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 MAIZE COBS FOR BIOETHANOL 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	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											13.8	13.7	1.77	3.73	1.59	2.28	Note 45
Year N NH3			ACCORDING TO	IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											13.8	13.7	0.14		0.14		Note 45
1-10 N leach			FIRST YEAR	0.0727	0.0439		TOTAL N AMOUNTS IN KG AND % LEACHED											72.9	72.6	1.82		0.55		Note 45
			TOTAL	0.0932	0.0569		TOTAL N AMOUNTS IN KG AND %											100.5	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2704		0.1651		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	40.0	11.7	0.0	0.0	0.0	21	28.3	1.42	2.91	1.28	1.76	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Liquid	0.0	1.45	0.0010	0.43	0.0050	Note 49
Year	N	21	1	26.5	25.9	0	100	11	0	0	19.4	21	7.3	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	6.5	NON	100.00	WWH	1.000	NO	12.2	Cattle	0.67				0.0	Cattle	0.4	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	12.2	Dairy	2				2.6	Liquid	0.0	0.30	0.0010	0.09	0.0050	Note 49
Year	N	21	1	5.2	5.1	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	59	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	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.26	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.73	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	3.73	2.28	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.90	Total including natural	4.63	3.18	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL AND CATTLE DAIRY Note 43
AND CONTINUING WITH SEPARATED CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											13.5	13.5	2.06	4.02	1.58	2.27	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											14.3	14.3	0.14		0.14		Note 45
1-10	N leach		FIRST YEAR		0.0789	0.0438	TOTAL N AMOUNTS IN KG AND % LEACHED											72.7	72.3	1.82		0.55		Note 45
			TOTAL		0.1004	0.0566	TOTAL N AMOUNTS IN KG AND %											100.5	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.2971		0.1675	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	40.0	11.7	0.0	0.0	0.0	22	28.3	1.67	3.16	1.28	1.75	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Sep	0.0	1.45	0.0105	0.43	0.0050	Note 49
Year	N	22	1	27.3	25.0	0	100	11	0	0	18.8	21	6.5	1.5	0.0	0.0	0.0	22	5.0	0.32	0.71	0.24	0.42	Note 47
2	Vol/NH3	Cattle	YES	2.3	6.3	NON	100.00	WWH	1.000	NO	12.3	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	12.3	Dairy	2				2.6	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	2.2	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	2.2	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	59	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.23	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.02	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	4.02	2.27	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	4.90	3.14	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 MAIZE COBS FOR BIOETHANOL 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											12.7	12.1	2.24	4.24	1.51	2.25 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							20.5	19.6	0.20		0.20	Note 45
1-10 N leach			FIRST YEAR		0.0852		0.0438				TOTAL N AMOUNTS IN KG AND % LEACHED							71.6	68.3	1.79		0.54	Note 45
			TOTAL		0.1059		0.0562				TOTAL N AMOUNTS IN KG AND %							104.7	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.3340		0.1773	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	40.0	11.7	0.0	0.0	0.0	23	28.3	1.92	3.41	1.28	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	23	1	30.9	21.6	0	100	11	0	0	16.2	21	3.9	0.9	0.0	0.0	0.0	23	3.0	0.29	0.74	0.20	0.44 Note 47
2	Vol/NH3	Cattle	YES	9.3	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	59	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	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	4.24	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	4.24	2.25 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	5.04	3.05 Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL 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	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							13.1				13.1	2.48	4.59	2.16	2.83	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		0.0856	0.0542	TOTAL N AMOUNTS IN KG AND % LEACHED							82.4				82.4	2.06		0.62		Note 45
			TOTAL		0.1147	0.0706	TOTAL N AMOUNTS IN KG AND %							100.0				100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.3514		0.2164	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	40.0	11.7	0.0	0.0	0.0	24	28.3	1.96	3.43	1.71	2.17	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Graz	0.0	1.45	0.0200	0.43	0.0200	Note 49
Year	N	24	1	28.3	28.3	0	100	11	0	0	26.4	21	5.1	1.2	0.0	0.0	0.0	24	3.9	0.45	1.00	0.39	0.57	Note 47
2	Vol/NH3	Cattle	YES	0.0	2.0	NON	100.00	WWH	1.000	NO	21.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	21.3	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	59	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.14	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.59	2.83	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.59	2.83	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	5.40	3.64	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL 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											12.3	12.2	1.79	3.78	1.62	2.32 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									14.5	14.4	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0727		0.0441		TOTAL N AMOUNTS IN KG AND % LEACHED									73.8	73.4	1.85		0.55	Note 45
			TOTAL		0.0945		0.0579		TOTAL N AMOUNTS IN KG AND %									100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3081		0.1888 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	40.0	10.3	0.0	0.0	0.0	21	29.7	1.42	2.91	1.28	1.76 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Liquid	0.0	1.45	0.0010	0.43	0.0050 Note 49
Year	N	21	1	27.8	27.2	0	100	11	0	0	20.4	22	7.6	1.6	0.0	0.0	0.0	21	6.0	0.29	0.69	0.27	0.44 Note 47
2	Vol/NH3	Cattle	YES	0.6	6.8	NON	100.00	WWH	1.000	NO	12.8	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	12.8	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	59	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.91	1.28	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.78	2.32	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.78	2.32	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.91	Total including natural	4.69	3.23	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 MAIZE COBS FOR BIOETHANOL 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	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											12.0	12.0	2.10	4.08	1.60	2.30 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		0.0792		0.0440				TOTAL N AMOUNTS IN KG AND % LEACHED							73.5	73.1	1.84		0.55	Note 45
			TOTAL		0.1021		0.0576				TOTAL N AMOUNTS IN KG AND %							100.6	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3398		0.1916 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	40.0	10.3	0.0	0.0	0.0	22	29.7	1.69	3.17	1.29	1.76 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Sep	0.0	1.45	0.0105	0.43	0.0050 Note 49
