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

Crop, fodder/food	WRS	WWH	WWB	WBA	RYE	TRI	SBA	SWH	OAT	MCC	MCW	GRO	GCR	CGR	GHP	GRP	CGR0	CONC	Note 1
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	Note 1
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	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	Note 34

Manure/fertilizer kind, #	None	N	Cattle manure			Pig manure				Poultry manure					Sheep manure		Goat manure		Green	Green	None	None	Note 35
	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			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											13.9	13.8	1.73	3.69	1.56	2.24 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									13.7	13.7	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0719		0.0431		TOTAL N AMOUNTS IN KG AND % LEACHED									72.9	72.5	1.82		0.55	Note 45
			TOTAL		0.0923		0.0560		TOTAL N AMOUNTS IN KG AND %									100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2652		0.1610 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	21	40.0	11.8	0.0	0.0	0.0	21	28.2	1.38	2.87	1.24	1.72 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Dairy	2				10.9	Liquid	0.0	1.45	0.0010	0.43	0.0050 Note 49
Year	N	21	1	26.4	25.8	0	100	11	0	0	19.3	21	7.2	1.7	0.0	0.0	0.0	21	5.5	0.28	0.66	0.25	0.42 Note 47
2	Vol/NH3	Cattle	YES	0.6	6.4	NON	100.00	WWH	1.000	NO	12.1	Cattle	0.67				0.0	Cattle	0.4	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	12.1	Dairy	2				2.6	Liquid	0.0	0.30	0.0010	0.09	0.0050 Note 49
Year	N	21	1	5.2	5.0	0	100	11	0	0	3.8	21	1.4	0.3	0.0	0.0	0.0	21	1.1	0.05	0.13	0.05	0.08 Note 47
3	Vol/NH3	Cattle	YES	0.1	1.3	NON	100.00	WWH	1.000	NO	2.4	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	0.0	2.4	Dairy	2				0.5	Liquid	0.0	0.06	0.0010	0.02	0.0050 Note 49
Year	N	21	1	1.0	1.0	0	100	1	0	0	0.7	21	0.3	0.1	0.0	0.0	0.0	21	0.2	0.01	0.03	0.01	0.02 Note 47
4	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	SBA	1.000	NO	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	0.0	0.5	Dairy	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	21	1	0.2	0.2	0	100	10	0	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.88	1.27	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	3.69	2.24	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	3.69	2.24	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	4.57	3.12	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	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											13.7	13.6	2.02	3.98	1.54	2.23 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									14.3	14.2	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0780		0.0429		TOTAL N AMOUNTS IN KG AND % LEACHED									72.6	72.2	1.81		0.54	Note 45
			TOTAL		0.0995		0.0557		TOTAL N AMOUNTS IN KG AND %									100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2914		0.1632 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	21	40.0	11.8	0.0	0.0	0.0	22	28.2	1.64	3.12	1.25	1.72 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Dairy	2				10.9	Sep	0.0	1.45	0.0105	0.43	0.0050 Note 49
Year	N	22	1	27.2	24.9	0	100	11	0	0	18.7	21	6.5	1.5	0.0	0.0	0.0	22	4.9	0.31	0.71	0.24	0.42 Note 47
2	Vol/NH3	Cattle	YES	2.3	6.2	NON	100.00	WWH	1.000	NO	12.2	Cattle	0.67				0.0	Cattle	0.2	0.09	0.0125	0.09	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	12.2	Dairy	2				2.5	Sep	0.0	0.31	0.0105	0.09	0.0050 Note 49
Year	N	22	1	4.8	4.4	0	100	11	0	0	3.3	21	1.1	0.3	0.0	0.0	0.0	22	0.9	0.06	0.12	0.04	0.07 Note 47
3	Vol/NH3	Cattle	YES	0.4	1.1	NON	100.00	WWH	1.000	NO	2.1	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	2.1	Dairy	2				0.4	Sep	0.0	0.05	0.0105	0.02	0.0050 Note 49
Year	N	22	1	0.8	0.8	0	100	1	0	0	0.6	21	0.2	0.0	0.0	0.0	0.0	22	0.2	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Cattle	YES	0.1	0.2	NON	100.00	SBA	1.000	NO	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	0.0	0.4	Dairy	2				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.1	0.1	0	100	10	0	0	0.1	21	0.0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.24	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	3.98	2.23	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	3.98	2.23	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.86	Total including natural	4.84	3.09	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							12.8	12.2	2.21	4.20	1.47	2.21	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							20.4	19.5	0.20		0.20		Note 45
1-10	N leach		FIRST YEAR		0.0843	0.0430	TOTAL N AMOUNTS IN KG AND % LEACHED							71.5	68.3	1.79		0.54		Note 45
			TOTAL		0.1050	0.0553	TOTAL N AMOUNTS IN KG AND %							104.7	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.3274		0.1726	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	21	40.0	11.8	0.0	0.0	0.0	23	28.2	1.89	3.37	1.25	1.72	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Dairy	2				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050	Note 49
Year	N	23	1	30.7	21.5	0	100	11	0	0	16.1	21	3.9	0.9	0.0	0.0	0.0	23	3.0	0.28	0.74	0.20	0.44	Note 47
2	Vol/NH3	Cattle	YES	9.2	5.4	NON	100.00	WWH	1.000	NO	12.3	Cattle	0.67				0.0	Cattle	0.2	0.15	0.0125	0.15	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	12.3	Dairy	2				2.2	Deep	0.0	0.31	0.0200	0.09	0.0050	Note 49
Year	N	23	1	3.2	2.3	0	100	11	0	0	1.7	21	0.4	0.1	0.0	0.0	0.0	23	0.3	0.03	0.08	0.02	0.05	Note 47
3	Vol/NH3	Cattle	YES	1.0	0.6	NON	100.00	WWH	1.000	NO	1.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	1.3	Dairy	2				0.2	Deep	0.0	0.03	0.0200	0.01	0.0050	Note 49
Year	N	23	1	0.3	0.2	0	100	1	0	0	0.2	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.01	0.00	0.00	Note 47
4	Vol/NH3	Cattle	YES	0.1	0.1	NON	100.00	SBA	1.000	NO	0.1	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	0.1	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	N	23	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.08	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	4.20	2.21	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	4.20	2.21	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	0.78		Total including natural	4.98	3.00	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										13.2	13.2	2.44	4.55	2.12	2.79 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		0.0847		0.0533	TOTAL N AMOUNTS IN KG AND % LEACHED										82.3	82.3	2.06		0.62	Note 45
			TOTAL		0.1137		0.0697	TOTAL N AMOUNTS IN KG AND %										100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3447		0.2112 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	21	40.0	11.8	0.0	0.0	0.0	24	28.2	1.92	3.39	1.68	2.13 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Dairy	2				10.9	Graz	0.0	1.45	0.0200	0.43	0.0200 Note 49
Year	N	24	1	28.2	28.2	0	100	11	0	0	26.2	21	5.1	1.2	0.0	0.0	0.0	24	3.9	0.45	1.00	0.38	0.56 Note 47
2	Vol/NH3	Cattle	YES	0.0	2.0	NON	100.00	WWH	1.000	NO	21.1	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	0.0	21.1	Dairy	2				3.6	Graz	0.0	0.53	0.0200	0.16	0.0200 Note 49
Year	N	24	1	3.9	3.9	0	100	11	0	0	3.6	21	0.7	0.2	0.0	0.0	0.0	24	0.5	0.06	0.14	0.05	0.08 Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	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	0.0	2.9	Dairy	2				0.5	Graz	0.0	0.07	0.0200	0.02	0.0200 Note 49
Year	N	24	1	0.5	0.5	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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				0.1	Graz	0.0	0.01	0.0200	0.00	0.0200 Note 49
Year	N	24	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	4.55	2.79	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	4.55	2.79	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	5.34	3.58	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							12.4	12.3				1.75	3.74	1.58	2.28	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					14.4	14.3				0.14		0.14		Note 45
1-10 N leach			FIRST YEAR		0.0719		0.0432		TOTAL N AMOUNTS IN KG AND % LEACHED					73.7	73.3				1.84		0.55		Note 45
			TOTAL		0.0936		0.0570		TOTAL N AMOUNTS IN KG AND %					100.5	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.3022		0.1841	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	22	40.0	10.4	0.0	0.0	0.0	21	29.6	1.39	2.88	1.25	1.73 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Beef	2				10.9	Liquid	0.0	1.45	0.0010	0.43	0.0050 Note 49
Year	N	21	1	27.7	27.0	0	100	11	0	0	20.3	22	7.6	1.6	0.0	0.0	0.0	21	6.0	0.29	0.69	0.26	0.44 Note 47
2	Vol/NH3	Cattle	YES	0.6	6.8	NON	100.00	WWH	1.000	NO	12.7	Cattle	0.67				0.0	Cattle	0.5	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	12.7	Beef	2				2.8	Liquid	0.0	0.32	0.0010	0.10	0.0050 Note 49
Year	N	21	1	5.6	5.5	0	100	11	0	0	4.1	22	1.5	0.3	0.0	0.0	0.0	21	1.2	0.06	0.14	0.05	0.09 Note 47
3	Vol/NH3	Cattle	YES	0.1	1.4	NON	100.00	WWH	1.000	NO	2.6	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	0.0	2.6	Beef	2				0.6	Liquid	0.0	0.06	0.0010	0.02	0.0050 Note 49
Year	N	21	1	1.1	1.1	0	100	1	0	0	0.8	22	0.3	0.1	0.0	0.0	0.0	21	0.2	0.01	0.03	0.01	0.02 Note 47
4	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	SBA	1.000	NO	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	0.0	0.5	Beef	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	21	1	0.2	0.2	0	100	10	0	0	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	YES	0.0	0.1	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.89	1.29	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	3.74	2.28	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	3.74	2.28	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	0.89	Total including natural	4.64	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 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							12.1	12.1				2.06	4.05	1.57	2.27	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.0	14.9				0.15		0.15		Note 45
1-10	N leach		FIRST YEAR		0.0784	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED							73.5	73.1				1.84		0.55		Note 45
			TOTAL		0.1011	0.0567	TOTAL N AMOUNTS IN KG AND %							100.5	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.3334		0.1868	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	22	40.0	10.4	0.0	0.0	0.0	22	29.6	1.65	3.14	1.25	1.73	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Beef	2				10.9	Sep	0.0	1.45	0.0105	0.43	0.0050	Note 49
Year	N	22	1	28.6	26.1	0	100	11	0	0	19.6	22	6.8	1.4	0.0	0.0	0.0	22	5.4	0.33	0.74	0.25	0.44	Note 47
2	Vol/NH3	Cattle	YES	2.4	6.5	NON	100.00	WWH	1.000	NO	12.8	Cattle	0.67				0.0	Cattle	0.3	0.09	0.0125	0.09	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	12.8	Beef	2				2.7	Sep	0.0	0.32	0.0105	0.10	0.0050	Note 49
