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND POULTRY EGGS Note 43
AND CONTINUING WITH MANURE FROM SCRAPING POULTRY TO PRODUCE WINTER WHEAT FOR POULTRY EGGS Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											22.5	22.5	2.39	4.25	2.06	2.65 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									4.7	4.7	0.05		0.05	Note 45
1-10 N leach			FIRST YEAR		0.0631		0.0407		TOTAL N AMOUNTS IN KG AND % LEACHED									72.9	72.9	1.82		0.55	Note 45
			TOTAL		0.0867		0.0541		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1894		0.1181 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	44	30.4	1.85	3.09	1.61	2.00 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Scrap	0.0	1.22	0.0200	0.37	0.0200 Note 49
Year	N	44	0	30.4	30.4	0	100	11	0	1	28.2	43	5.5	1.3	0.0	0.0	1.9	44	4.1	0.46	1.00	0.39	0.57 Note 47
2	Vol/NH3	Poultry	NO	0.0	2.1	NON	100.00	WWH	1.000	YES	20.8	Poultry	0.67				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	1.9	20.8	Eggs	4				1.9	Scrap	0.0	0.52	0.0200	0.16	0.0200 Note 49
Year	N	44	0	4.1	4.1	0	100	11	0	1	3.9	43	0.7	0.2	0.0	0.0	0.3	44	0.6	0.06	0.14	0.05	0.08 Note 47
3	Vol/NH3	Poultry	NO	0.0	0.3	NON	100.00	WWH	1.000	YES	2.8	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.3	2.8	Eggs	4				0.3	Scrap	0.0	0.07	0.0200	0.02	0.0200 Note 49
Year	N	44	0	0.6	0.6	0	100	1	0	1	0.5	43	0.1	0.0	0.0	0.0	0.0	44	0.1	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.4	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.4	Eggs	4				0.0	Scrap	0.0	0.01	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.1	0.1	0	100	10	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	22	1	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	1	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	0	0.0	0.0	0	100	10	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.25	2.65	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.25	2.65	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	5.05	3.45	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND SHEEP MILK/MUTTON Note 43
AND CONTINUING WITH SHEEP DEEP LITTER TO PRODUCE WINTER WHEAT FOR SHEEP MILK/MUTTON Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											19.1	18.0	2.55	4.59	1.65	2.32 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									8.7	8.2	0.09		0.09	Note 45
1-10 N leach			FIRST YEAR		0.0637		0.0323		TOTAL N AMOUNTS IN KG AND % LEACHED									78.2	73.8	1.95		0.59	Note 45
			TOTAL		0.0935		0.0473		TOTAL N AMOUNTS IN KG AND %									105.9	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2399		0.1213 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	51	40.0	5.7	0.0	0.0	9.0	53	34.3	1.83	3.12	1.15	1.59 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Sheep	0.84				0.0	Sheep	5.1	0.07	0.0125	0.07	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/mutt	5				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	53	0	33.9	33.9	0	100	11	0	1	33.9	51	8.1	1.2	0.0	0.0	2.3	53	7.0	0.57	1.17	0.40	0.58 Note 47
2	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	23.4	Sheep	0.67				0.0	Sheep	1.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	2.3	23.4	Milk/mutt	5				2.3	Deep	0.0	0.59	0.0200	0.18	0.0050 Note 49
Year	N	53	0	6.9	6.9	0	100	11	0	1	6.9	51	1.7	0.2	0.0	0.0	0.5	53	1.4	0.12	0.24	0.08	0.12 Note 47
3	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	4.8	Sheep	0.67				0.0	Sheep	0.2	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.5	4.8	Milk/mutt	5				0.5	Deep	0.0	0.12	0.0200	0.04	0.0050 Note 49
Year	N	53	0	1.4	1.4	0	100	1	0	1	1.4	51	0.3	0.0	0.0	0.0	0.1	53	0.3	0.02	0.05	0.02	0.02 Note 47
4	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	1.0	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.1	1.0	Milk/mutt	5				0.1	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	53	0	0.3	0.3	0	100	10	0	1	0.3	51	0.1	0.0	0.0	0.0	0.0	53	0.1	0.00	0.01	0.00	0.00 Note 47
5	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.2	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.2	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	53	0	0.1	0.1	0	100	22	1	1	0.1	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Sheep	0.84				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	53	0	0.0	0.0	0	100	11	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	53	0	0.0	0.0	0	100	11	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	53	0	0.0	0.0	0	100	1	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	53	0	0.0	0.0	0	100	10	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.23	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.59	2.32	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.59	2.32	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	5.44	3.17	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND SHEEP MILK/MUTTON Note 43
AND CONTINUING WITH MANURE FROM GRAZING SHEEP TO PRODUCE WINTER WHEAT FOR SHEEP MILK/MUTTON Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP		TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED												18.4	18.4	2.56	4.53	1.41	2.04	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006					TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							5.0	5.0	0.05		0.05		Note 45
1-10	N leach		FIRST YEAR		0.0647	0.0283					TOTAL N AMOUNTS IN KG AND % LEACHED							76.6	76.6	1.91		0.57		Note 45
			TOTAL		0.0923	0.0415					TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2465		0.1108	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	51	40.0	5.7	0.0	0.0	9.0	54	34.3	1.93	3.17	1.00	1.39	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Sheep	0.84				0.0	Sheep	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/mutt	5				1.9	Graz	0.0	1.22	0.0200	0.37	0.0000	Note 49
Year	N	54	0	34.3	34.3	0	100	11	0	1	31.9	51	6.2	0.9	0.0	0.0	2.2	54	5.3	0.53	1.14	0.35	0.55	Note 47
2	Vol/NH3	Sheep	NO	0.0	2.4	NON	100.00	WWH	1.000	YES	23.5	Sheep	0.67				0.0	Sheep	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	2.2	23.5	Milk/mutt	5				2.1	Graz	0.0	0.59	0.0200	0.18	0.0000	Note 49
Year	N	54	0	5.3	5.3	0	100	11	0	1	4.9	51	1.0	0.1	0.0	0.0	0.3	54	0.8	0.08	0.18	0.05	0.08	Note 47
3	Vol/NH3	Sheep	NO	0.0	0.4	NON	100.00	WWH	1.000	YES	3.6	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.3	3.6	Milk/mutt	5				0.3	Graz	0.0	0.09	0.0200	0.03	0.0000	Note 49
Year	N	54	0	0.8	0.8	0	100	1	0	1	0.8	51	0.1	0.0	0.0	0.0	0.1	54	0.1	0.01	0.03	0.01	0.01	Note 47
4	Vol/NH3	Sheep	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.6	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.1	0.6	Milk/mutt	5				0.0	Graz	0.0	0.01	0.0200	0.00	0.0000	Note 49
Year	N	54	0	0.1	0.1	0	100	10	0	1	0.1	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	0	0.0	0.0	0	100	22	1	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Sheep	0.84				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	0	0.0	0.0	0	100	11	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	0	0.0	0.0	0	100	11	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	0	0.0	0.0	0	100	1	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	0	0.0	0.0	0	100	10	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Sheep	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.18	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.53	2.04	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.53	2.04	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	5.34	2.85	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND GOAT MILK/MEAT Note 43