Year	N	22	1	28.7	26.2	0	100	11	0	0	19.7	22	6.8	1.4	0.0	0.0	0.0	22	5.4	0.33	0.75	0.26	0.45 Note 47
2	Vol/NH3	Cattle	YES	2.4	6.6	NON	100.00	WWH	1.000	NO	12.9	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	12.9	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	0.7	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	59	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	1.24	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.08	2.30	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	4.08	2.30	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.89	Total including natural	4.97	3.19	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL 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											11.2	10.7	2.29	4.31	1.53	2.28 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									21.5	20.4	0.21		0.21	Note 45
1-10 N leach			FIRST YEAR		0.0859		0.0440		TOTAL N AMOUNTS IN KG AND % LEACHED									72.3	68.9	1.81		0.54	Note 45
			TOTAL		0.1078		0.0571		TOTAL N AMOUNTS IN KG AND %									105.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3836		0.2032 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	40.0	10.3	0.0	0.0	0.0	23	29.7	1.95	3.44	1.29	1.76 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Deep	0.0	1.45	0.0200	0.43	0.0050 Note 49
Year	N	23	1	32.4	22.7	0	100	11	0	0	17.0	22	4.1	0.8	0.0	0.0	0.0	23	3.2	0.30	0.78	0.21	0.47 Note 47
2	Vol/NH3	Cattle	YES	9.7	5.7	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	0.04	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	59	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	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	4.31	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	0.00	Total anthropogenic	4.31	2.28	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	5.12	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 MAIZE COBS FOR BIOETHANOL 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											11.6	11.6	2.54	4.68	2.22	2.89	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		0.0863	0.0549		TOTAL N AMOUNTS IN KG AND % LEACHED								83.8	83.8	2.09		0.63		Note 45
	TOTAL		0.1171	0.0723		TOTAL N AMOUNTS IN KG AND %								100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																	0.4044		0.2497	Note 46
Year N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	40.0	10.3	0.0	0.0	0.0	24	29.7	1.99	3.45	1.74	2.20	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Cattle	0.83				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				13.5	Graz	0.0	1.45	0.0200	0.43	0.0200	Note 49
Year N	24	1	29.7	29.7	0	100	11	0	0	27.6	22	5.3	1.1	0.0	0.0	0.0	24	4.2	0.48	1.06	0.41	0.60	Note 47
2 Vol/NH3	Cattle	YES	0.0	2.1	NON	100.00	WWH	1.000	NO	22.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	22.3	Beef	2				3.8	Graz	0.0	0.56	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	0.09	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	59	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
6 Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Cattle	0.83				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	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.68	2.89	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	2.89	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	5.50	3.71	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL 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				1.66	3.48	1.46	2.10	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	0.0728	0.0434				TOTAL N AMOUNTS IN KG AND % LEACHED			68.1	68.1				1.70		0.51		Note 45
						TOTAL	0.0871	0.0525				TOTAL N AMOUNTS IN KG AND %			100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1779		0.1072		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	40.0	16.7	0.0	0.0	0.0	31	23.3	1.41	2.91	1.25	1.74	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Pig	0.83				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				13.5	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	59	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
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Pig	0.83				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	0.71	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.20	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.48	2.10	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.48	2.10	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.86	Total including natural	4.34	2.96	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 MAIZE COBS FOR BIOETHANOL 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	1.80	3.61	1.40	2.06 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		0.0775		0.0435				TOTAL N AMOUNTS IN KG AND % LEACHED							66.2	65.8	1.65		0.50	Note 45
			TOTAL		0.0902		0.0514				TOTAL N AMOUNTS IN KG AND %							100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1942		0.1107 Note 46
Year	N		1	1	100.0	100.0	0	100	59	0	0	97.8	32	40.0	16.7	0.0	0.0	0.0	32	23.3	1.59	3.10	1.24	1.74 Note 47
1	Vol/NH3	N	YES		0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Pig	0.83				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				13.5	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	59	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
6	Vol/NH3	Pig	YES		0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Pig	0.83				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	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	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	3.61	2.06	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	3.61	2.06	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	4.41	2.86	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 MAIZE COBS FOR BIOETHANOL 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	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											18.1	17.7	1.91	3.71	1.35	2.04	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		0.0816	0.0437	TOTAL N AMOUNTS IN KG AND % LEACHED											64.1	62.6	1.60		0.48		Note 45
			TOTAL		0.0927	0.0509	TOTAL N AMOUNTS IN KG AND %											102.4	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.2049		0.1125	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	40.0	16.7	0.0	0.0	0.0	33	23.3	1.74	3.27	1.23	1.75	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Pig	0.83				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				13.5	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	59	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
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Pig	0.83				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	0.71	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	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	3.71	2.04	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.71	2.04	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.49	2.82	Note 51