Year	N	22	1	5.2	4.8	0	100	11	0	0	3.6	22	1.2	0.3	0.0	0.0	0.0	22	1.0	0.06	0.14	0.05	0.08	Note 47
3	Vol/NH3	Cattle	YES	0.4	1.2	NON	100.00	WWH	1.000	NO	2.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	2.3	Beef	2				0.5	Sep	0.0	0.06	0.0105	0.02	0.0050	Note 49
Year	N	22	1	0.9	0.9	0	100	1	0	0	0.6	22	0.2	0.0	0.0	0.0	0.0	22	0.2	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.1	0.2	NON	100.00	SBA	1.000	NO	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	0.0	0.4	Beef	2				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050	Note 49
Year	N	22	1	0.2	0.2	0	100	10	0	0	0.1	22	0.0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.25	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	2.27	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	2.27	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.87	Total including natural	4.91	3.13	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										11.4	10.8	2.25	4.27	1.49	2.25 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										21.4	20.4	0.21		0.21	Note 45
1-10 N leach			FIRST YEAR		0.0850		0.0432	TOTAL N AMOUNTS IN KG AND % LEACHED										72.2	68.8	1.81		0.54	Note 45
			TOTAL		0.1068		0.0562	TOTAL N AMOUNTS IN KG AND %										105.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3762		0.1979 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	22	40.0	10.4	0.0	0.0	0.0	23	29.6	1.92	3.40	1.25	1.73 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Beef	2				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	23	1	32.2	22.6	0	100	11	0	0	16.9	22	4.1	0.8	0.0	0.0	0.0	23	3.2	0.30	0.78	0.21	0.46 Note 47
2	Vol/NH3	Cattle	YES	9.7	5.6	NON	100.00	WWH	1.000	NO	12.9	Cattle	0.67				0.0	Cattle	0.2	0.16	0.0125	0.16	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	12.9	Beef	2				2.3	Deep	0.0	0.32	0.0200	0.10	0.0050 Note 49
Year	N	23	1	3.5	2.5	0	100	11	0	0	1.8	22	0.4	0.1	0.0	0.0	0.0	23	0.4	0.03	0.08	0.02	0.05 Note 47
3	Vol/NH3	Cattle	YES	1.1	0.6	NON	100.00	WWH	1.000	NO	1.4	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	1.4	Beef	2				0.3	Deep	0.0	0.03	0.0200	0.01	0.0050 Note 49
Year	N	23	1	0.4	0.3	0	100	1	0	0	0.2	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.01	0.00	0.01 Note 47
4	Vol/NH3	Cattle	YES	0.1	0.1	NON	100.00	SBA	1.000	NO	0.2	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	0.2	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	N	23	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.08	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	4.27	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	4.27	2.25	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	5.06	3.04	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											11.7	11.7	2.50	4.64	2.18	2.85 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		0.0854		0.0540				TOTAL N AMOUNTS IN KG AND % LEACHED							83.7	83.7	2.09		0.63	Note 45
			TOTAL		0.1161		0.0713				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3968		0.2439 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	22	40.0	10.4	0.0	0.0	0.0	24	29.6	1.95	3.42	1.71	2.16 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Beef	2				10.9	Graz	0.0	1.45	0.0200	0.43	0.0200 Note 49
Year	N	24	1	29.6	29.6	0	100	11	0	0	27.5	22	5.3	1.1	0.0	0.0	0.0	24	4.2	0.48	1.05	0.41	0.59 Note 47
2	Vol/NH3	Cattle	YES	0.0	2.1	NON	100.00	WWH	1.000	NO	22.2	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	0.0	22.2	Beef	2				3.7	Graz	0.0	0.55	0.0200	0.17	0.0200 Note 49
Year	N	24	1	4.2	4.2	0	100	11	0	0	3.9	22	0.8	0.2	0.0	0.0	0.0	24	0.6	0.07	0.15	0.06	0.08 Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	3.2	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	3.2	Beef	2				0.5	Graz	0.0	0.08	0.0200	0.02	0.0200 Note 49
Year	N	24	1	0.6	0.6	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.5	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	0.5	Beef	2				0.1	Graz	0.0	0.01	0.0200	0.00	0.0200 Note 49
Year	N	24	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	4.64	2.85	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	4.64	2.85	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	5.44	3.65	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							19.6	19.6	1.63	3.45	1.43	2.07	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							12.4	12.4	0.12		0.12		Note 45
1-10 N leach			FIRST YEAR		0.0720	0.0426	TOTAL N AMOUNTS IN KG AND % LEACHED							68.1	68.1	1.70		0.51		Note 45
			TOTAL		0.0863	0.0516	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																	0.1762		0.1055	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	32	40.0	16.7	0.0	0.0	0.0	31	23.3	1.38	2.88	1.21	1.70	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Pork	3				10.9	Liquid	0.0	1.45	0.0010	0.43	0.0050	Note 49
Year	N	31	1	20.0	19.5	0	100	11	0	0	14.6	32	5.8	2.4	0.0	0.0	0.0	31	3.4	0.21	0.49	0.19	0.31	Note 47
2	Vol/NH3	Pig	YES	0.5	4.9	NON	100.00	WWH	1.000	NO	8.8	Pig	0.67				0.0	Pig	0.5	0.06	0.0125	0.06	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	8.8	Pork	3				2.0	Liquid	0.0	0.22	0.0010	0.07	0.0050	Note 49
Year	N	31	1	2.9	2.8	0	100	11	0	0	2.1	32	0.9	0.4	0.0	0.0	0.0	31	0.5	0.03	0.07	0.03	0.05	Note 47
3	Vol/NH3	Pig	YES	0.1	0.7	NON	100.00	WWH	1.000	NO	1.3	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	0.0	1.3	Pork	3				0.3	Liquid	0.0	0.03	0.0010	0.01	0.0050	Note 49
Year	N	31	1	0.4	0.4	0	100	1	0	0	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	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	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	1	0.1	0.1	0	100	10	0	0	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
5	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	3.45	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	3.45	2.07	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	4.29	2.90	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											18.6	18.5	1.76	3.58	1.37	2.02 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									15.8	15.7	0.16		0.16	Note 45
1-10 N leach			FIRST YEAR		0.0767		0.0427		TOTAL N AMOUNTS IN KG AND % LEACHED									66.2	65.8	1.65		0.50	Note 45
			TOTAL		0.0894		0.0506		TOTAL N AMOUNTS IN KG AND %									100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1925		0.1090 Note 46
Year	N		1	1	100.0	100.0	0	100	22	1	0	97.8	32	40.0	16.7	0.0	0.0	0.0	32	23.3	1.56	3.07	1.21	1.71 Note 47
1	Vol/NH3	N	YES		0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Pork	3				10.9	Sep	0.0	1.45	0.0105	0.43	0.0050 Note 49
Year	N		32	1	19.5	15.4	0	100	11	0	0	11.5	32	4.0	1.7	0.0	0.0	0.0	32	2.3	0.18	0.46	0.14	0.29 Note 47
2	Vol/NH3	Pig	YES		4.2	3.8	NON	100.00	WWH	1.000	NO	7.5	Pig	0.67				0.0	Pig	0.4	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Sep	0.867	1.024			ORG	1.00	1.000	0.653	0.0	7.5	Pork	3				1.6	Sep	0.0	0.19	0.0105	0.06	0.0050 Note 49
Year	N		32	1	2.0	1.5	0	100	11	0	0	1.2	32	0.4	0.2	0.0	0.0	0.0	32	0.2	0.02	0.05	0.01	0.03 Note 47
3	Vol/NH3	Pig	YES		0.4	0.4	NON	100.00	WWH	1.000	NO	0.8	Pig	0.67				0.0	Pig	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.024			ORG	1.00	1.000	0.653	0.0	0.8	Pork	3				0.2	Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year	N		32	1	0.2	0.2	0	100	1	0	0	0.1	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Pig	YES		0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES		0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES		0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES		0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES		0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES		0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES		0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	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	Current crops	3.58	2.02	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	3.58	2.02	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	4.36	2.81	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										18.1	17.7	1.87	3.68	1.32	2.00 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										20.2	19.8	0.20		0.20	Note 45
1-10 N leach			FIRST YEAR		0.0808		0.0429	TOTAL N AMOUNTS IN KG AND % LEACHED										64.1	62.6	1.60		0.48	Note 45
			TOTAL		0.0919		0.0501	TOTAL N AMOUNTS IN KG AND %										102.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2030		0.1107 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	32	40.0	16.7	0.0	0.0	0.0	33	23.3	1.71	3.23	1.20	1.72 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Pork	3				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	33	1	19.7	11.8	0	100	11	0	0	8.9	32	3.1	1.3	0.0	0.0	0.0	33	1.8	0.15	0.41	0.11	0.27 Note 47
2	Vol/NH3	Pig	YES	7.9	3.0	NON	100.00	WWH	1.000	NO	5.8	Pig	0.67				0.0	Pig	0.4	0.11	0.0125	0.11	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	5.8	Pork	3				1.2	Deep	0.0	0.14	0.0200	0.04	0.0050 Note 49
Year	N	33	1	1.5	0.9	0	100	11	0	0	0.7	32	0.2	0.1	0.0	0.0	0.0	33	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Pig	YES	0.6	0.2	NON	100.00	WWH	1.000	NO	0.4	Pig	0.67				0.0	Pig	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.4	Pork	3				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.1	0.1	0	100	1	0	0	0.1	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.10	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	3.68	2.00	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	3.68	2.00	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	Total including natural	4.44	2.77	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	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							19.7	19.7	2.27	4.22	1.96	2.57	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		0.0823	0.0509	TOTAL N AMOUNTS IN KG AND % LEACHED							76.2	76.2	1.90		0.57		Note 45	
			TOTAL		0.1054	0.0643	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45	
N2O-N/N in food/beverage/fuel/other																	0.2140		0.1307	Note 46	
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	32	40.0	16.7	0.0	0.0	0.0	34	23.3	1.82	3.29	1.58	2.04	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Pork	3				10.9	Root	0.0	1.45	0.0200	0.43	0.0200	Note 49
Year	N	34	1	23.3	23.3	0	100	11	0	0	21.7	32	6.1	2.5	0.0	0.0	0.0	34	3.5	0.38	0.78	0.32	0.46	Note 47
2	Vol/NH3	Pig	YES	0.0	1.6	NON	100.00	WWH	1.000	NO	15.6	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	0.0	15.6	Pork	3				2.9	Root	0.0	0.39	0.0200	0.12	0.0200	Note 49