AND CONTINUING WITH GOAT DEEP LITTER TO PRODUCE WINTER WHEAT FOR GOAT MILK/MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											15.8	14.9	2.40	4.37	1.53	2.25 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									19.3	18.2	0.19		0.19	Note 45
1-10 N leach			FIRST YEAR		0.0643		0.0326		TOTAL N AMOUNTS IN KG AND % LEACHED									70.8	66.8	1.77		0.53	Note 45
			TOTAL		0.0890		0.0460		TOTAL N AMOUNTS IN KG AND %									105.9	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2760		0.1425 Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	61	40.0	3.8	0.0	0.0	9.0	63	36.2	1.86	3.16	1.15	1.60 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Goat	0.84				0.0	Goat	5.4	0.08	0.0125	0.08	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/meat	6				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	63	0	35.7	35.7	0	100	11	0	1	26.8	61	6.4	0.6	0.0	0.0	1.8	63	5.8	0.46	1.02	0.32	0.55 Note 47
2	Vol/NH3	Goat	NO	0.0	8.9	NON	100.00	WWH	1.000	YES	18.5	Goat	0.67				0.0	Goat	0.9	0.10	0.0125	0.10	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	1.8	18.5	Milk/meat	6				1.8	Deep	0.0	0.46	0.0200	0.14	0.0050 Note 49
Year	N	63	0	5.7	5.7	0	100	11	0	1	4.3	61	1.0	0.1	0.0	0.0	0.3	63	0.9	0.07	0.16	0.05	0.09 Note 47
3	Vol/NH3	Goat	NO	0.0	1.4	NON	100.00	WWH	1.000	YES	3.0	Goat	0.67				0.0	Goat	0.1	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.3	3.0	Milk/meat	6				0.3	Deep	0.0	0.07	0.0200	0.02	0.0050 Note 49
Year	N	63	0	0.9	0.9	0	100	1	0	1	0.7	61	0.2	0.0	0.0	0.0	0.1	63	0.2	0.01	0.03	0.01	0.01 Note 47
4	Vol/NH3	Goat	NO	0.0	0.2	NON	100.00	SBA	1.000	YES	0.5	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.1	0.5	Milk/meat	6				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	63	0	0.1	0.1	0	100	10	0	1	0.1	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.1	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	0	0.0	0.0	0	100	22	1	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Goat	0.84				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	0	0.0	0.0	0	100	11	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	0	0.0	0.0	0	100	11	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	0	0.0	0.0	0	100	1	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	0	0.0	0.0	0	100	10	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.23	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O	Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.37	2.25 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.37	2.25 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	5.22	3.11 Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR OIL AND GOAT MILK/MEAT Note 43
AND CONTINUING WITH MANURE FROM GRAZING GOATS TO PRODUCE WINTER WHEAT FOR GOAT MILK/MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											16.4	16.4	2.65	4.66	1.87	2.51	Note 45
Year	N NH3		ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											5.2	5.2	0.05		0.05		Note 45
1-10	N leach		FIRST YEAR	0.0655	0.0357	TOTAL N AMOUNTS IN KG AND % LEACHED											78.4	78.4	1.96		0.59		Note 45
			TOTAL	0.0950	0.0511	TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2839		0.1530	Note 46
Year	N	1	0	100.0	100.0	0	100	22	1	1	97.8	61	40.0	3.8	0.0	0.0	9.0	64	36.2	1.97	3.21	1.36	1.75	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WRS	1.000	YES	48.8	Goat	0.84				0.0	Goat	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/meat	6				1.9	Graz	0.0	1.22	0.0200	0.37	0.0100	Note 49
Year	N	64	0	36.2	36.2	0	100	11	0	1	33.6	61	6.5	0.6	0.0	0.0	2.3	64	5.9	0.57	1.21	0.42	0.63	Note 47
2	Vol/NH3	Goat	NO	0.0	2.5	NON	100.00	WWH	1.000	YES	24.8	Goat	0.67				0.0	Goat	0.0	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	2.3	24.8	Milk/meat	6				2.3	Graz	0.0	0.62	0.0200	0.19	0.0100	Note 49
Year	N	64	0	5.9	5.9	0	100	11	0	1	5.5	61	1.1	0.1	0.0	0.0	0.4	64	1.0	0.09	0.20	0.07	0.10	Note 47
3	Vol/NH3	Goat	NO	0.0	0.4	NON	100.00	WWH	1.000	YES	4.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.4	4.0	Milk/meat	6				0.4	Graz	0.0	0.10	0.0200	0.03	0.0100	Note 49
Year	N	64	0	1.0	1.0	0	100	1	0	1	0.9	61	0.2	0.0	0.0	0.0	0.1	64	0.2	0.01	0.03	0.01	0.02	Note 47
4	Vol/NH3	Goat	NO	0.0	0.1	NON	100.00	SBA	1.000	YES	0.6	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.1	0.6	Milk/meat	6				0.1	Graz	0.0	0.02	0.0200	0.00	0.0100	Note 49
Year	N	64	0	0.2	0.2	0	100	10	0	1	0.1	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.01	0.00	0.00	Note 47
5	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	0	0.0	0.0	0	100	22	1	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WRS	1.000	YES	0.0	Goat	0.84				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	0	0.0	0.0	0	100	11	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	0	0.0	0.0	0	100	11	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	0	0.0	0.0	0	100	1	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	0	0.0	0.0	0	100	10	0	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.19	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.66	2.51	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.66	2.51	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	5.48	3.33	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH NO MANURE TO PRODUCE CLOVER GRASS WITHOUT MANURE FOR HIGH N CROP Note 43
AND CONTINUING WITH GREEN MANURE HIGH N TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											611.1	14.6	63.36	131.53	57.70	87.87 Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									1388.8	33.3	13.89		13.89	Note 45
1-10	N leach		FIRST YEAR		0.0025		0.0025		TOTAL N AMOUNTS IN KG AND % LEACHED									2171.4	52.1	54.28		16.29	Note 45
			TOTAL		0.0322		0.0215		TOTAL N AMOUNTS IN KG AND %									4171.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2152		0.1438 Note 46
Year	N	0	0	0.0	0.0	0	100	2610	1	1	270.2	71	0.0	0.0	4089.5	0.0	0.0	71	4089.5	10.14	10.14	10.14	10.14 Note 47
1	Vol/NH3	None	NO	0.0	0.0	NON	100.00	CGR0	1.296	YES	-3819.3	N crop	0.8				730.2	Green	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach		1.000	1.000		ORG	1.00	1.296	-14.137	0.0	0.0	high N	71				81.4	High	0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	71	0	4089.5	4089.5	0	100	11	0	1	3067.1	21	1145.1	269.6	0.0	0.0	210.9	21	875.5	41.73	95.43	37.28	61.04 Note 47
2	Vol/NH3	Green	NO	0.0	1022.4	NON	100.00	WWH	1.000	YES	1711.1	Cattle	0.67				0.0	Cattle	70.0	10.92	0.0125	10.92	0.0100 Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.627	210.9	1711.1	Dairy	2				206.5	Liquid	0.0	42.78	0.0010	12.83	0.0050 Note 49
Year	N	21	0	818.3	818.3	0	100	11	0	1	613.7	21	229.1	53.9	0.0	0.0	42.2	21	175.2	8.35	19.10	7.46	12.21 Note 47
3	Vol/NH3	Cattle	NO	0.0	204.6	NON	100.00	WWH	1.000	YES	342.4	Cattle	0.67				0.0	Cattle	14.0	2.19	0.0125	2.19	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	42.2	342.4	Dairy	2				41.3	Liquid	0.0	8.56	0.0010	2.57	0.0050 Note 49
Year	N	21	0	163.8	163.8	0	100	1	0	1	122.8	21	45.9	10.5	0.0	0.0	9.5	21	35.4	1.66	3.78	1.48	2.43 Note 47