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

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

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											19.7	19.7	2.30	4.25	1.99	2.61 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		0.0831		0.0517				TOTAL N AMOUNTS IN KG AND % LEACHED							76.2	76.2	1.90		0.57	Note 45
			TOTAL		0.1062		0.0652				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2156		0.1323 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	40.0	16.7	0.0	0.0	0.0	34	23.3	1.86	3.32	1.61	2.07 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Pig	0.83				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				13.5	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	59	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
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Pig	0.83				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	0.71	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	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	4.25	2.61	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	4.25	2.61	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	5.08	3.44	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 MAIZE COBS FOR BIOETHANOL 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				1.62	3.40	1.42	2.02	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		0.0724		0.0428		TOTAL N AMOUNTS IN KG AND % LEACHED					67.3	67.3				1.68		0.51		Note 45
			TOTAL		0.0850		0.0505		TOTAL N AMOUNTS IN KG AND %					100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1479		0.0879	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	41	19.6	1.41	2.90	1.24	1.71 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	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	3.40	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	3.40	2.02	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	4.22	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 MAIZE COBS FOR BIOETHANOL AND POULTRY MEAT Note 43
AND CONTINUING WITH SEPARATED POULTRY MANURE TO PRODUCE WINTER WHEAT FOR POULTRY MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											22.2	22.2	1.70	3.45	1.35	1.96	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		0.0765	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED											64.5	64.5	1.61		0.48		Note 45
			TOTAL		0.0862	0.0491	TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.1554		0.0884	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	42	19.6	1.55	3.06	1.22	1.73	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	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	0.00	Current crops	3.45	1.96	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	3.45	1.96	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	Total including natural	4.24	2.75	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 MAIZE COBS FOR BIOETHANOL 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	1.75	3.49	1.30	1.93 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		0.0793		0.0435		TOTAL N AMOUNTS IN KG AND % LEACHED									63.7	63.6	1.59		0.48	Note 45
			TOTAL		0.0873		0.0482		TOTAL N AMOUNTS IN KG AND %									100.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1635		0.0903 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	43	19.6	1.63	3.17	1.21	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.05	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	3.49	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	Total anthropogenic	3.49	1.93	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Total including natural	4.24	2.68	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL 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	2.11	3.99	1.81	2.40 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		0.0813		0.0499		TOTAL N AMOUNTS IN KG AND % LEACHED									73.9	73.9	1.85		0.55	Note 45
			TOTAL		0.0998		0.0601		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1784		0.1074 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	44	19.6	1.78	3.25	1.54	1.99 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	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	3.99	2.40	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	3.99	2.40	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.77	3.18	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 MAIZE COBS FOR BIOETHANOL 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	1.77	3.76	1.60	2.30 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		0.0729		0.0442	TOTAL N AMOUNTS IN KG AND % LEACHED										73.7	73.7	1.84		0.55	Note 45
			TOTAL		0.0940		0.0574	TOTAL N AMOUNTS IN KG AND %										100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3220		0.1967 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	41	30.4	1.42	2.92	1.28	1.77 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	1.25	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	3.76	2.30	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	3.76	2.30	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.89	Total including natural	4.65	3.19	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 MAIZE COBS FOR BIOETHANOL 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				1.90	3.82	1.47	2.19	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		0.0793	0.0448	TOTAL N AMOUNTS IN KG AND % LEACHED							68.6	68.6				1.72		0.51		Note 45
			TOTAL		0.0955	0.0547	TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.3464		0.1986	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	42	30.4	1.63	3.17	1.26	1.79	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.17	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	3.82	2.19	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	3.82	2.19	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	4.65	3.02	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 MAIZE COBS FOR BIOETHANOL 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	1.96	3.86	1.39	2.12	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		0.0836		0.0454				TOTAL N AMOUNTS IN KG AND % LEACHED							67.1	66.9	1.68		0.50		Note 45
			TOTAL		0.0966		0.0530				TOTAL N AMOUNTS IN KG AND %							100.3	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.3732		0.2048	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	43	30.4	1.76	3.34	1.24	1.82	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	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	3.86	2.12	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	3.86	2.12	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.64	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 MAIZE COBS FOR BIOETHANOL 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	2.56	4.71	2.23	2.91 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		0.0866		0.0552				TOTAL N AMOUNTS IN KG AND % LEACHED							84.2	84.2	2.10		0.63	Note 45