Year	N	34	1	3.5	3.5	0	100	11	0	0	3.3	32	0.9	0.4	0.0	0.0	0.0	34	0.5	0.06	0.12	0.05	0.07	Note 47
3	Vol/NH3	Pig	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	2.4	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	2.4	Pork	3				0.4	Root	0.0	0.06	0.0200	0.02	0.0200	Note 49
Year	N	34	1	0.5	0.5	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.4	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	0.4	Pork	3				0.1	Root	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	34	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	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	0.1	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	34	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	4.22	2.57	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	4.22	2.57	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	5.03	3.39	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											23.0	23.0	1.59	3.37	1.38	1.99	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006						TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						9.7	9.7	0.10		0.10		Note 45
1-10 N leach			FIRST YEAR		0.0716	0.0419						TOTAL N AMOUNTS IN KG AND % LEACHED						67.3	67.3	1.68		0.51		Note 45
			TOTAL		0.0842	0.0497						TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.1465		0.0864	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	42	40.0	20.4	0.0	0.0	0.0	41	19.6	1.38	2.86	1.20	1.68	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Meat	4				10.9	Liquid	0.0	1.45	0.0010	0.43	0.0050	Note 49
Year	N	41	1	17.6	17.3	0	100	11	0	0	13.0	42	4.5	2.3	0.0	0.0	0.0	41	2.2	0.19	0.45	0.16	0.27	Note 47
2	Vol/NH3	Poultry	YES	0.4	4.3	NON	100.00	WWH	1.000	NO	8.5	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	0.0	8.5	Meat	4				1.8	Liquid	0.0	0.21	0.0010	0.06	0.0050	Note 49
Year	N	41	1	2.0	1.9	0	100	11	0	0	1.5	42	0.5	0.3	0.0	0.0	0.0	41	0.2	0.02	0.05	0.02	0.03	Note 47
3	Vol/NH3	Poultry	YES	0.0	0.5	NON	100.00	WWH	1.000	NO	1.0	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	0.0	1.0	Meat	4				0.2	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	41	1	0.2	0.2	0	100	1	0	0	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	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.09	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	3.37	1.99	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	3.37	1.99	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	4.17	2.79	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	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							22.2	22.2								Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							13.3	13.3				0.13		0.13		Note 45
1-10	N leach		FIRST YEAR		0.0757	0.0423	TOTAL N AMOUNTS IN KG AND % LEACHED							64.5	64.5				1.61		0.48		Note 45
			TOTAL		0.0854	0.0483	TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1539		0.0869	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	42	40.0	20.4	0.0	0.0	0.0	42	19.6	1.51	3.03	1.19	1.69	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Meat	4				10.9	Sep	0.0	1.45	0.0105	0.43	0.0050	Note 49
Year	N	42	1	14.7	12.5	0	100	11	0	0	9.4	42	3.2	1.7	0.0	0.0	0.0	42	1.6	0.15	0.36	0.12	0.22	Note 47
2	Vol/NH3	Poultry	YES	2.2	3.1	NON	100.00	WWH	1.000	NO	6.1	Poultry	0.67				0.0	Poultry	0.4	0.06	0.0125	0.06	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	6.1	Meat	4				1.3	Sep	0.0	0.15	0.0105	0.05	0.0050	Note 49
Year	N	42	1	1.2	1.0	0	100	11	0	0	0.8	42	0.3	0.1	0.0	0.0	0.0	42	0.1	0.01	0.03	0.01	0.02	Note 47
3	Vol/NH3	Poultry	YES	0.2	0.3	NON	100.00	WWH	1.000	NO	0.5	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	0.5	Meat	4				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.1	0.1	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.07	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	3.42	1.93	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	3.42	1.93	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	4.18	2.70	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							21.3	21.3	1.71	3.46	1.27	1.90	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.2	15.1	0.15		0.15		Note 45
1-10 N leach			FIRST YEAR		0.0785		0.0427				TOTAL N AMOUNTS IN KG AND % LEACHED							63.7	63.6	1.59		0.48		Note 45
			TOTAL		0.0864		0.0474				TOTAL N AMOUNTS IN KG AND %							100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.1620		0.0888	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	42	40.0	20.4	0.0	0.0	0.0	43	19.6	1.59	3.14	1.17	1.71	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Meat	4				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050	Note 49
Year	N	43	1	11.9	9.8	0	100	11	0	0	7.4	42	1.8	0.9	0.0	0.0	0.0	43	0.9	0.12	0.30	0.09	0.18	Note 47
2	Vol/NH3	Poultry	YES	2.1	2.5	NON	100.00	WWH	1.000	NO	5.6	Poultry	0.67				0.0	Poultry	0.3	0.05	0.0125	0.05	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	5.6	Meat	4				1.0	Deep	0.0	0.14	0.0200	0.04	0.0050	Note 49
Year	N	43	1	0.5	0.4	0	100	11	0	0	0.3	42	0.1	0.0	0.0	0.0	0.0	43	0.0	0.01	0.01	0.00	0.01	Note 47
3	Vol/NH3	Poultry	YES	0.1	0.1	NON	100.00	WWH	1.000	NO	0.2	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	0.2	Meat	4				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050	Note 49
Year	N	43	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.73	1.06	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	3.46	1.90	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	3.46	1.90	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	0.73	Total including natural	4.19	2.63	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											22.4	22.4	2.07	3.96	1.78	2.37	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		0.0804		0.0490				TOTAL N AMOUNTS IN KG AND % LEACHED							73.9	73.9	1.85		0.55		Note 45
			TOTAL		0.0989		0.0592				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.1769		0.1059	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	42	40.0	20.4	0.0	0.0	0.0	44	19.6	1.75	3.22	1.51	1.96	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Meat	4				10.9	Scrap	0.0	1.45	0.0200	0.43	0.0200	Note 49
Year	N	44	1	19.6	19.6	0	100	11	0	0	18.2	42	3.5	1.8	0.0	0.0	0.0	44	1.7	0.29	0.67	0.25	0.37	Note 47
2	Vol/NH3	Poultry	YES	0.0	1.4	NON	100.00	WWH	1.000	NO	14.7	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	0.0	14.7	Meat	4				2.5	Scrap	0.0	0.37	0.0200	0.11	0.0200	Note 49
Year	N	44	1	1.7	1.7	0	100	11	0	0	1.6	42	0.3	0.2	0.0	0.0	0.0	44	0.2	0.03	0.06	0.02	0.03	Note 47
3	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	1.3	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	1.3	Meat	4				0.2	Scrap	0.0	0.03	0.0200	0.01	0.0200	Note 49
Year	N	44	1	0.2	0.2	0	100	1	0	0	0.1	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.01	0.00	0.00	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	3.96	2.37	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	3.96	2.37	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	4.72	3.13	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											11.7	11.7	1.74	3.73	1.56	2.26 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									14.6	14.6	0.15		0.15	Note 45
1-10 N leach			FIRST YEAR		0.0721		0.0434		TOTAL N AMOUNTS IN KG AND % LEACHED									73.7	73.7	1.84		0.55	Note 45
			TOTAL		0.0931		0.0566		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3192		0.1939 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	43	40.0	9.6	0.0	0.0	0.0	41	30.4	1.39	2.88	1.25	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Eggs	4				10.9	Liquid	0.0	1.45	0.0010	0.43	0.0050 Note 49
Year	N	41	1	27.3	26.8	0	100	11	0	0	20.1	43	7.0	1.7	0.0	0.0	0.0	41	5.3	0.29	0.70	0.26	0.43 Note 47
2	Vol/NH3	Poultry	YES	0.5	6.7	NON	100.00	WWH	1.000	NO	13.1	Poultry	0.67				0.0	Poultry	0.5	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	13.1	Eggs	4				2.7	Liquid	0.0	0.33	0.0010	0.10	0.0050 Note 49
Year	N	41	1	4.8	4.7	0	100	11	0	0	3.5	43	1.2	0.3	0.0	0.0	0.0	41	0.9	0.05	0.12	0.05	0.08 Note 47
3	Vol/NH3	Poultry	YES	0.1	1.2	NON	100.00	WWH	1.000	NO	2.3	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	0.0	2.3	Eggs	4				0.5	Liquid	0.0	0.06	0.0010	0.02	0.0050 Note 49
Year	N	41	1	0.8	0.8	0	100	1	0	0	0.6	43	0.2	0.1	0.0	0.0	0.0	41	0.2	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Poultry	YES	0.0	0.2	NON	100.00	SBA	1.000	NO	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	0.0	0.4	Eggs	4				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.25	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	3.73	2.26	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	3.73	2.26	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.87	Total including natural	4.60	3.13	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															11.0	11.0	1.87	3.79	1.44	2.16 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3														20.3	20.3	0.20		0.20	Note 45
1-10 N leach	FIRST YEAR	0.0785	0.0440	TOTAL N AMOUNTS IN KG AND % LEACHED														68.6	68.6	1.72		0.51	Note 45
	TOTAL	0.0947	0.0539	TOTAL N AMOUNTS IN KG AND %														100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.3435		0.1956	Note 46
Year N	1	1	100.0	100.0	0	100	22	1	0	97.8	43	40.0	9.6	0.0	0.0	0.0	42	30.4	1.60	3.14	1.23	1.76	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Eggs	4				10.9	Sep	0.0	1.45	0.0105	0.43	0.0050	Note 49
Year N	42	1	22.8	19.4	0	100	11	0	0	14.5	43	5.0	1.2	0.0	0.0	0.0	42	3.8	0.24	0.57	0.18	0.35	Note 47
2 Vol/NH3	Poultry	YES	3.4	4.8	NON	100.00	WWH	1.000	NO	9.5	Poultry	0.67				0.0	Poultry	1.0	0.09	0.0125	0.09	0.0100	Note 48
N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	9.5	Eggs	4				2.0	Sep	0.0	0.24	0.0105	0.07	0.0050	Note 49
Year N	42	1	2.9	2.4	0	100	11	0	0	1.8	43	0.6	0.2	0.0	0.0	0.0	42	0.5	0.03	0.07	0.02	0.04	Note 47
3 Vol/NH3	Poultry	YES	0.4	0.6	NON	100.00	WWH	1.000	NO	1.2	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100	Note 48
N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	1.2	Eggs	4				0.2	Sep	0.0	0.03	0.0105	0.01	0.0050	Note 49
Year N	42	1	0.4	0.3	0	100	1	0	0	0.2	43	0.1	0.0	0.0	0.0	0.0	42	0.1	0.00	0.01	0.00	0.01	Note 47
4 Vol/NH3	Poultry	YES	0.1	0.1	NON	100.00	SBA	1.000	NO	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	0.00	0.0105	0.00	0.0050	Note 49
Year N	42	1	0.0	0.0	0	100	10	0	0	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