4	Vol/NH3	Cattle	NO	0.0	40.9	NON	100.00	SBA	1.000	YES	67.5	Cattle	0.65				0.0	Cattle	2.8	0.44	0.0125	0.44	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	9.5	67.5	Dairy	2				7.3	Liquid	0.0	1.69	0.0010	0.51	0.0050 Note 49
Year	N	21	0	33.1	33.1	0	100	10	0	1	24.8	21	9.3	2.1	0.0	0.0	1.9	21	7.1	0.33	0.76	0.30	0.49 Note 47
5	Vol/NH3	Cattle	NO	0.0	8.3	NON	100.00	WBA	1.000	YES	13.6	Cattle	0.66				0.0	Cattle	0.6	0.09	0.0125	0.09	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	1.9	13.6	Dairy	2				1.3	Liquid	0.0	0.34	0.0010	0.10	0.0050 Note 49
Year	N	21	0	6.6	6.6	0	100	2610	1	1	5.0	71	0.0	0.0	70.4	0.0	0.0	71	70.4	0.25	0.27	0.24	0.25 Note 47
6	Vol/NH3	Cattle	NO	0.0	1.7	NON	100.00	ERROR	1.296	YES	-65.5	N crop	0.8				13.5	Green	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.296	-13.128	0.0	0.0	high N	71				1.5	High	0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	71	0	70.4	70.4	0	100	11	0	1	52.8	21	19.7	4.6	0.0	0.0	3.6	21	15.1	0.72	1.64	0.64	1.05 Note 47
7	Vol/NH3	Green	NO	0.0	17.6	NON	100.00	WWH	1.000	YES	29.5	Cattle	0.67				0.0	Cattle	1.2	0.19	0.0125	0.19	0.0100 Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.627	3.6	29.5	Dairy	2				3.6	Liquid	0.0	0.74	0.0010	0.22	0.0050 Note 49
Year	N	21	0	14.1	14.1	0	100	11	0	1	10.6	21	3.9	0.9	0.0	0.0	0.7	21	3.0	0.14	0.33	0.13	0.21 Note 47
8	Vol/NH3	Cattle	NO	0.0	3.5	NON	100.00	WWH	1.000	YES	5.9	Cattle	0.67				0.0	Cattle	0.2	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.7	5.9	Dairy	2				0.7	Liquid	0.0	0.15	0.0010	0.04	0.0050 Note 49
Year	N	21	0	2.8	2.8	0	100	1	0	1	2.1	21	0.8	0.2	0.0	0.0	0.2	21	0.6	0.03	0.07	0.03	0.04 Note 47
9	Vol/NH3	Cattle	NO	0.0	0.7	NON	100.00	SBA	1.000	YES	1.2	Cattle	0.65				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.2	1.2	Dairy	2				0.1	Liquid	0.0	0.03	0.0010	0.01	0.0050 Note 49
Year	N	21	0	0.6	0.6	0	100	10	0	1	0.4	21	0.2	0.0	0.0	0.0	0.0	21	0.1	0.01	0.01	0.01	0.01 Note 47
10	Vol/NH3	Cattle	NO	0.0	0.1	NON	100.00	WBA	1.000	YES	0.2	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.2	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	17.07	23.75	4.75	1.27	0.21	15.94	0.41	0.08	0.02	0.00	63.50	3.72	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	131.53	87.87	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	131.53	87.87	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	17.07	23.75	4.75	1.27	0.21	15.94	0.41	0.08	0.02	0.00	63.50 Total including natural	195.03	151.38	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH NO MANURE TO PRODUCE CLOVER GRASS WITHOUT MANURE FOR LOW N CROP Note 43
AND CONTINUING WITH GREEN MANURE LOW N TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year		Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total	N							RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED								437.9	10.6	58.04	132.04	51.51	82.33	Note 45
Year	N NH3							ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3								1230.3	29.7	12.30		12.30		Note 45
1-10	N leach							FIRST YEAR		0.0025	0.0025	TOTAL N AMOUNTS IN KG AND % LEACHED								2467.9	59.7	61.70		18.51		Note 45
								TOTAL		0.0323	0.0201	TOTAL N AMOUNTS IN KG AND %								4136.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																							0.3015		0.1880	Note 46
Year	N		0	0	0.0	0.0	0	100	2610	1	1	270.2	72	0.0	0.0	4089.5	0.0	0.0	72	4089.5	10.14	10.14	10.14	10.14	Note 47
1	Vol/NH3	None	NO		0.0	0.0	NON	100.00	CGR0	1.296	YES	-3819.3	N crop	0.8				730.2	Green	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000			ORG	1.00	1.296	-14.137	0.0	0.0	low N	72				81.4	Low	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N		72	0	4089.5	4089.5	0	100	11	0	1	3067.1	21	654.3	154.0	0.0	0.0	210.9	21	500.3	41.38	107.05	35.55	62.69	Note 47
2	Vol/NH3	Green	NO		0.0	1022.4	NON	100.00	WWH	1.000	YES	2201.9	Cattle	0.67				0.0	Cattle	40.0	10.62	0.0125	10.62	0.0100	Note 48
	N leach	Low	0.533	1.000			ORG	1.00	1.000	0.787	210.9	2201.9	Dairy	2				206.5	Liquid	0.0	55.05	0.0010	16.51	0.0050	Note 49
Year	N		21	0	467.6	467.6	0	100	11	0	1	350.7	21	130.9	30.8	0.0	0.0	24.1	21	100.1	4.77	10.91	4.26	6.98	Note 47
3	Vol/NH3	Cattle	NO		0.0	116.9	NON	100.00	WWH	1.000	YES	195.7	Cattle	0.67				0.0	Cattle	8.0	1.25	0.0125	1.25	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.000	0.627	24.1	195.7	Dairy	2				23.6	Liquid	0.0	4.89	0.0010	1.47	0.0050	Note 49
Year	N		21	0	93.6	93.6	0	100	1	0	1	70.2	21	26.2	6.0	0.0	0.0	5.4	21	20.2	0.95	2.16	0.85	1.39	Note 47
4	Vol/NH3	Cattle	NO		0.0	23.4	NON	100.00	SBA	1.000	YES	38.5	Cattle	0.65				0.0	Cattle	1.6	0.25	0.0125	0.25	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.000	0.627	5.4	38.5	Dairy	2				4.2	Liquid	0.0	0.96	0.0010	0.29	0.0050	Note 49
Year	N		21	0	18.9	18.9	0	100	10	0	1	14.2	21	5.3	1.2	0.0	0.0	1.1	21	4.1	0.19	0.44	0.17	0.28	Note 47
5	Vol/NH3	Cattle	NO		0.0	4.7	NON	100.00	WBA	1.000	YES	7.8	Cattle	0.66				0.0	Cattle	0.3	0.05	0.0125	0.05	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.000	0.627	1.1	7.8	Dairy	2				0.7	Liquid	0.0	0.19	0.0010	0.06	0.0050	Note 49
Year	N		21	0	3.8	3.8	0	100	2610	1	1	2.8	72	0.0	0.0	40.2	0.0	0.0	72	40.2	0.14	0.15	0.14	0.14	Note 47
6	Vol/NH3	Cattle	NO		0.0	0.9	NON	100.00	ERROR	1.296	YES	-37.4	N crop	0.8				7.7	Green	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.296	-13.128	0.0	0.0	low N	72				0.9	Low	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N		72	0	40.2	40.2	0	100	11	0	1	30.2	21	6.4	1.5	0.0	0.0	2.1	21	4.9	0.41	1.05	0.35	0.62	Note 47
7	Vol/NH3	Green	NO		0.0	10.1	NON	100.00	WWH	1.000	YES	21.7	Cattle	0.67				0.0	Cattle	0.4	0.10	0.0125	0.10	0.0100	Note 48
	N leach	Low	0.533	1.000			ORG	1.00	1.000	0.787	2.1	21.7	Dairy	2				2.0	Liquid	0.0	0.54	0.0010	0.16	0.0050	Note 49
Year	N		21	0	4.6	4.6	0	100	11	0	1	3.5	21	1.3	0.3	0.0	0.0	0.2	21	1.0	0.05	0.11	0.04	0.07	Note 47
8	Vol/NH3	Cattle	NO		0.0	1.2	NON	100.00	WWH	1.000	YES	1.9	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.000	0.627	0.2	1.9	Dairy	2				0.2	Liquid	0.0	0.05	0.0010	0.01	0.0050	Note 49
Year	N		21	0	0.9	0.9	0	100	1	0	1	0.7	21	0.3	0.1	0.0	0.0	0.1	21	0.2	0.01	0.02	0.01	0.01	Note 47
9	Vol/NH3	Cattle	NO		0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.000	0.627	0.1	0.4	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N		21	0	0.2	0.2	0	100	10	0	1	0.1	21	0.1	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO		0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016			ORG	1.00	1.000	0.627	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	17.07	13.57	2.72	0.73	0.12	15.94	0.13	0.03	0.01	0.00	50.31	2.95	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	132.04	82.33	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	132.04	82.33	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	17.07	13.57	2.72	0.73	0.12	15.94	0.13	0.03	0.01	0.00	Total including natural	182.35	132.64	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER WHEAT FOR FOOD Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR FOOD Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							46.7	46.7				1.30	2.60	1.06	1.47	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					2.2	2.2				0.02		0.02		Note 45
1-10 N leach			FIRST YEAR		0.0557		0.0314		TOTAL N AMOUNTS IN KG AND % LEACHED					51.1	51.1				1.28		0.38		Note 45