			TOTAL		0.1178		0.0728				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.4219		0.2607 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	44	30.4	2.00	3.47	1.75	2.21 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Poultry	0.83				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				13.5	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	59	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Poultry	0.83				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	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	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	4.71	2.91	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.71	2.91	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	5.53	3.73	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 MAIZE COBS FOR BIOETHANOL 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	2.73	5.07	1.83	2.59 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		0.0873		0.0450				TOTAL N AMOUNTS IN KG AND % LEACHED							90.1	85.1	2.25		0.68	Note 45
			TOTAL		0.1267		0.0648				TOTAL N AMOUNTS IN KG AND %							105.9	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.7108		0.3633	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	51	40.0	5.7	0.0	0.0	0.0	53	34.3	1.98	3.49	1.29	1.80 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Sheep	0.83				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				13.5	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	59	0	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	MCB	1.000	NO	0.0	Sheep	0.83				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	0.71	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.22	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	5.07	2.59	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	5.07	2.59	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	5.94	3.47	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 MAIZE COBS FOR BIOETHANOL 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	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											6.7	6.7	2.74	5.00	1.59	2.30 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		0.0886		0.0401				TOTAL N AMOUNTS IN KG AND % LEACHED							88.2	88.2	2.21		0.66	Note 45
			TOTAL		0.1249		0.0575				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.7437		0.3425 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	51	40.0	5.7	0.0	0.0	0.0	54	34.3	2.08	3.54	1.15	1.60 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Sheep	0.83				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				13.5	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	59	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
6	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Sheep	0.83				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	0.71	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	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	5.00	2.30	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	5.00	2.30	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	5.83	3.14	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 MAIZE COBS FOR BIOETHANOL 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	2.48	4.66	1.63	2.45	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		0.0882		0.0453				TOTAL N AMOUNTS IN KG AND % LEACHED						77.8	73.6	1.95		0.58		Note 45
			TOTAL		0.1165		0.0613				TOTAL N AMOUNTS IN KG AND %						105.8	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				1.0475		0.5514	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	61	40.0	3.8	0.0	0.0	0.0	63	36.2	2.01	3.53	1.30	1.81 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Goat	0.83				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				13.5	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	59	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
6	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Goat	0.83				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	0.71	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	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	4.66	2.45	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.66	2.45	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	5.51	3.30	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL 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	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											4.6	4.6	2.83	5.13	2.05	2.78	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		0.0895		0.0491				TOTAL N AMOUNTS IN KG AND % LEACHED							90.2	90.2	2.25		0.68		Note 45
			TOTAL		0.1283		0.0694				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				1.1191		0.6056		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	61	40.0	3.8	0.0	0.0	0.0	64	36.2	2.11	3.58	1.51	1.96	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Goat	0.83				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				13.5	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	59	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
6	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	Goat	0.83				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	0.71	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	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	5.13	2.78	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	5.13	2.78	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	5.98	3.62	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 MAIZE COBS FOR BIOETHANOL AND 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	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											3.3	3.3	1.93	4.12	1.63	2.40	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											15.7	15.7	0.16		0.16		Note 45
1-10	N leach		FIRST YEAR		0.0715	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED											81.2	81.1	2.03		0.61		Note 45
			TOTAL		0.1029	0.0600	TOTAL N AMOUNTS IN KG AND %											100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					1.2585		0.7331	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	71	0.0	0.0	40.0	0.0	0.0	71	40.0	1.39	2.86	1.15	1.60	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	N crop	0.83				0.0	Green	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	high N	71				13.5	High	0.0	1.45	0.0000	0.43	0.0000	Note 49
Year	N	71	1	40.0	40.0	0	100	11	0	0	30.0	21	11.2	2.6	0.0	0.0	0.0	21	8.6	0.43	1.01	0.39	0.64	Note 47