5 Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.10	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	3.79	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	3.79	2.16	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	0.81	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 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											10.3	10.3	1.92	3.83	1.36	2.09 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									22.8	22.7	0.23		0.23	Note 45
1-10 N leach			FIRST YEAR		0.0828		0.0446		TOTAL N AMOUNTS IN KG AND % LEACHED									67.1	66.9	1.68		0.50	Note 45
			TOTAL		0.0957		0.0522		TOTAL N AMOUNTS IN KG AND %									100.3	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3701		0.2016 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	43	40.0	9.6	0.0	0.0	0.0	43	30.4	1.72	3.31	1.21	1.78 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Eggs	4				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	43	1	18.5	15.2	0	100	11	0	0	11.4	43	2.7	0.7	0.0	0.0	0.0	43	2.1	0.19	0.48	0.14	0.28 Note 47
2	Vol/NH3	Poultry	YES	3.2	3.8	NON	100.00	WWH	1.000	NO	8.7	Poultry	0.67				0.0	Poultry	0.8	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	8.7	Eggs	4				1.6	Deep	0.0	0.22	0.0200	0.07	0.0050 Note 49
Year	N	43	1	1.3	1.0	0	100	11	0	0	0.8	43	0.2	0.0	0.0	0.0	0.0	43	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Poultry	YES	0.2	0.3	NON	100.00	WWH	1.000	NO	0.6	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.6	Eggs	4				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.1	0.1	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	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	3.83	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	3.83	2.09	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Total including natural	4.58	2.84	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											11.2	11.2	2.53	4.68	2.20	2.88 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		0.0858		0.0544				TOTAL N AMOUNTS IN KG AND % LEACHED							84.2	84.2	2.10		0.63	Note 45
			TOTAL		0.1169		0.0720				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.4189		0.2578	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	43	40.0	9.6	0.0	0.0	0.0	44	30.4	1.97	3.43	1.72	2.18 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Eggs	4				10.9	Scrap	0.0	1.45	0.0200	0.43	0.0200 Note 49
Year	N	44	1	30.4	30.4	0	100	11	0	0	28.2	43	5.5	1.3	0.0	0.0	0.0	44	4.1	0.48	1.07	0.41	0.61 Note 47
2	Vol/NH3	Poultry	YES	0.0	2.1	NON	100.00	WWH	1.000	NO	22.8	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	0.0	22.8	Eggs	4				3.8	Scrap	0.0	0.57	0.0200	0.17	0.0200 Note 49
Year	N	44	1	4.1	4.1	0	100	11	0	0	3.9	43	0.7	0.2	0.0	0.0	0.0	44	0.6	0.07	0.15	0.06	0.08 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	3.1	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	3.1	Eggs	4				0.5	Scrap	0.0	0.08	0.0200	0.02	0.0200 Note 49
Year	N	44	1	0.6	0.6	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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				0.1	Scrap	0.0	0.01	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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		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	4.68	2.88	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	4.68	2.88	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	5.48	3.68	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 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											7.1	6.7	2.70	5.04	1.80	2.56 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		0.0865		0.0442				TOTAL N AMOUNTS IN KG AND % LEACHED							90.1	85.1	2.25		0.68	Note 45
			TOTAL		0.1259		0.0639				TOTAL N AMOUNTS IN KG AND %							105.9	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.7062		0.3588	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	51	40.0	5.7	0.0	0.0	0.0	53	34.3	1.94	3.46	1.26	1.77 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Milk/mutt	5				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	53	1	33.9	33.9	0	100	11	0	0	33.9	51	8.1	1.2	0.0	0.0	0.0	53	7.0	0.60	1.25	0.43	0.63 Note 47
2	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	25.8	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	0.0	25.8	Milk/mutt	5				4.6	Deep	0.0	0.64	0.0200	0.19	0.0050 Note 49
Year	N	53	1	6.9	6.9	0	100	11	0	0	6.9	51	1.7	0.2	0.0	0.0	0.0	53	1.4	0.12	0.26	0.09	0.13 Note 47
3	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	5.2	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	0.0	5.2	Milk/mutt	5				0.9	Deep	0.0	0.13	0.0200	0.04	0.0050 Note 49
Year	N	53	1	1.4	1.4	0	100	1	0	0	1.4	51	0.3	0.0	0.0	0.0	0.0	53	0.3	0.02	0.05	0.02	0.03 Note 47
4	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	1.1	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	1.1	Milk/mutt	5				0.2	Deep	0.0	0.03	0.0200	0.01	0.0050 Note 49
Year	N	53	1	0.3	0.3	0	100	10	0	0	0.3	51	0.1	0.0	0.0	0.0	0.0	53	0.1	0.01	0.01	0.00	0.01 Note 47
5	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.01	0.0200	0.00	0.0050 Note 49
Year	N	53	1	0.1	0.1	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	5.04	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	5.04	2.56	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	5.89	3.41	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 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											6.7	6.7	2.71	4.96	1.56	2.27	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	0.0878	0.0392		TOTAL N AMOUNTS IN KG AND % LEACHED											88.2	88.2	2.21		0.66		Note 45
			TOTAL	0.1241	0.0567		TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.7388		0.3377		Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	51	40.0	5.7	0.0	0.0	0.0	54	34.3	2.05	3.51	1.11	1.57	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Milk/mutt	5				10.9	Graz	0.0	1.45	0.0200	0.43	0.0000	Note 49
Year	N	54	1	34.3	34.3	0	100	11	0	0	31.9	51	6.2	0.9	0.0	0.0	0.0	54	5.3	0.56	1.23	0.37	0.59	Note 47
2	Vol/NH3	Sheep	YES	0.0	2.4	NON	100.00	WWH	1.000	NO	25.7	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	0.0	25.7	Milk/mutt	5				4.3	Graz	0.0	0.64	0.0200	0.19	0.0000	Note 49
Year	N	54	1	5.3	5.3	0	100	11	0	0	4.9	51	1.0	0.1	0.0	0.0	0.0	54	0.8	0.09	0.19	0.06	0.09	Note 47
3	Vol/NH3	Sheep	YES	0.0	0.4	NON	100.00	WWH	1.000	NO	4.0	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	4.0	Milk/mutt	5				0.7	Graz	0.0	0.10	0.0200	0.03	0.0000	Note 49
Year	N	54	1	0.8	0.8	0	100	1	0	0	0.8	51	0.1	0.0	0.0	0.0	0.0	54	0.1	0.01	0.03	0.01	0.01	Note 47
4	Vol/NH3	Sheep	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	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	0.0	0.6	Milk/mutt	5				0.1	Graz	0.0	0.02	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	4.96	2.27	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	4.96	2.27	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	5.78	3.08	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											4.4	4.2	2.45	4.63	1.60	2.42 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							23.5	22.2	0.23		0.23	Note 45
1-10 N leach			FIRST YEAR		0.0874		0.0444				TOTAL N AMOUNTS IN KG AND % LEACHED							77.8	73.6	1.95		0.58	Note 45
			TOTAL		0.1157		0.0605				TOTAL N AMOUNTS IN KG AND %							105.8	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					1.0401		0.5440 Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	61	40.0	3.8	0.0	0.0	0.0	63	36.2	1.97	3.49	1.27	1.78 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Milk/meat	6				10.9	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	63	1	35.7	30.4	0	100	11	0	0	22.8	61	5.5	0.5	0.0	0.0	0.0	63	4.9	0.41	0.98	0.29	0.55 Note 47
2	Vol/NH3	Goat	YES	5.4	7.6	NON	100.00	WWH	1.000	NO	17.3	Goat	0.67				0.0	Goat	0.7	0.14	0.0125	0.14	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	17.3	Milk/meat	6				3.1	Deep	0.0	0.43	0.0200	0.13	0.0050 Note 49
Year	N	63	1	4.9	4.1	0	100	11	0	0	3.1	61	0.7	0.1	0.0	0.0	0.0	63	0.7	0.06	0.13	0.04	0.08 Note 47
3	Vol/NH3	Goat	YES	0.7	1.0	NON	100.00	WWH	1.000	NO	2.4	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	0.0	2.4	Milk/meat	6				0.4	Deep	0.0	0.06	0.0200	0.02	0.0050 Note 49
Year	N	63	1	0.7	0.6	0	100	1	0	0	0.4	61	0.1	0.0	0.0	0.0	0.0	63	0.1	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Goat	YES	0.1	0.1	NON	100.00	SBA	1.000	NO	0.3	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	0.3	Milk/meat	6				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.1	0.1	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	N	63	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	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	4.63	2.42	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	4.63	2.42	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	5.45	3.24	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											4.6	4.6	2.79	5.10	2.02	2.74	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		0.0887	0.0483	TOTAL N AMOUNTS IN KG AND % LEACHED											90.2	90.2	2.25		0.68		Note 45
			TOTAL		0.1275	0.0686	TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					1.1120		0.5985	Note 46
Year	N	1	1	100.0	100.0	0	100	22	1	0	97.8	61	40.0	3.8	0.0	0.0	0.0	64	36.2	2.08	3.55	1.48	1.93	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRS	1.000	NO	57.8	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	0.0	57.8	Milk/meat	6				10.9	Graz	0.0	1.45	0.0200	0.43	0.0100	Note 49
Year	N	64	1	36.2	36.2	0	100	11	0	0	33.6	61	6.5	0.6	0.0	0.0	0.0	64	5.9	0.60	1.30	0.45	0.68	Note 47
2	Vol/NH3	Goat	YES	0.0	2.5	NON	100.00	WWH	1.000	NO	27.1	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	0.0	27.1	Milk/meat	6				4.6	Graz	0.0	0.68	0.0200	0.20	0.0100	Note 49
Year	N	64	1	5.9	5.9	0	100	11	0	0	5.5	61	1.1	0.1	0.0	0.0	0.0	64	1.0	0.10	0.21	0.07	0.11	Note 47
3	Vol/NH3	Goat	YES	0.0	0.4	NON	100.00	WWH	1.000	NO	4.4	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	4.4	Milk/meat	6				0.7	Graz	0.0	0.11	0.0200	0.03	0.0100	Note 49
Year	N	64	1	1.0	1.0	0	100	1	0	0	0.9	61	0.2	0.0	0.0	0.0	0.0	64	0.2	0.02	0.03	0.01	0.02	Note 47
4	Vol/NH3	Goat	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.7	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	0.7	Milk/meat	6				0.1	Graz	0.0	0.02	0.0200	0.01	0.0100	Note 49
Year	N	64	1	0.2	0.2	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	1	0.0	0.0	0	100	22	1	0	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	YES	0.0	0.0	NON	100.00	WRS	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	5.10	2.74	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	5.10	2.74	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	5.92	3.57	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													339.6	8.2	66.32	140.94	60.70	92.90	Note 45