			TOTAL		0.0557		0.0314		TOTAL N AMOUNTS IN KG AND %					100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.0557		0.0314	Note 46
Year	N	1	0	100.0	100.0	0	100	11	0	1	97.8	8	0.0	0.0	0.0	40.0	6.7	0	0.0	1.30	2.60	1.06	1.47	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWH	1.000	YES	51.1	Food/	0.67				0.0	NONE	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	6.7	51.1	beverage	8				6.6		0.0	1.28	0.0000	0.38	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
2	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
3	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	1	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	10	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	1	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	10	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	1.00	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.60	1.47	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.60	1.47	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	Total including natural	3.24	2.10	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER WHEAT FOR FUEL Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR FUEL Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							46.7				46.7	1.30	2.60	1.06	1.47	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							2.2				2.2	0.02		0.02		Note 45
1-10	N leach		FIRST YEAR		0.0557	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED							51.1				51.1	1.28		0.38		Note 45
			TOTAL		0.0557	0.0314	TOTAL N AMOUNTS IN KG AND %							100.0				100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.0557		0.0314	Note 46
Year	N	1	0	100.0	100.0	0	100	11	0	1	97.8	9	0.0	0.0	0.0	0.0	46.7	0	0.0	1.30	2.60	1.06	1.47	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWH	1.000	YES	51.1	Fuel/	0.67				0.0	NONE	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	6.7	51.1	other	9				6.6		0.0	1.28	0.0000	0.38	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
2	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
3	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	1	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	10	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	1	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	10	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	1.00	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.60	1.47	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.60	1.47	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	Total including natural	3.24	2.10	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE CLOVER GRASS FOR CATTLE DAIRY Note 43
AND CONTINUING WITH LIQUID CATTLE MANURE TO PRODUCE CLOVER GRASS FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											16334.9	38.1	543.30	1024.56	617.71	846.76 Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							12095.7	28.2	120.96		120.96	Note 45
1-10	N leach		FIRST YEAR		0.0120		0.0144				TOTAL N AMOUNTS IN KG AND % LEACHED							14412.1	33.6	360.30		108.09	Note 45
			TOTAL		0.8770		0.7248				TOTAL N AMOUNTS IN KG AND %							42842.7	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.0627		0.0518	Note 46
Year	N	1	0	100.0	100.0	0	100	261	0	1	97.8	21	1168.3	329.7	0.0	0.0	0.0	21	838.7	13.30	14.00	16.15	16.84 Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	CGR	1.000	YES	-1070.5	Cattle	0.8				779.9	Cattle	67.1	0.69	0.0125	0.69	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	-10.946	0.0	0.0	Dairy	2				125.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	783.9	783.9	0	100	261	1	1	587.9	21	22441.1	6332.0	0.0	0.0	0.0	21	16109.1	90.17	105.01	147.98	162.82 Note 47
2	Vol/NH3	Cattle	NO	0.0	196.0	NON	100.00	CGR	3.500	YES	-21853.1	Cattle	0.8				4688.3	Cattle	1288.7	14.85	0.0125	14.85	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				751.4	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	15057.5	15057.5	0	100	11	0	1	11293.1	21	4216.1	992.6	0.0	0.0	776.7	21	3223.5	153.63	351.36	137.26	224.74 Note 47
3	Vol/NH3	Cattle	NO	0.0	3764.4	NON	100.00	WWH	1.000	YES	6300.3	Cattle	0.67				0.0	Cattle	257.9	40.22	0.0125	40.22	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	776.7	6300.3	Dairy	2				760.2	Liquid	0.0	157.51	0.0010	47.25	0.0050 Note 49
Year	N	21	0	3013.1	3013.1	0	100	11	0	1	2259.8	21	843.7	198.6	0.0	0.0	155.4	21	645.0	30.74	70.31	27.47	44.97 Note 47
4	Vol/NH3	Cattle	NO	0.0	753.3	NON	100.00	WWH	1.000	YES	1260.7	Cattle	0.67				0.0	Cattle	51.6	8.05	0.0125	8.05	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	155.4	1260.7	Dairy	2				152.1	Liquid	0.0	31.52	0.0010	9.46	0.0050 Note 49
Year	N	21	0	602.9	602.9	0	100	11	0	1	452.2	21	168.8	39.7	0.0	0.0	31.1	21	129.1	6.15	14.07	5.50	9.00 Note 47
5	Vol/NH3	Cattle	NO	0.0	150.7	NON	100.00	WWH	1.000	YES	252.3	Cattle	0.67				0.0	Cattle	10.3	1.61	0.0125	1.61	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	31.1	252.3	Dairy	2				30.4	Liquid	0.0	6.31	0.0010	1.89	0.0050 Note 49
Year	N	21	0	120.6	120.6	0	100	261	0	1	90.5	21	986.7	278.4	0.0	0.0	0.0	21	708.3	12.25	13.12	14.63	15.50 Note 47
6	Vol/NH3	Cattle	NO	0.0	30.2	NON	100.00	CGR	1.000	YES	-896.2	Cattle	0.8				721.6	Cattle	56.7	0.87	0.0125	0.87	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	-9.904	0.0	0.0	Dairy	2				115.6	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	662.1	662.1	0	100	261	1	1	496.5	21	18952.6	5347.7	0.0	0.0	0.0	21	13604.9	76.15	88.69	124.97	137.51 Note 47
7	Vol/NH3	Cattle	NO	0.0	165.5	NON	100.00	CGR	3.500	YES	-18456.0	Cattle	0.8				3959.5	Cattle	1088.4	12.54	0.0125	12.54	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				634.6	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	0	12716.8	12716.8	0	100	11	0	1	9537.6	21	3560.7	838.3	0.0	0.0	655.9	21	2722.4	129.75	296.74	115.92	189.80 Note 47
8	Vol/NH3	Cattle	NO	0.0	3179.2	NON	100.00	WWH	1.000	YES	5320.9	Cattle	0.67				0.0	Cattle	217.8	33.97	0.0125	33.97	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	655.9	5320.9	Dairy	2				642.0	Liquid	0.0	133.02	0.0010	39.91	0.0050 Note 49
Year	N	21	0	2544.7	2544.7	0	100	11	0	1	1908.5	21	712.5	167.7	0.0	0.0	131.3	21	544.8	25.96	59.38	23.20	37.98 Note 47
9	Vol/NH3	Cattle	NO	0.0	636.2	NON	100.00	WWH	1.000	YES	1064.7	Cattle	0.67				0.0	Cattle	43.6	6.80	0.0125	6.80	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	131.3	1064.7	Dairy	2				128.5	Liquid	0.0	26.62	0.0010	7.99	0.0050 Note 49
Year	N	21	0	509.2	509.2	0	100	11	0	1	381.9	21	142.6	33.6	0.0	0.0	26.3	21	109.0	5.20	11.88	4.64	7.60 Note 47
10	Vol/NH3	Cattle	NO	0.0	127.3	NON	100.00	WWH	1.000	YES	213.1	Cattle	0.67				0.0	Cattle	8.7	1.36	0.0125	1.36	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	26.3	213.1	Dairy	2				25.7	Liquid	0.0	5.33	0.0010	1.60	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	4.88	122.18	87.44	17.50	3.50	5.37	103.19	73.85	14.78	2.96	435.65	89.31	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	1024.56	846.76	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	1024.56	846.76	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	4.88	122.18	87.44	17.50	3.50	5.37	103.19	73.85	14.78	2.96	435.65	Total including natural	1460.21	1282.41	Note 51