2	Vol/NH3	Green	YES	0.0	10.0	NON	100.00	WWH	1.000	NO	18.8	Cattle	0.67				0.0	Cattle	0.7	0.11	0.0125	0.11	0.0100	Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.627	0.0	18.8	Dairy	2				4.1	Liquid	0.0	0.47	0.0010	0.14	0.0050	Note 49
Year	N	21	1	8.0	7.8	0	100	11	0	0	5.9	21	2.2	0.5	0.0	0.0	0.0	21	1.7	0.08	0.20	0.08	0.13	Note 47
3	Vol/NH3	Cattle	YES	0.2	2.0	NON	100.00	WWH	1.000	NO	3.7	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	3.7	Dairy	2				0.8	Liquid	0.0	0.09	0.0010	0.03	0.0050	Note 49
Year	N	21	1	1.6	1.5	0	100	1	0	0	1.1	21	0.4	0.1	0.0	0.0	0.0	21	0.3	0.02	0.04	0.01	0.02	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.4	NON	100.00	SBA	1.000	NO	0.7	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	0.7	Dairy	2				0.2	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.3	0.3	0	100	10	0	0	0.2	21	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	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	59	0	0	0.0	71	0.0	0.0	0.0	0.0	0.0	71	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	N crop	0.83				0.0	Green	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	high N	71				0.0	High	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	71	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	Green	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	High	0.933	1.000		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	0.71	0.23	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.41	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	4.12	2.40	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	4.12	2.40	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.23	0.05	0.01	0.00	0.00	0.00	0.00	0.00	1.01	Total including natural	5.12	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 MAIZE COBS FOR BIOETHANOL AND 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										1.9	1.9	1.88	4.12	1.57	2.35 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										14.2	14.2	0.14		0.14	Note 45
1-10 N leach			FIRST YEAR		0.0715		0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED										84.0	83.9	2.10		0.63	Note 45
			TOTAL		0.1031		0.0587	TOTAL N AMOUNTS IN KG AND %										100.1	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				2.2067		1.2556	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	72	0.0	0.0	40.0	0.0	0.0	72	40.0	1.39	2.86	1.15	1.60 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	N crop	0.83				0.0	Green	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	low N	72				13.5	Low	0.0	1.45	0.0000	0.43	0.0000 Note 49
Year	N	72	1	40.0	40.0	0	100	11	0	0	30.0	21	6.4	1.5	0.0	0.0	0.0	21	4.9	0.43	1.12	0.37	0.65 Note 47
2	Vol/NH3	Green	YES	0.0	10.0	NON	100.00	WWH	1.000	NO	23.6	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	23.6	Dairy	2				4.1	Liquid	0.0	0.59	0.0010	0.18	0.0050 Note 49
Year	N	21	1	4.6	4.5	0	100	11	0	0	3.4	21	1.3	0.3	0.0	0.0	0.0	21	1.0	0.05	0.11	0.04	0.07 Note 47
3	Vol/NH3	Cattle	YES	0.1	1.1	NON	100.00	WWH	1.000	NO	2.1	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	2.1	Dairy	2				0.5	Liquid	0.0	0.05	0.0010	0.02	0.0050 Note 49
Year	N	21	1	0.9	0.9	0	100	1	0	0	0.7	21	0.2	0.1	0.0	0.0	0.0	21	0.2	0.01	0.02	0.01	0.01 Note 47
4	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
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	59	0	0	0.0	72	0.0	0.0	0.0	0.0	0.0	72	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	MCB	1.000	NO	0.0	N crop	0.83				0.0	Green	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	low N	72				0.0	Low	0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	72	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	Green	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	Low	0.533	1.000		ORG	1.00	1.000	0.787	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	0.71	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.23	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.12	2.35	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	4.12	2.35	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	5.01	3.23	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 MAIZE COBS FOR BIOETHANOL AND FOOD Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR FOOD 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											40.0	40.0	1.39	2.86	1.15	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		0.0715	0.0401					TOTAL N AMOUNTS IN KG AND % LEACHED							57.8	57.8	1.45		0.43		Note 45
			TOTAL		0.0715	0.0401					TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.0715		0.0401		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	8	0.0	0.0	0.0	40.0	0.0	0	0.0	1.39	2.86	1.15	1.60	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Food/	0.83				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				13.5		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	59	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/	0.83				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	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	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	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	0.00	Total anthropogenic	2.86	1.60	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.71	Total including natural	3.57	2.32	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 MAIZE COBS FOR BIOETHANOL AND 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	1.15	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		0.0715		0.0401				TOTAL N AMOUNTS IN KG AND % LEACHED			57.8	57.8				1.45		0.43		Note 45
			TOTAL		0.0715		0.0401				TOTAL N AMOUNTS IN KG AND %			100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.0715		0.0401	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	9	0.0	0.0	0.0	0.0	40.0	0	0.0	1.39	2.86	1.15	1.60	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Fuel/	0.83				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				13.5		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	59	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/	0.83				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	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	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	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	Total including natural	3.57	2.32	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 MAIZE COBS FOR BIOETHANOL AND WASTE DUMPED ELSEWHERE WITHOUT LEACHING Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR WASTE, DUMPED ELSEWHERE 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	1.15	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		0.0715		0.0401				TOTAL N AMOUNTS IN KG AND % LEACHED			57.8	57.8				1.45		0.43		Note 45
			TOTAL		0.0715		0.0401				TOTAL N AMOUNTS IN KG AND %			100.0	100.0								Note 45