Year	N NH3	ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											1401.9	33.7	14.02		14.02		Note 45
1-10	N leach	FIRST YEAR		0.0025	0.0025		TOTAL N AMOUNTS IN KG AND % LEACHED											2424.0	58.2	60.60		18.18		Note 45
		TOTAL		0.0345	0.0227		TOTAL N AMOUNTS IN KG AND %											4165.6	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.4150		0.2735	Note 46
Year	N	0	1	0.0	0.0	0	100	2610	1	0	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	YES	0.0	0.0	NON	100.00	CGR0	1.296	NO	-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	1	4089.5	4089.5	0	100	11	0	0	3067.1	21	1145.1	269.6	0.0	0.0	0.0	21	875.5	44.36	103.34	39.92	65.26	Note 47
2	Vol/NH3	Green	YES	0.0	1022.4	NON	100.00	WWH	1.000	NO	1922.1	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	0.0	1922.1	Dairy	2				417.4	Liquid	0.0	48.05	0.0010	14.42	0.0050	Note 49
Year	N	21	1	818.3	800.3	0	100	11	0	0	600.2	21	224.1	52.8	0.0	0.0	0.0	21	171.3	8.68	20.40	7.81	12.95	Note 47
3	Vol/NH3	Cattle	YES	18.0	200.1	NON	100.00	WWH	1.000	NO	376.2	Cattle	0.67				0.0	Cattle	13.7	2.32	0.0125	2.32	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	376.2	Dairy	2				81.7	Liquid	0.0	9.40	0.0010	2.82	0.0050	Note 49
Year	N	21	1	160.2	156.6	0	100	1	0	0	117.5	21	43.9	10.0	0.0	0.0	0.0	21	33.8	1.70	3.99	1.53	2.54	Note 47
4	Vol/NH3	Cattle	YES	3.5	39.2	NON	100.00	SBA	1.000	NO	73.6	Cattle	0.65				0.0	Cattle	2.7	0.45	0.0125	0.45	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	73.6	Dairy	2				16.1	Liquid	0.0	1.84	0.0010	0.55	0.0050	Note 49
Year	N	21	1	31.6	30.9	0	100	10	0	0	23.2	21	8.7	2.0	0.0	0.0	0.0	21	6.7	0.33	0.79	0.30	0.50	Note 47
5	Vol/NH3	Cattle	YES	0.7	7.7	NON	100.00	WBA	1.000	NO	14.5	Cattle	0.66				0.0	Cattle	0.5	0.09	0.0125	0.09	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	14.5	Dairy	2				3.0	Liquid	0.0	0.36	0.0010	0.11	0.0050	Note 49
Year	N	21	1	6.2	6.1	0	100	2610	1	0	4.6	71	0.0	0.0	64.4	0.0	0.0	71	64.4	0.23	0.24	0.22	0.23	Note 47
6	Vol/NH3	Cattle	YES	0.1	1.5	NON	100.00	ERROR	1.296	NO	-59.9	N crop	0.8				12.3	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				1.4	High	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	71	1	64.4	64.4	0	100	11	0	0	48.3	21	18.0	4.2	0.0	0.0	0.0	21	13.8	0.70	1.63	0.63	1.03	Note 47
7	Vol/NH3	Green	YES	0.0	16.1	NON	100.00	WWH	1.000	NO	30.3	Cattle	0.67				0.0	Cattle	1.1	0.17	0.0125	0.17	0.0100	Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.627	0.0	30.3	Dairy	2				6.6	Liquid	0.0	0.76	0.0010	0.23	0.0050	Note 49
Year	N	21	1	12.9	12.6	0	100	11	0	0	9.5	21	3.5	0.8	0.0	0.0	0.0	21	2.7	0.14	0.32	0.12	0.20	Note 47
8	Vol/NH3	Cattle	YES	0.3	3.2	NON	100.00	WWH	1.000	NO	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	0.0	5.9	Dairy	2				1.3	Liquid	0.0	0.15	0.0010	0.04	0.0050	Note 49
Year	N	21	1	2.5	2.5	0	100	1	0	0	1.9	21	0.7	0.2	0.0	0.0	0.0	21	0.5	0.03	0.06	0.02	0.04	Note 47
9	Vol/NH3	Cattle	YES	0.1	0.6	NON	100.00	SBA	1.000	NO	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	0.0	1.2	Dairy	2				0.3	Liquid	0.0	0.03	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.5	0.5	0	100	10	0	0	0.4	21	0.1	0.0	0.0	0.0	0.0	21	0.1	0.01	0.01	0.00	0.01	Note 47
10	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBA	1.000	NO	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	4.65	1.21	0.19	15.94	0.37	0.07	0.02	0.00	63.28	3.71	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	140.94	92.90	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	140.94	92.90	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	17.07	23.75	4.65	1.21	0.19	15.94	0.37	0.07	0.02	0.00	63.28 Total including natural	204.22	156.18	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													192.8	4.7	60.87	140.80	54.36	87.01	Note 45
Year	N NH3	ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											1237.9	30.0	12.38		12.38		Note 45
1-10	N leach	FIRST YEAR		0.0025	0.0025		TOTAL N AMOUNTS IN KG AND % LEACHED											2702.2	65.4	67.56		20.27		Note 45
		TOTAL		0.0344	0.0213		TOTAL N AMOUNTS IN KG AND %											4132.9	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.7304		0.4513	Note 46
Year	N	0	1	0.0	0.0	0	100	2610	1	0	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	YES	0.0	0.0	NON	100.00	CGR0	1.296	NO	-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	1	4089.5	4089.5	0	100	11	0	0	3067.1	21	654.3	154.0	0.0	0.0	0.0	21	500.3	44.02	114.96	38.19	66.91	Note 47
2	Vol/NH3	Green	YES	0.0	1022.4	NON	100.00	WWH	1.000	NO	2412.8	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	0.0	2412.8	Dairy	2				417.4	Liquid	0.0	60.32	0.0010	18.10	0.0050	Note 49
Year	N	21	1	467.6	457.3	0	100	11	0	0	343.0	21	128.1	30.1	0.0	0.0	0.0	21	97.9	4.96	11.66	4.46	7.40	Note 47
3	Vol/NH3	Cattle	YES	10.3	114.3	NON	100.00	WWH	1.000	NO	214.9	Cattle	0.67				0.0	Cattle	7.8	1.32	0.0125	1.32	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	214.9	Dairy	2				46.7	Liquid	0.0	5.37	0.0010	1.61	0.0050	Note 49
Year	N	21	1	91.5	89.5	0	100	1	0	0	67.1	21	25.1	5.7	0.0	0.0	0.0	21	19.3	0.97	2.28	0.87	1.45	Note 47
4	Vol/NH3	Cattle	YES	2.0	22.4	NON	100.00	SBA	1.000	NO	42.1	Cattle	0.65				0.0	Cattle	1.5	0.26	0.0125	0.26	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	42.1	Dairy	2				9.2	Liquid	0.0	1.05	0.0010	0.32	0.0050	Note 49
Year	N	21	1	18.1	17.7	0	100	10	0	0	13.3	21	4.9	1.1	0.0	0.0	0.0	21	3.8	0.19	0.45	0.17	0.28	Note 47
5	Vol/NH3	Cattle	YES	0.4	4.4	NON	100.00	WBA	1.000	NO	8.3	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	0.0	8.3	Dairy	2				1.7	Liquid	0.0	0.21	0.0010	0.06	0.0050	Note 49
Year	N	21	1	3.6	3.5	0	100	2610	1	0	2.6	72	0.0	0.0	36.8	0.0	0.0	72	36.8	0.13	0.14	0.12	0.13	Note 47
6	Vol/NH3	Cattle	YES	0.1	0.9	NON	100.00	ERROR	1.296	NO	-34.2	N crop	0.8				7.0	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				0.8	Low	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	72	1	36.8	36.8	0	100	11	0	0	27.6	21	5.9	1.4	0.0	0.0	0.0	21	4.5	0.40	1.04	0.34	0.60	Note 47
7	Vol/NH3	Green	YES	0.0	9.2	NON	100.00	WWH	1.000	NO	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	0.0	21.7	Dairy	2				3.8	Liquid	0.0	0.54	0.0010	0.16	0.0050	Note 49
Year	N	21	1	4.2	4.1	0	100	11	0	0	3.1	21	1.2	0.3	0.0	0.0	0.0	21	0.9	0.04	0.10	0.04	0.07	Note 47
8	Vol/NH3	Cattle	YES	0.1	1.0	NON	100.00	WWH	1.000	NO	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	0.0	1.9	Dairy	2				0.4	Liquid	0.0	0.05	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.8	0.8	0	100	1	0	0	0.6	21	0.2	0.1	0.0	0.0	0.0	21	0.2	0.01	0.02	0.01	0.01	Note 47
9	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	SBA	1.000	NO	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	0.0	0.4	Dairy	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.2	0.2	0	100	10	0	0	0.1	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	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	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	2.66	0.69	0.11	15.94	0.12	0.02	0.01	0.00	50.20	2.94	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	140.80	87.01	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	140.80	87.01	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	17.07	13.57	2.66	0.69	0.11	15.94	0.12	0.02	0.01	0.00	50.20	Total including natural	191.00	137.20	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											40.0	40.0	1.39	2.86	1.14	1.60	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		0.0714		0.0400				TOTAL N AMOUNTS IN KG AND % LEACHED							57.8	57.8	1.45		0.43		Note 45
			TOTAL		0.0714		0.0400				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0714		0.0400	Note 46
Year	N	1	1	100.0	100.0	0	100	11	0	0	97.8	8	0.0	0.0	0.0	40.0	0.0	0	0.0	1.39	2.86	1.14	1.60	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WWH	1.000	NO	57.8	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	0.0	57.8	beverage	8				13.3		0.0	1.45	0.0000	0.43	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	2.86	1.60	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	2.86	1.60	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	3.49	2.24	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	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									40.0	40.0	1.39	2.86	1.14	1.60	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		0.0714	0.0400		TOTAL N AMOUNTS IN KG AND % LEACHED						57.8	57.8	1.45		0.43		Note 45			
			TOTAL		0.0714	0.0400		TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45			
N2O-N/N in food/beverage/fuel/other																			0.0714		0.0400	Note 46	
Year	N	1	1	100.0	100.0	0	100	11	0	0	97.8	9	0.0	0.0	0.0	0.0	40.0	0	0.0	1.39	2.86	1.14	1.60 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WWH	1.000	NO	57.8	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	0.0	57.8	other	9				13.3		0.0	1.45	0.0000	0.43	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	1	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	10	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	2.86	1.60	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	2.86	1.60	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	3.49	2.24	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 # 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											13507.8	33.8	517.55	1001.83	587.87	815.51	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											11765.7	29.5	117.66		117.66		Note 45
1-10	N leach		FIRST YEAR		0.0120	0.0144	TOTAL N AMOUNTS IN KG AND % LEACHED											14664.9	36.7	366.62		109.99		Note 45
			TOTAL		0.8575	0.6980	TOTAL N AMOUNTS IN KG AND %											39938.4	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0742		0.0604	Note 46
Year	N	1	1	100.0	100.0	0	100	261	0	0	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	YES	0.0	2.2	NON	100.00	CGR	1.000	NO	-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	1	783.9	766.7	0	100	261	1	0	575.0	21	21947.3	6192.7	0.0	0.0	0.0	21	15754.7	88.18	102.88	144.72	159.41	Note 47
2	Vol/NH3	Cattle	YES	17.2	191.7	NON	100.00	CGR	3.500	NO	-21372.3	Cattle	0.8				4585.2	Cattle	1260.4	14.69	0.0125	14.69	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				734.9	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	14726.2	14402.2	0	100	11	0	0	10801.7	21	4032.6	949.4	0.0	0.0	0.0	21	3083.2	156.23	367.17	140.57	233.05	Note 47