D2 N CHAIN CALCULATIONS SHEET D: N CHAINS PARTLY BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com D2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE CLOVER GRASS FOR CATTLE DAIRY Note 43
AND CONTINUING WITH LIQUID CATTLE MANURE TO PRODUCE CLOVER GRASS FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop #	Crop Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use #	Use Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling #	Manure handling Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44 Note 44 Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP					TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											11654.4	50.1	254.14	464.83	286.56	386.99	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											5318.4	22.9	53.18		53.18		Note 45
1-10	N leach		FIRST YEAR		0.0120	0.0144		TOTAL N AMOUNTS IN KG AND % LEACHED											6300.3	27.1	157.51		47.25		Note 45
			TOTAL		0.3979	0.3312		TOTAL N AMOUNTS IN KG AND %											23273.1	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																						0.0399		0.0332	Note 46
Year	N	1	0	100.0	100.0	0	100	261	0	1	97.8	21	1168.3	329.7	0.0	0.0	0.0	21	838.7	13.30	14.00	16.15	16.84	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	CGR	1.000	YES	-1070.5	Cattle	0.8				779.9	Cattle	67.1	0.69	0.0125	0.69	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	-10.946	0.0	0.0	Dairy	2				125.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	783.9	783.9	0	100	261	1	1	587.9	21	22441.1	6332.0	0.0	0.0	0.0	21	16109.1	90.17	105.01	147.98	162.82	Note 47
2	Vol/NH3	Cattle	NO	0.0	196.0	NON	100.00	CGR	3.500	YES	-21853.1	Cattle	0.8				4688.3	Cattle	1288.7	14.85	0.0125	14.85	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				751.4	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	15057.5	15057.5	0	100	11	0	1	11293.1	8	0.0	0.0	0.0	4216.1	776.7	0	0.0	150.67	345.82	122.43	207.33	Note 47
3	Vol/NH3	Cattle	NO	0.0	3764.4	NON	100.00	WWH	1.000	YES	6300.3	Food/	0.67				0.0	NONE	0.0	37.64	0.0125	37.64	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	776.7	6300.3	beverage	8				760.2		0.0	157.51	0.0000	47.25	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	261	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Cattle	0.8				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	-10.683	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	261	1	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	CGR	3.500	YES	0.0	Cattle	0.8				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	4.88	122.18	87.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	214.50	43.97	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	464.83	386.99	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	464.83	386.99	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	4.88	122.18	87.44	0.00	0.00	0.00	0.00	0.00	0.00	214.50	Total including natural	679.33	601.50	Note 51