N2O-N/N in food/beverage/fuel/other No use No use Note 46

Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	1.39	2.86	1.15	1.60	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Waste	0.83				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	moved	0				13.5		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	-1	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	Waste	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	moved	0				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	-1	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	Waste	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	moved	0				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	-1	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	Waste	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	moved	0				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	-1	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	Waste	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	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	59	0	0	0.0	-1	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	Waste	0.83				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	moved	0				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	-1	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	Waste	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	moved	0				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	-1	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	Waste	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	moved	0				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	-1	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	Waste	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	moved	0				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	-1	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	Waste	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	moved	0				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	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	1.00	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	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	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	Total including natural	3.57	2.32	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 MAIZE COBS FOR BIOETHANOL AND WASTE DUMPED IN FIELD AND LOST TO LEACH Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR WASTE DUMPED IN FIELD 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									0.0	0.0	1.39	3.86	1.15	1.90	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		0.0965	0.0476		TOTAL N AMOUNTS IN KG AND % LEACHED							97.8	97.8	2.45		0.73		Note 45			
			TOTAL		0.0965	0.0476		TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45			
N2O-N/N in food/beverage/fuel/other																		No use		No use		Note 46		
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	0	0.0	0.0	0.0	0.0	0.0	0	40.0	1.39	3.86	1.15	1.90	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	57.8	Waste	0.83				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	in field	0				13.5		40.0	2.45	0.0000	0.73	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	0	0.0	0	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	Waste	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	in field	0				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	0	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	Waste	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	in field	0				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	0	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	Waste	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	in field	0				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	0	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	Waste	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	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	59	0	0	0.0	0	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	Waste	0.83				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	in field	0				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	0	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	Waste	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	in field	0				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	0	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	Waste	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	in field	0				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	0	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	Waste	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	in field	0				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	0	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	Waste	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	in field	0				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	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	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	3.86	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	3.86	1.90	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	Total including natural	4.57	2.62	Note 51

SUMMARY CATTLE DAIRY

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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				13.79	13.72	1.77	3.73	1.59	2.28	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				13.79	13.72	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0727	0.0439	TOTAL N AMOUNTS IN KG AND % LEACHED				72.94	72.56	1.82		0.55		Note 45
	TOTAL	0.0932	0.0569	TOTAL N AMOUNTS IN KG AND %				100.52	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.2704		0.1651	Note 46
									Total/year 1					
Area with crop, ha								0.90	1.26					Note 50
Natural background emissions, kg N2O-N/ha:								0.90			4.63		3.18	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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				13.52	13.45	2.06	4.02	1.58	2.27	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				14.33	14.25	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0789	0.0438	TOTAL N AMOUNTS IN KG AND % LEACHED				72.67	72.30	1.82		0.55		Note 45
	TOTAL	0.1004	0.0566	TOTAL N AMOUNTS IN KG AND %				100.52	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.2971		0.1675	Note 46
									Total/year 1					
Area with crop, ha								0.88	1.23					Note 50
Natural background emissions, kg N2O-N/ha:								0.88			4.90		3.14	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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				12.69	12.12	2.24	4.24	1.51	2.25	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				20.48	19.56	0.20		0.20		Note 45
1-10 N leach	FIRST YEAR	0.0852	0.0438	TOTAL N AMOUNTS IN KG AND % LEACHED				71.56	68.33	1.79		0.54		Note 45
	TOTAL	0.1059	0.0562	TOTAL N AMOUNTS IN KG AND %				104.73	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.3340		0.1773	Note 46
									Total/year 1					
Area with crop, ha								0.81	1.13					Note 50
Natural background emissions, kg N2O-N/ha:								0.81			5.04		3.05	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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				13.06	13.06	2.48	4.59	2.16	2.83	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				4.50	4.50	0.04		0.04		Note 45
1-10 N leach	FIRST YEAR	0.0856	0.0542	TOTAL N AMOUNTS IN KG AND % LEACHED				82.44	82.44	2.06		0.62		Note 45
	TOTAL	0.1147	0.0706	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.3514		0.2164	Note 46
									Total/year 1					
Area with crop, ha								0.81	1.14					Note 50
Natural background emissions, kg N2O-N/ha:								0.81			5.40		3.64	Note 51