3	Vol/NH3	Cattle	YES	324.0	3600.6	NON	100.00	WWH	1.000	NO	6769.0	Cattle	0.67				0.0	Cattle	246.7	41.71	0.0125	41.71	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	6769.0	Dairy	2				1470.0	Liquid	0.0	169.23	0.0010	50.77	0.0050	Note 49
Year	N	21	1	2882.0	2818.6	0	100	11	0	0	2113.9	21	789.2	185.8	0.0	0.0	0.0	21	603.4	30.58	71.86	27.51	45.61	Note 47
4	Vol/NH3	Cattle	YES	63.4	704.6	NON	100.00	WWH	1.000	NO	1324.7	Cattle	0.67				0.0	Cattle	48.3	8.16	0.0125	8.16	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	1324.7	Dairy	2				287.7	Liquid	0.0	33.12	0.0010	9.94	0.0050	Note 49
Year	N	21	1	564.0	551.6	0	100	11	0	0	413.7	21	154.4	36.4	0.0	0.0	0.0	21	118.1	5.98	14.06	5.38	8.93	Note 47
5	Vol/NH3	Cattle	YES	12.4	137.9	NON	100.00	WWH	1.000	NO	259.3	Cattle	0.67				0.0	Cattle	9.4	1.60	0.0125	1.60	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	259.3	Dairy	2				56.3	Liquid	0.0	6.48	0.0010	1.94	0.0050	Note 49
Year	N	21	1	110.4	107.9	0	100	261	0	0	81.0	21	882.8	249.1	0.0	0.0	0.0	21	633.7	10.96	11.76	13.09	13.89	Note 47
6	Vol/NH3	Cattle	YES	2.4	27.0	NON	100.00	CGR	1.000	NO	-801.9	Cattle	0.8				645.6	Cattle	50.7	0.80	0.0125	0.80	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	-9.904	0.0	0.0	Dairy	2				103.5	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	592.4	579.3	0	100	261	1	0	434.5	21	16584.5	4679.5	0.0	0.0	0.0	21	11905.0	66.63	77.74	109.36	120.46	Note 47
7	Vol/NH3	Cattle	YES	13.0	144.8	NON	100.00	CGR	3.500	NO	-16150.0	Cattle	0.8				3464.8	Cattle	952.4	11.10	0.0125	11.10	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				555.3	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	11127.8	10883.0	0	100	11	0	0	8162.2	21	3047.2	717.4	0.0	0.0	0.0	21	2329.8	118.06	277.45	106.22	176.11	Note 47
8	Vol/NH3	Cattle	YES	244.8	2720.7	NON	100.00	WWH	1.000	NO	5115.0	Cattle	0.67				0.0	Cattle	186.4	31.52	0.0125	31.52	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	5115.0	Dairy	2				1110.8	Liquid	0.0	127.88	0.0010	38.36	0.0050	Note 49
Year	N	21	1	2177.7	2129.8	0	100	11	0	0	1597.4	21	596.4	140.4	0.0	0.0	0.0	21	456.0	23.10	54.30	20.79	34.46	Note 47
9	Vol/NH3	Cattle	YES	47.9	532.5	NON	100.00	WWH	1.000	NO	1001.0	Cattle	0.67				0.0	Cattle	36.5	6.17	0.0125	6.17	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	1001.0	Dairy	2				217.4	Liquid	0.0	25.03	0.0010	7.51	0.0050	Note 49
Year	N	21	1	426.2	416.8	0	100	11	0	0	312.6	21	116.7	27.5	0.0	0.0	0.0	21	89.2	4.52	10.63	4.07	6.74	Note 47
10	Vol/NH3	Cattle	YES	9.4	104.2	NON	100.00	WWH	1.000	NO	195.9	Cattle	0.67				0.0	Cattle	7.1	1.21	0.0125	1.21	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	195.9	Dairy	2				42.5	Liquid	0.0	4.90	0.0010	1.47	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	119.49	83.64	16.37	3.20	4.81	90.29	63.20	12.37	2.42	400.67	82.14	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	1001.83	815.51	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	1001.83	815.51	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	4.88	119.49	83.64	16.37	3.20	4.81	90.29	63.20	12.37	2.42	400.67	Total including natural	1402.51	1216.18	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 # 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 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															10555.0	46.3	254.88	478.74	287.26	392.66	Note 45
Year N NH3	ACCORDING TO		IPCC 1996	IPCC 2006			TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											5463.1	24.0	54.63		54.63		Note 45
1-10 N leach	FIRST YEAR		0.0120	0.0144			TOTAL N AMOUNTS IN KG AND % LEACHED											6769.0	29.7	169.23		50.77		Note 45
	TOTAL		0.4098	0.3361			TOTAL N AMOUNTS IN KG AND %											22787.1	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0454		0.0372	Note 46
Year	N	1	1	100.0	100.0	0	100	261	0	0	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	YES	0.0	2.2	NON	100.00	CGR	1.000	NO	-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	1	783.9	766.7	0	100	261	1	0	575.0	21	21947.3	6192.7	0.0	0.0	0.0	21	15754.7	88.18	102.88	144.72	159.41	Note 47
2	Vol/NH3	Cattle	YES	17.2	191.7	NON	100.00	CGR	3.500	NO	-21372.3	Cattle	0.8				4585.2	Cattle	1260.4	14.69	0.0125	14.69	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	3.500	-37.169	0.0	0.0	Dairy	2				734.9	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	14726.2	14402.2	0	100	11	0	0	10801.7	8	0.0	0.0	0.0	4032.6	0.0	0	0.0	153.40	361.87	126.39	216.40	Note 47
3	Vol/NH3	Cattle	YES	324.0	3600.6	NON	100.00	WWH	1.000	NO	6769.0	Food/	0.67				0.0	NONE	0.0	39.25	0.0125	39.25	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	6769.0	beverage	8				1470.0		0.0	169.23	0.0000	50.77	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	261	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	261	1	0	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	YES	0.0	0.0	NON	100.00	CGR	3.500	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	1	0.0	0.0	0	100	11	0	0	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	YES	0.0	0.0	NON	100.00	NO	1.000	NO	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	119.49	83.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	208.01	42.64	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	478.74	392.66	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	478.74	392.66	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	4.88	119.49	83.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	208.01	Total including natural	686.75	600.67	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			13.92	13.85	1.73	3.69	1.56	2.24 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.74	13.67	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0719	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED			72.86	72.49	1.82		0.55	Note 45
	TOTAL	0.0923	0.0560	TOTAL N AMOUNTS IN KG AND %			100.52	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2652		0.1610 Note 46
							Total/year 1					
Area with crop, ha							0.88	1.27				Note 50
Natural background emissions, kg N2O-N/ha:							0.88			4.57		3.12 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			13.65	13.58	2.02	3.98	1.54	2.23 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.27	14.19	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0780	0.0429	TOTAL N AMOUNTS IN KG AND % LEACHED			72.60	72.22	1.81		0.54	Note 45
	TOTAL	0.0995	0.0557	TOTAL N AMOUNTS IN KG AND %			100.52	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2914		0.1632 Note 46
							Total/year 1					
Area with crop, ha							0.86	1.24				Note 50
Natural background emissions, kg N2O-N/ha:							0.86			4.84		3.09 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			12.82	12.25	2.21	4.20	1.47	2.21 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			20.39	19.47	0.20		0.20	Note 45
1-10 N leach	FIRST YEAR	0.0843	0.0430	TOTAL N AMOUNTS IN KG AND % LEACHED			71.49	68.28	1.79		0.54	Note 45
	TOTAL	0.1050	0.0553	TOTAL N AMOUNTS IN KG AND %			104.71	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3274		0.1726 Note 46
							Total/year 1					
Area with crop, ha							0.78	1.13				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.98		3.00 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			13.19	13.19	2.44	4.55	2.12	2.79 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	0.0847	0.0533	TOTAL N AMOUNTS IN KG AND % LEACHED			82.32	82.32	2.06		0.62	Note 45
	TOTAL	0.1137	0.0697	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3447		0.2112 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.14				Note 50
Natural background emissions, kg N2O-N/ha:							0.79			5.34		3.58 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			12.38	12.31	1.75	3.74	1.58	2.28 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.42	14.34	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0719	0.0432	TOTAL N AMOUNTS IN KG AND % LEACHED			73.75	73.35	1.84		0.55	Note 45
	TOTAL	0.0936	0.0570	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3022		0.1841 Note 46
							Total/year 1					
Area with crop, ha							0.89	1.29				Note 50
Natural background emissions, kg N2O-N/ha:							0.89			4.64		3.17 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			12.13	12.07	2.06	4.05	1.57	2.27 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.96	14.88	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0784	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED			73.45	73.05	1.84		0.55	Note 45
	TOTAL	0.1011	0.0567	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3334		0.1868 Note 46
							Total/year 1					
Area with crop, ha							0.87	1.25				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.91		3.13 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			11.36	10.82	2.25	4.27	1.49	2.25 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			21.37	20.36	0.21		0.21	Note 45
1-10 N leach	FIRST YEAR	0.0850	0.0432	TOTAL N AMOUNTS IN KG AND % LEACHED			72.23	68.82	1.81		0.54	Note 45
	TOTAL	0.1068	0.0562	TOTAL N AMOUNTS IN KG AND %			104.96	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3762		0.1979 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.14				Note 50
Natural background emissions, kg N2O-N/ha:							0.79			5.06		3.04 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			11.70	11.70	2.50	4.64	2.18	2.85 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	0.0854	0.0540	TOTAL N AMOUNTS IN KG AND % LEACHED			83.68	83.68	2.09		0.63	Note 45
	TOTAL	0.1161	0.0713	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3968		0.2439 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			5.44		3.65 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			19.58	19.58	1.63	3.45	1.43	2.07 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			12.35	12.35	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.0720	0.0426	TOTAL N AMOUNTS IN KG AND % LEACHED			68.07	68.07	1.70		0.51	Note 45
	TOTAL	0.0863	0.0516	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1762		0.1055 Note 46
							Total/year 1					
Area with crop, ha						0.84	1.21					Note 50
Natural background emissions, kg N2O-N/ha:						0.84				4.29		2.90 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			18.58	18.48	1.76	3.58	1.37	2.02 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			15.77	15.69	0.16		0.16	Note 45
1-10 N leach	FIRST YEAR	0.0767	0.0427	TOTAL N AMOUNTS IN KG AND % LEACHED			66.16	65.83	1.65		0.50	Note 45
	TOTAL	0.0894	0.0506	TOTAL N AMOUNTS IN KG AND %			100.51	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1925		0.1090 Note 46