SUMMARY CATTLE DAIRY

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			CATTLE DAIRY					Note 43
AND CONTINUING WITH	LIQUID CATTLE MANURE			TO PRODUCE	WINTER WHEAT FOR			CATTLE DAIRY					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				24.73	24.60	1.61	3.30	1.43	2.03 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				13.26	13.19	0.13		0.13	Note 45
1-10 N leach	FIRST YEAR	0.0517	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED				62.53	62.21	1.56		0.47	Note 45
	TOTAL	0.0674	0.0414	TOTAL N AMOUNTS IN KG AND %				100.52	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1336		0.0822 Note 46
								Total/year 1					
Area with crop, ha								0.89	1.28				Note 50
Natural background emissions, kg N2O-N/ha:								0.89			4.19		2.92 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			CATTLE DAIRY					Note 43
AND CONTINUING WITH	SEPARATED CATTLE MANURE			TO PRODUCE	WINTER WHEAT FOR			CATTLE DAIRY					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				24.65	24.52	1.93	3.64	1.44	2.04 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				12.36	12.30	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.0567	0.0313	TOTAL N AMOUNTS IN KG AND % LEACHED				63.51	63.18	1.59		0.48	Note 45
	TOTAL	0.0743	0.0416	TOTAL N AMOUNTS IN KG AND %				100.53	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1477		0.0828 Note 46
								Total/year 1					
Area with crop, ha								0.88	1.26				Note 50
Natural background emissions, kg N2O-N/ha:								0.88			4.52		2.92 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			CATTLE DAIRY					Note 43
AND CONTINUING WITH	CATTLE DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR			CATTLE DAIRY					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				24.25	23.10	2.23	4.05	1.45	2.09 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				13.22	12.60	0.13		0.13	Note 45
1-10 N leach	FIRST YEAR	0.0619	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED				67.48	64.30	1.69		0.51	Note 45
	TOTAL	0.0826	0.0426	TOTAL N AMOUNTS IN KG AND %				104.96	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1670		0.0862 Note 46
								Total/year 1					
Area with crop, ha								0.83	1.20				Note 50
Natural background emissions, kg N2O-N/ha:								0.83			4.88		2.92 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			CATTLE DAIRY					Note 43
AND CONTINUING WITH	MANURE FROM GRAZING CATTLE			TO PRODUCE	WINTER WHEAT FOR			CATTLE DAIRY					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				24.33	24.33	2.31	4.13	1.98	2.56 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				4.49	4.49	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.0622	0.0398	TOTAL N AMOUNTS IN KG AND % LEACHED				71.18	71.18	1.78		0.53	Note 45
	TOTAL	0.0842	0.0523	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1697		0.1054 Note 46
								Total/year 1					
Area with crop, ha								0.79	1.14				Note 50
Natural background emissions, kg N2O-N/ha:								0.79			4.92		3.36 Note 51

SUMMARY CATTLE BEEF

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		CATTLE BEEF					Note 43
AND CONTINUING WITH	LIQUID CATTLE MANURE			TO PRODUCE	WINTER WHEAT FOR		CATTLE BEEF					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			23.29	23.16	1.63	3.35	1.46	2.07 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.91	13.83	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0517	0.0316	TOTAL N AMOUNTS IN KG AND % LEACHED			63.35	63.00	1.58		0.48	Note 45
	TOTAL	0.0683	0.0422	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1439		0.0889 Note 46
								Total/year 1				
Area with crop, ha							0.90	1.30				Note 50
Natural background emissions, kg N2O-N/ha:							0.90			4.25		2.97 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		CATTLE BEEF					Note 43
AND CONTINUING WITH	SEPARATED CATTLE MANURE			TO PRODUCE	WINTER WHEAT FOR		CATTLE BEEF					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			23.23	23.10	1.97	3.71	1.47	2.08 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			12.96	12.89	0.13		0.13	Note 45
1-10 N leach	FIRST YEAR	0.0570	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED			64.38	64.02	1.61		0.48	Note 45
	TOTAL	0.0756	0.0424	TOTAL N AMOUNTS IN KG AND %			100.56	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1597		0.0895 Note 46
								Total/year 1				
Area with crop, ha							0.89	1.28				Note 50
Natural background emissions, kg N2O-N/ha:							0.83			4.60		2.97 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		CATTLE BEEF					Note 43
AND CONTINUING WITH	CATTLE DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR		CATTLE BEEF					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			22.85	21.72	2.29	4.14	1.48	2.13 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.84	13.16	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0624	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED			68.54	65.13	1.71		0.51	Note 45
	TOTAL	0.0844	0.0434	TOTAL N AMOUNTS IN KG AND %			105.24	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1811		0.0931 Note 46
								Total/year 1				
Area with crop, ha							0.84	1.21				Note 50
Natural background emissions, kg N2O-N/ha:							0.84			4.98		2.97 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		CATTLE BEEF					Note 43
AND CONTINUING WITH	MANURE FROM GRAZING CATTLE			TO PRODUCE	WINTER WHEAT FOR		CATTLE BEEF					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			22.96	22.96	2.36	4.22	2.04	2.63 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.62	4.62	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0628	0.0404	TOTAL N AMOUNTS IN KG AND % LEACHED			72.43	72.43	1.81		0.54	Note 45
	TOTAL	0.0861	0.0536	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1839		0.1145 Note 46
								Total/year 1				
Area with crop, ha							0.80	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			5.02		3.43 Note 51

SUMMARY PIG PORK

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		PIG PORK					Note 43
AND CONTINUING WITH	LIQUID PIG MANURE			TO PRODUCE	WINTER WHEAT FOR		PIG PORK					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			29.94	29.94	1.51	3.08	1.31	1.87 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			11.92	11.92	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.0518	0.0310	TOTAL N AMOUNTS IN KG AND % LEACHED			58.14	58.14	1.45		0.44	Note 45
	TOTAL	0.0628	0.0380	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1028		0.0623 Note 46
							Total/year 1					
Area with crop, ha						0.84	1.21					Note 50
Natural background emissions, kg N2O-N/ha:						0.84				3.92		2.71 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		PIG PORK					Note 43
AND CONTINUING WITH	SEPARATED PIG MANURE			TO PRODUCE	WINTER WHEAT FOR		PIG PORK					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			29.35	29.20	1.70	3.29	1.29	1.86 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			12.60	12.53	0.13		0.13	Note 45
1-10 N leach	FIRST YEAR	0.0556	0.0311	TOTAL N AMOUNTS IN KG AND % LEACHED			58.57	58.27	1.46		0.44	Note 45
	TOTAL	0.0671	0.0379	TOTAL N AMOUNTS IN KG AND %			100.52	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1121		0.0633 Note 46
							Total/year 1					
Area with crop, ha						0.81	1.17					Note 50
Natural background emissions, kg N2O-N/ha:						0.81				4.10		2.67 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		PIG PORK					Note 43
AND CONTINUING WITH	PIG DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR		PIG PORK					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			29.38	28.65	1.87	3.48	1.28	1.87 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.51	14.15	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0590	0.0313	TOTAL N AMOUNTS IN KG AND % LEACHED			58.65	57.19	1.47		0.44	Note 45
	TOTAL	0.0710	0.0381	TOTAL N AMOUNTS IN KG AND %			102.54	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1186		0.0636 Note 46
							Total/year 1					
Area with crop, ha						0.82	1.18					Note 50
Natural background emissions, kg N2O-N/ha:						0.82				4.30		2.69 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		PIG PORK					Note 43
AND CONTINUING WITH	MANURE FROM ROOTING PIGS			TO PRODUCE	WINTER WHEAT FOR		PIG PORK					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			30.50	30.50	2.13	3.81	1.83	2.36 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.12	4.12	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.0602	0.0378	TOTAL N AMOUNTS IN KG AND % LEACHED			65.38	65.38	1.63		0.49	Note 45
	TOTAL	0.0777	0.0481	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1249		0.0773 Note 46
							Total/year 1					
Area with crop, ha						0.81	1.17					Note 50
Natural background emissions, kg N2O-N/ha:						0.81				4.62		3.17 Note 51