SUMMARY CATTLE BEEF

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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			12.27	12.20	1.79	3.78	1.62	2.32 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.47	14.39	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0727	0.0441	TOTAL N AMOUNTS IN KG AND % LEACHED			73.82	73.41	1.85		0.55	Note 45
	TOTAL	0.0945	0.0579	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3081		0.1888 Note 46
							Total/year 1					
Area with crop, ha							0.91	1.28				Note 50
Natural background emissions, kg N2O-N/ha:							0.91			4.69		3.23 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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			12.02	11.95	2.10	4.08	1.60	2.30 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			15.02	14.93	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0792	0.0440	TOTAL N AMOUNTS IN KG AND % LEACHED			73.52	73.11	1.84		0.55	Note 45
	TOTAL	0.1021	0.0576	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3398		0.1916 Note 46
							Total/year 1					
Area with crop, ha							0.89	1.24				Note 50
Natural background emissions, kg N2O-N/ha:							0.81			4.97		3.19 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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			11.24	10.70	2.29	4.31	1.53	2.28 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			21.45	20.44	0.21		0.21	Note 45
1-10 N leach	FIRST YEAR	0.0859	0.0440	TOTAL N AMOUNTS IN KG AND % LEACHED			72.29	68.86	1.81		0.54	Note 45
	TOTAL	0.1078	0.0571	TOTAL N AMOUNTS IN KG AND %			104.98	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3836		0.2032 Note 46
							Total/year 1					
Area with crop, ha							0.81	1.13				Note 50
Natural background emissions, kg N2O-N/ha:							0.81			5.12		3.09 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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			11.58	11.58	2.54	4.68	2.22	2.89 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.63	4.63	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0863	0.0549	TOTAL N AMOUNTS IN KG AND % LEACHED			83.79	83.79	2.09		0.63	Note 45
	TOTAL	0.1171	0.0723	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4044		0.2497 Note 46
							Total/year 1					
Area with crop, ha							0.82	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.82			5.50		3.71 Note 51

SUMMARY PIG PORK

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.66	3.48	1.46	2.10 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	0.0728	0.0434	TOTAL N AMOUNTS IN KG AND % LEACHED			68.07	68.07	1.70		0.51	Note 45
	TOTAL	0.0871	0.0525	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1779		0.1072 Note 46
							Total/year 1					
Area with crop, ha						0.86	1.20					Note 50
Natural background emissions, kg N2O-N/ha:						0.86				4.34		2.96 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.80	3.61	1.40	2.06 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	0.0775	0.0435	TOTAL N AMOUNTS IN KG AND % LEACHED			66.16	65.83	1.65		0.50	Note 45
	TOTAL	0.0902	0.0514	TOTAL N AMOUNTS IN KG AND %			100.51	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1942		0.1107 Note 46
							Total/year 1					
Area with crop, ha						0.81	1.13					Note 50
Natural background emissions, kg N2O-N/ha:						0.81				4.41		2.86 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.91	3.71	1.35	2.04 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	0.0816	0.0437	TOTAL N AMOUNTS IN KG AND % LEACHED			64.07	62.56	1.60		0.48	Note 45
	TOTAL	0.0927	0.0509	TOTAL N AMOUNTS IN KG AND %			102.40	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2049		0.1125 Note 46
							Total/year 1					
Area with crop, ha						0.78	1.10					Note 50
Natural background emissions, kg N2O-N/ha:						0.78				4.49		2.82 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.30	4.25	1.99	2.61 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	0.0831	0.0517	TOTAL N AMOUNTS IN KG AND % LEACHED			76.18	76.18	1.90		0.57	Note 45
	TOTAL	0.1062	0.0652	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2156		0.1323 Note 46
							Total/year 1					
Area with crop, ha						0.83	1.17					Note 50
Natural background emissions, kg N2O-N/ha:						0.83				5.08		3.44 Note 51