							Total/year 1					
Area with crop, ha						0.79	1.13					Note 50
Natural background emissions, kg N2O-N/ha:						0.79				4.36		2.81 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			18.11	17.69	1.87	3.68	1.32	2.00 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			20.23	19.75	0.20		0.20	Note 45
1-10 N leach	FIRST YEAR	0.0808	0.0429	TOTAL N AMOUNTS IN KG AND % LEACHED			64.07	62.56	1.60		0.48	Note 45
	TOTAL	0.0919	0.0501	TOTAL N AMOUNTS IN KG AND %			102.40	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2030		0.1107 Note 46
							Total/year 1					
Area with crop, ha						0.76	1.10					Note 50
Natural background emissions, kg N2O-N/ha:						0.76				4.44		2.77 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			19.70	19.70	2.27	4.22	1.96	2.57 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	0.0823	0.0509	TOTAL N AMOUNTS IN KG AND % LEACHED			76.18	76.18	1.90		0.57	Note 45
	TOTAL	0.1054	0.0643	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2140		0.1307 Note 46
							Total/year 1					
Area with crop, ha						0.81	1.17					Note 50
Natural background emissions, kg N2O-N/ha:						0.81				5.03		3.39 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				22.98	22.98	1.59	3.37	1.38	1.99	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				9.67	9.67	0.10		0.10		Note 45
1-10 N leach	FIRST YEAR	0.0716	0.0419	TOTAL N AMOUNTS IN KG AND % LEACHED				67.34	67.34	1.68		0.51		Note 45
	TOTAL	0.0842	0.0497	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.1465		0.0864	Note 46
								Total/year 1						
Area with crop, ha								0.80	1.15					Note 50
Natural background emissions, kg N2O-N/ha:								0.80			4.17		2.79	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				22.20	22.20	1.67	3.42	1.31	1.93	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				13.33	13.33	0.13		0.13		Note 45
1-10 N leach	FIRST YEAR	0.0757	0.0423	TOTAL N AMOUNTS IN KG AND % LEACHED				64.46	64.46	1.61		0.48		Note 45
	TOTAL	0.0854	0.0483	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.1539		0.0869	Note 46
								Total/year 1						
Area with crop, ha								0.77	1.11					Note 50
Natural background emissions, kg N2O-N/ha:								0.77			4.18		2.70	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				21.34	21.31	1.71	3.46	1.27	1.90	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				15.15	15.13	0.15		0.15		Note 45
1-10 N leach	FIRST YEAR	0.0785	0.0427	TOTAL N AMOUNTS IN KG AND % LEACHED				63.66	63.56	1.59		0.48		Note 45
	TOTAL	0.0864	0.0474	TOTAL N AMOUNTS IN KG AND %				100.16	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.1620		0.0888	Note 46
								Total/year 1						
Area with crop, ha								0.73	1.06					Note 50
Natural background emissions, kg N2O-N/ha:								0.73			4.19		2.63	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				22.37	22.37	2.07	3.96	1.78	2.37	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	0.0804	0.0490	TOTAL N AMOUNTS IN KG AND % LEACHED				73.92	73.92	1.85		0.55		Note 45
	TOTAL	0.0989	0.0592	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.1769		0.1059	Note 46
Area with crop, ha	Total/year 1							0.76	1.09					Note 50
Natural background emissions, kg N2O-N/ha:								0.76			4.72		3.13	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			11.67	11.67	1.74	3.73	1.56	2.26 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.64	14.64	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0721	0.0434	TOTAL N AMOUNTS IN KG AND % LEACHED			73.69	73.69	1.84		0.55	Note 45
	TOTAL	0.0931	0.0566	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3192		0.1939 Note 46
							Total/year 1					
Area with crop, ha							0.87	1.25				Note 50
Natural background emissions, kg N2O-N/ha:							0.87			4.60		3.13 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			11.03	11.03	1.87	3.79	1.44	2.16 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			20.32	20.32	0.20		0.20	Note 45
1-10 N leach	FIRST YEAR	0.0785	0.0440	TOTAL N AMOUNTS IN KG AND % LEACHED			68.65	68.65	1.72		0.51	Note 45
	TOTAL	0.0947	0.0539	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3435		0.1956 Note 46
							Total/year 1					
Area with crop, ha							0.81	1.17				Note 50
Natural background emissions, kg N2O-N/ha:							0.81			4.60		2.97 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			10.35	10.32	1.92	3.83	1.36	2.09 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			22.79	22.73	0.23		0.23	Note 45
1-10 N leach	FIRST YEAR	0.0828	0.0446	TOTAL N AMOUNTS IN KG AND % LEACHED			67.12	66.95	1.68		0.50	Note 45
	TOTAL	0.0957	0.0522	TOTAL N AMOUNTS IN KG AND %			100.25	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3701		0.2016 Note 46
							Total/year 1					
Area with crop, ha							0.75	1.09				Note 50
Natural background emissions, kg N2O-N/ha:							0.75			4.58		2.84 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			11.17	11.17	2.53	4.68	2.20	2.88 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	0.0858	0.0544	TOTAL N AMOUNTS IN KG AND % LEACHED			84.17	84.17	2.10		0.63	Note 45
	TOTAL	0.1169	0.0720	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4189		0.2578 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			5.48		3.68 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				7.13	6.73	2.70	5.04	1.80	2.56 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	0.0865	0.0442	TOTAL N AMOUNTS IN KG AND % LEACHED				90.14	85.09	2.25		0.68	Note 45
	TOTAL	0.1259	0.0639	TOTAL N AMOUNTS IN KG AND %				105.93	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.7062		0.3588 Note 46
								Total/year 1					
Area with crop, ha							0.85	1.23					Note 50
Natural background emissions, kg N2O-N/ha:							0.85				5.89		3.41 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				6.72	6.72	2.71	4.96	1.56	2.27 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	0.0878	0.0392	TOTAL N AMOUNTS IN KG AND % LEACHED				88.24	88.24	2.21		0.66	Note 45
	TOTAL	0.1241	0.0567	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.7388		0.3377 Note 46
								Total/year 1					
Area with crop, ha							0.82	1.18					Note 50
Natural background emissions, kg N2O-N/ha:							0.82				5.78		3.08 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				4.45	4.21	2.45	4.63	1.60	2.42 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				23.48	22.20	0.23		0.23	Note 45
1-10 N leach	FIRST YEAR	0.0874	0.0444	TOTAL N AMOUNTS IN KG AND % LEACHED				77.84	73.60	1.95		0.58	Note 45
	TOTAL	0.1157	0.0605	TOTAL N AMOUNTS IN KG AND %				105.77	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.0401		0.5440 Note 46
								Total/year 1					
Area with crop, ha							0.83	1.19					Note 50
Natural background emissions, kg N2O-N/ha:							0.83				5.45		3.24 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				4.59	4.59	2.79	5.10	2.02	2.74 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	0.0887	0.0483	TOTAL N AMOUNTS IN KG AND % LEACHED				90.19	90.19	2.25		0.68	Note 45
	TOTAL	0.1275	0.0686	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.1120		0.5985 Note 46
								Total/year 1					
Area with crop, ha							0.82	1.19					Note 50
Natural background emissions, kg N2O-N/ha:							0.82				5.92		3.57 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		340	8.15	66	141	61	93	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		1402	33.66	14		14		Note 45
1-10 N leach	FIRST YEAR	0.0025	0.0025	TOTAL N AMOUNTS IN KG AND % LEACHED		2424	58.19	61		18		Note 45
	TOTAL	0.0345	0.0227	TOTAL N AMOUNTS IN KG AND %		4166	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.4150		0.2735	Note 46
							Total/year 1					
Area with crop, ha						63.28	3.71					Note 50
Natural background emissions, kg N2O-N/ha:						63.28			204		156	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		193	4.66	61	141	54	87	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		1238	29.95	12		12		Note 45
1-10 N leach	FIRST YEAR	0.0025	0.0025	TOTAL N AMOUNTS IN KG AND % LEACHED		2702	65.38	68		20		Note 45
	TOTAL	0.0344	0.0213	TOTAL N AMOUNTS IN KG AND %		4133	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.7304		0.4513	Note 46
							Total/year 1					
Area with crop, ha						50.20	2.94					Note 50
Natural background emissions, kg N2O-N/ha:						50.20			191		137	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			40.00	40.00	1.39	2.86	1.14	1.60	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	0.0714	0.0400	TOTAL N AMOUNTS IN KG AND % LEACHED			57.80	57.80	1.45		0.43		Note 45
	TOTAL	0.0714	0.0400	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0714		0.0400	Note 46
								Total/year 1					
Area with crop, ha						0.64	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.64				3.49		2.24	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			40.00	40.00	1.39	2.86	1.14	1.60	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	0.0714	0.0400	TOTAL N AMOUNTS IN KG AND % LEACHED			57.80	57.80	1.45		0.43		Note 45
	TOTAL	0.0714	0.0400	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0714		0.0400	Note 46
								Total/year 1					
Area with crop, ha						0.64	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.64				3.49		2.24	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			13508	33.82	518	1002	588	816	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			11766	29.46	118		118		Note 45
1-10 N leach	FIRST YEAR	0.0120	0.0144	TOTAL N AMOUNTS IN KG AND % LEACHED			14665	36.72	367		110		Note 45
	TOTAL	0.8575	0.6980	TOTAL N AMOUNTS IN KG AND %			39938	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0742		0.0604	Note 46
								Total/year 1					
Area with crop, ha						400.67	82.14						Note 50
Natural background emissions, kg N2O-N/ha:						400.67				1403		1216	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			10555	46.32	255	479	287	393	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			5463	23.97	55		55		Note 45
1-10 N leach	FIRST YEAR	0.0120	0.0144	TOTAL N AMOUNTS IN KG AND % LEACHED			6769	29.71	169		51		Note 45
	TOTAL	0.4098	0.3361	TOTAL N AMOUNTS IN KG AND %			22787	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0454		0.0372	Note 46
								Total/year 1					
Area with crop, ha						208.01	42.64						Note 50
Natural background emissions, kg N2O-N/ha:						208.01				687		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	0.0719	0.0854	0.0429	0.0540
TOTAL	0.0923	0.1161	0.0553	0.0713