SUMMARY POULTRY MEAT

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY MEAT					Note 43
AND CONTINUING WITH	LIQUID POULTRY MANURE			TO PRODUCE	WINTER WHEAT FOR		POULTRY MEAT					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			33.11	33.11	1.47	3.00	1.26	1.79 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			9.39	9.39	0.09		0.09	Note 45
1-10 N leach	FIRST YEAR	0.0515	0.0305	TOTAL N AMOUNTS IN KG AND % LEACHED			57.49	57.49	1.44		0.43	Note 45
	TOTAL	0.0611	0.0365	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0905		0.0540 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.16				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			3.80		2.59 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY MEAT					Note 43
AND CONTINUING WITH	SEPARATED POULTRY MANURE			TO PRODUCE	WINTER WHEAT FOR		POULTRY MEAT					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			32.44	32.44	1.58	3.09	1.21	1.75 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			11.68	11.68	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.0549	0.0308	TOTAL N AMOUNTS IN KG AND % LEACHED			55.88	55.88	1.40		0.42	Note 45
	TOTAL	0.0631	0.0357	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0954		0.0540 Note 46
							Total/year 1					
Area with crop, ha							0.78	1.13				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			3.87		2.53 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY MEAT					Note 43
AND CONTINUING WITH	POULTRY DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR		POULTRY MEAT					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			31.25	31.20	1.62	3.14	1.17	1.72 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.63	13.61	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0571	0.0311	TOTAL N AMOUNTS IN KG AND % LEACHED			55.28	55.19	1.38		0.41	Note 45
	TOTAL	0.0640	0.0350	TOTAL N AMOUNTS IN KG AND %			100.16	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1004		0.0549 Note 46
							Total/year 1					
Area with crop, ha							0.74	1.07				Note 50
Natural background emissions, kg N2O-N/ha:							0.74			3.88		2.46 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY MEAT					Note 43
AND CONTINUING WITH	MANURE FROM SCRAPING POULTRY			TO PRODUCE	WINTER WHEAT FOR		POULTRY MEAT					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			32.79	32.79	1.94	3.57	1.65	2.16 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			3.70	3.70	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.0587	0.0363	TOTAL N AMOUNTS IN KG AND % LEACHED			63.50	63.50	1.59		0.48	Note 45
	TOTAL	0.0727	0.0441	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1088		0.0659 Note 46
Area with crop, ha	Total/year 1						0.76	1.09				Note 50
Natural background emissions, kg N2O-N/ha:							0.76			4.33		2.92 Note 51

SUMMARY POULTRY EGGS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY EGGS					Note 43
AND CONTINUING WITH	LIQUID POULTRY MANURE			TO PRODUCE	WINTER WHEAT FOR		POULTRY EGGS					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			22.49	22.49	1.61	3.34	1.44	2.05 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.20	14.20	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0519	0.0317	TOTAL N AMOUNTS IN KG AND % LEACHED			63.32	63.32	1.58		0.47	Note 45
	TOTAL	0.0680	0.0419	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1484		0.0914 Note 46
							Total/year 1					
Area with crop, ha							0.87	1.26				Note 50
Natural background emissions, kg N2O-N/ha:							0.87			4.21		2.93 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY EGGS					Note 43
AND CONTINUING WITH	SEPARATED POULTRY MANURE			TO PRODUCE	WINTER WHEAT FOR		POULTRY EGGS					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			21.74	21.74	1.79	3.48	1.35	1.98 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			17.79	17.79	0.18		0.18	Note 45
1-10 N leach	FIRST YEAR	0.0571	0.0322	TOTAL N AMOUNTS IN KG AND % LEACHED			60.47	60.47	1.51		0.45	Note 45
	TOTAL	0.0710	0.0404	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1602		0.0912 Note 46
							Total/year 1					
Area with crop, ha							0.84	1.21				Note 50
Natural background emissions, kg N2O-N/ha:							0.84			4.32		2.82 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY EGGS					Note 43
AND CONTINUING WITH	POULTRY DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR		POULTRY EGGS					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			20.59	20.54	1.84	3.53	1.26	1.91 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			20.47	20.42	0.20		0.20	Note 45
1-10 N leach	FIRST YEAR	0.0606	0.0327	TOTAL N AMOUNTS IN KG AND % LEACHED			59.19	59.04	1.48		0.44	Note 45
	TOTAL	0.0720	0.0390	TOTAL N AMOUNTS IN KG AND %			100.26	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1714		0.0929 Note 46
							Total/year 1					
Area with crop, ha							0.77	1.11				Note 50
Natural background emissions, kg N2O-N/ha:							0.77			4.30		2.68 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND		POULTRY EGGS					Note 43
AND CONTINUING WITH	MANURE FROM SCRAPING POULTRY			TO PRODUCE	WINTER WHEAT FOR		POULTRY EGGS					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			22.46	22.46	2.39	4.25	2.06	2.65 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.66	4.66	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0631	0.0407	TOTAL N AMOUNTS IN KG AND % LEACHED			72.88	72.88	1.82		0.55	Note 45
	TOTAL	0.0867	0.0541	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1894		0.1181 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			5.05		3.45 Note 51

SUMMARY SHEEP AND GOATS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			SHEEP MILK/MUTTON					Note 43
AND CONTINUING WITH	SHEEP DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR			SHEEP MILK/MUTTON					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				19.12	18.04	2.55	4.59	1.65	2.32 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				8.66	8.18	0.09		0.09	Note 45
1-10 N leach	FIRST YEAR	0.0637	0.0323	TOTAL N AMOUNTS IN KG AND % LEACHED				78.15	73.78	1.95		0.59	Note 45
	TOTAL	0.0935	0.0473	TOTAL N AMOUNTS IN KG AND %				105.93	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.2399		0.1213 Note 46
									Total/year 1				
Area with crop, ha								0.85	1.23				Note 50
Natural background emissions, kg N2O-N/ha:								0.85			5.44		3.17 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			SHEEP MILK/MUTTON					Note 43
AND CONTINUING WITH	MANURE FROM GRAZING SHEEP			TO PRODUCE	WINTER WHEAT FOR			SHEEP MILK/MUTTON					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				18.36	18.36	2.56	4.53	1.41	2.04 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				5.04	5.04	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0647	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED				76.59	76.59	1.91		0.57	Note 45
	TOTAL	0.0923	0.0415	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.2465		0.1108 Note 46
									Total/year 1				
Area with crop, ha								0.82	1.18				Note 50
Natural background emissions, kg N2O-N/ha:								0.82			5.34		2.85 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			GOAT MILK/MEAT					Note 43
AND CONTINUING WITH	GOAT DEEP LITTER			TO PRODUCE	WINTER WHEAT FOR			GOAT MILK/MEAT					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				15.82	14.93	2.40	4.37	1.53	2.25 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				19.30	18.22	0.19		0.19	Note 45
1-10 N leach	FIRST YEAR	0.0643	0.0326	TOTAL N AMOUNTS IN KG AND % LEACHED				70.81	66.85	1.77		0.53	Note 45
	TOTAL	0.0890	0.0460	TOTAL N AMOUNTS IN KG AND %				105.93	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.2760		0.1425 Note 46
									Total/year 1				
Area with crop, ha								0.85	1.23				Note 50
Natural background emissions, kg N2O-N/ha:								0.85			5.22		3.11 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR OIL AND			GOAT MILK/MEAT					Note 43
AND CONTINUING WITH	MANURE FROM GRAZING GOATS			TO PRODUCE	WINTER WHEAT FOR			GOAT MILK/MEAT					Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				16.40	16.40	2.65	4.66	1.87	2.51 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				5.22	5.22	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0655	0.0357	TOTAL N AMOUNTS IN KG AND % LEACHED				78.38	78.38	1.96		0.59	Note 45
	TOTAL	0.0950	0.0511	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.2839		0.1530 Note 46
									Total/year 1				
Area with crop, ha								0.82	1.19				Note 50
Natural background emissions, kg N2O-N/ha:								0.82			5.48		3.33 Note 51

SUMMARY N FIXATION FOR N CROP

N CHAIN STARTING WITH	NO MANURE			TO PRODUCE	CLOVER GRASS WITHOUT MANURE FOR	HIGH N CROP							Note 43
AND CONTINUING WITH	GREEN MANURE HIGH N			TO PRODUCE	WINTER WHEAT FOR	CATTLE DAIRY							Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		611	14.65	63	132	58	88		Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		1389	33.29	14		14			Note 45
1-10 N leach	FIRST YEAR	0.0025	0.0025	TOTAL N AMOUNTS IN KG AND % LEACHED		2171	52.06	54		16			Note 45
	TOTAL	0.0322	0.0215	TOTAL N AMOUNTS IN KG AND %		4171	100.00						Note 45
N2O-N/N in food/beverage/fuel/other									0.2152		0.1438		Note 46
							Total/year 1						
Area with crop, ha						63.50	3.72						Note 50
Natural background emissions, kg N2O-N/ha:						63.50			195		151		Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	1145.06	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	40.00	Note 47
Relative value of green manure, %	2862.66	

N CHAIN STARTING WITH	NO MANURE			TO PRODUCE	CLOVER GRASS WITHOUT MANURE FOR	LOW N CROP							Note 43
AND CONTINUING WITH	GREEN MANURE LOW N			TO PRODUCE	WINTER WHEAT FOR	CATTLE DAIRY							Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		438	10.59	58	132	52	82		Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		1230	29.75	12		12			Note 45
1-10 N leach	FIRST YEAR	0.0025	0.0025	TOTAL N AMOUNTS IN KG AND % LEACHED		2468	59.67	62		19			Note 45
	TOTAL	0.0323	0.0201	TOTAL N AMOUNTS IN KG AND %		4136	100.00						Note 45
N2O-N/N in food/beverage/fuel/other									0.3015		0.1880		Note 46
							Total/year 1						
Area with crop, ha						50.31	2.95						Note 50
Natural background emissions, kg N2O-N/ha:						50.31			182		133		Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	654.32	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	40.00	Note 47
Relative value of green manure, %	1635.81	

SUMMARY FOOD, FUEL, AND N+N FIXATION FOR FODDER AND FOOD

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER WHEAT FOR		FOOD						Note 43
AND CONTINUING WITH	NO MANURE			TO PRODUCE	NOTHING FOR		FOOD						Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			46.73	46.73	1.30	2.60	1.06	1.47	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			2.20	2.20	0.02		0.02		Note 45
1-10 N leach	FIRST YEAR	0.0557	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED			51.07	51.07	1.28		0.38		Note 45
	TOTAL	0.0557	0.0314	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0557		0.0314	Note 46
							Total/year 1						
Area with crop, ha						0.64	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.64				3.24		2.10	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER WHEAT FOR		FUEL						Note 43
AND CONTINUING WITH	NO MANURE			TO PRODUCE	NOTHING FOR		FUEL						Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			46.73	46.73	1.30	2.60	1.06	1.47	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			2.20	2.20	0.02		0.02		Note 45
1-10 N leach	FIRST YEAR	0.0557	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED			51.07	51.07	1.28		0.38		Note 45
	TOTAL	0.0557	0.0314	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0557		0.0314	Note 46
							Total/year 1						
Area with crop, ha						0.64	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.64				3.24		2.10	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	CLOVER GRASS FOR		CATTLE DAIRY						Note 43
AND CONTINUING WITH	LIQUID CATTLE MANURE			TO PRODUCE	CLOVER GRASS FOR		CATTLE DAIRY						Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			16335	38.13	543	1025	618	847	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			12096	28.23	121		121		Note 45
1-10 N leach	FIRST YEAR	0.0120	0.0144	TOTAL N AMOUNTS IN KG AND % LEACHED			14412	33.64	360		108		Note 45
	TOTAL	0.8770	0.7248	TOTAL N AMOUNTS IN KG AND %			42843	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0627		0.0518	Note 46
							Total/year 1						
Area with crop, ha						435.65	89.31						Note 50
Natural background emissions, kg N2O-N/ha:						435.65				1460		1282	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	CLOVER GRASS FOR		CATTLE DAIRY						Note 43
AND CONTINUING WITH	LIQUID CATTLE MANURE			TO PRODUCE	CLOVER GRASS FOR		CATTLE DAIRY						Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED			11654	50.08	254	465	287	387	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			5318	22.85	53		53		Note 45
1-10 N leach	FIRST YEAR	0.0120	0.0144	TOTAL N AMOUNTS IN KG AND % LEACHED			6300	27.07	158		47		Note 45
	TOTAL	0.3979	0.3312	TOTAL N AMOUNTS IN KG AND %			23273	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0399		0.0332	Note 46
							Total/year 1						
Area with crop, ha						214.50	43.97						Note 50
Natural background emissions, kg N2O-N/ha:						214.50				679		601	Note 51

SUMMARY CATTLE

RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
FIRST YEAR	0.0517	0.0628	0.0313	0.0404
TOTAL	0.0674	0.0861	0.0414	0.0536

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.30	4.22	2.03	2.63

N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
0.1336	0.1839	0.0822	0.1145

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha: MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
0.79	0.90	0.79	1.15	4.19	5.02	2.92	3.43

SUMMARY PIGS

RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
FIRST YEAR	0.0518	0.0602	0.0310	0.0378
TOTAL	0.0628	0.0777	0.0379	0.0481

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.08	3.81	1.86	2.36

N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
0.1028	0.1249	0.0623	0.0773

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha: MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
0.81	0.84	0.81	0.84	3.92	4.62	2.67	3.17

SUMMARY POULTRY

RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
FIRST YEAR	0.0515	0.0631	0.0305	0.0407
TOTAL	0.0611	0.0867	0.0350	0.0541

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3	4.25	1.72	2.65

N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
0.0905	0.1894	0.0540	0.1181

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha: MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
0.74	0.87	0.74	0.87	3.80	5.05	2.46	3.45

SUMMARY SHEEP AND GOATS

RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
FIRST YEAR	0.0637	0.0655	0.0283	0.0357
TOTAL	0.0890	0.0950	0.0415	0.0511

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.37	4.66	2.04	2.51

N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
0.2399	0.2839	0.1108	0.1530

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha: MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
0.82	0.85	0.82	0.85	5.22	5.48	2.85	3.33

SUMMARY FODDER

RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
FIRST YEAR	0.0515	0.0655	0.0283	0.0407
TOTAL	0.0611	0.0950	0.0350	0.0541

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.00	4.66	1.72	2.65

N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
0.0905	0.2839	0.0540	0.1530

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha: MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
0.74	0.90	0.74	1.15	3.80	5.48	2.46	3.45