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.69	4.64	2.21	2.85

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.2652	0.3968	0.1610	0.2439

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.78	0.89	0.78	1.15	4.57	5.44	3.00	3.65

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	0.0720	0.0823	0.0426	0.0509
TOTAL	0.0863	0.1054	0.0501	0.0643

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.45	4.22	2	2.57

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.1762	0.2140	0.1055	0.1307

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.76	0.84	0.76	0.84	4.29	5.03	2.77	3.39

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	0.0716	0.0858	0.0419	0.0544
TOTAL	0.0842	0.1169	0.0474	0.0720

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.37	4.68	1.9	2.88

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.1465	0.4189	0.0864	0.2578

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.73	0.87	0.73	0.87	4.17	5.48	2.63	3.68

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	0.0865	0.0887	0.0392	0.0483
TOTAL	0.1157	0.1275	0.0567	0.0686

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.63	5.1	2.27	2.74

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.7062	1.1120	0.3377	0.5985

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.82	0.85	0.82	0.85	5.45	5.92	3.08	3.57

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	0.0716	0.0887	0.0392	0.0544
TOTAL	0.0842	0.1275	0.0474	0.0720

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.37	5.10	1.90	2.88

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.1465	1.1120	0.0864	0.5985

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.73	0.89	0.73	1.15	4.17	5.92	2.63	3.68