SUMMARY POULTRY MEAT

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.62	3.40	1.42	2.02 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	0.0724	0.0428	TOTAL N AMOUNTS IN KG AND % LEACHED			67.34	67.34	1.68		0.51	Note 45
	TOTAL	0.0850	0.0505	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1479		0.0879 Note 46
							Total/year 1					
Area with crop, ha							0.82	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.82			4.22		2.84 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.70	3.45	1.35	1.96 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	0.0765	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED			64.46	64.46	1.61		0.48	Note 45
	TOTAL	0.0862	0.0491	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1554		0.0884 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.10				Note 50
Natural background emissions, kg N2O-N/ha:							0.79			4.24		2.75 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.75	3.49	1.30	1.93 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	0.0793	0.0435	TOTAL N AMOUNTS IN KG AND % LEACHED			63.66	63.56	1.59		0.48	Note 45
	TOTAL	0.0873	0.0482	TOTAL N AMOUNTS IN KG AND %			100.16	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1635		0.0903 Note 46
							Total/year 1					
Area with crop, ha							0.75	1.05				Note 50
Natural background emissions, kg N2O-N/ha:							0.75			4.24		2.68 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.11	3.99	1.81	2.40 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	0.0813	0.0499	TOTAL N AMOUNTS IN KG AND % LEACHED			73.92	73.92	1.85		0.55	Note 45
	TOTAL	0.0998	0.0601	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1784		0.1074 Note 46
Area with crop, ha	Total/year 1						0.78	1.09				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.77		3.18 Note 51

SUMMARY POULTRY EGGS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.77	3.76	1.60	2.30	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	0.0729	0.0442	TOTAL N AMOUNTS IN KG AND % LEACHED				73.69	73.69	1.84		0.55		Note 45
	TOTAL	0.0940	0.0574	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.3220		0.1967	Note 46
								Total/year 1						
Area with crop, ha								0.89	1.25					Note 50
Natural background emissions, kg N2O-N/ha:								0.89			4.65		3.19	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.90	3.82	1.47	2.19	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	0.0793	0.0448	TOTAL N AMOUNTS IN KG AND % LEACHED				68.65	68.65	1.72		0.51		Note 45
	TOTAL	0.0955	0.0547	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.3464		0.1986	Note 46
								Total/year 1						
Area with crop, ha								0.83	1.17					Note 50
Natural background emissions, kg N2O-N/ha:								0.83			4.65		3.02	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	1.96	3.86	1.39	2.12	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	0.0836	0.0454	TOTAL N AMOUNTS IN KG AND % LEACHED				67.12	66.95	1.68		0.50		Note 45
	TOTAL	0.0966	0.0530	TOTAL N AMOUNTS IN KG AND %				100.25	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.3732		0.2048	Note 46
								Total/year 1						
Area with crop, ha								0.78	1.09					Note 50
Natural background emissions, kg N2O-N/ha:								0.78			4.64		2.90	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.56	4.71	2.23	2.91	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	0.0866	0.0552	TOTAL N AMOUNTS IN KG AND % LEACHED				84.17	84.17	2.10		0.63		Note 45
	TOTAL	0.1178	0.0728	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.4219		0.2607	Note 46
								Total/year 1						
Area with crop, ha								0.82	1.15					Note 50
Natural background emissions, kg N2O-N/ha:								0.82			5.53		3.73	Note 51

SUMMARY SHEEP AND GOATS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.73	5.07	1.83	2.59 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	0.0873	0.0450	TOTAL N AMOUNTS IN KG AND % LEACHED				90.14	85.09	2.25		0.68	Note 45
	TOTAL	0.1267	0.0648	TOTAL N AMOUNTS IN KG AND %				105.93	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.7108		0.3633 Note 46
								Total/year 1					
Area with crop, ha								0.88	1.22				Note 50
Natural background emissions, kg N2O-N/ha:								0.88			5.94		3.47 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.74	5.00	1.59	2.30 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	0.0886	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED				88.24	88.24	2.21		0.66	Note 45
	TOTAL	0.1249	0.0575	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.7437		0.3425 Note 46
								Total/year 1					
Area with crop, ha								0.84	1.17				Note 50
Natural background emissions, kg N2O-N/ha:								0.84			5.83		3.14 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.48	4.66	1.63	2.45 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	0.0882	0.0453	TOTAL N AMOUNTS IN KG AND % LEACHED				77.84	73.60	1.95		0.58	Note 45
	TOTAL	0.1165	0.0613	TOTAL N AMOUNTS IN KG AND %				105.77	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.0475		0.5514 Note 46
								Total/year 1					
Area with crop, ha								0.85	1.18				Note 50
Natural background emissions, kg N2O-N/ha:								0.85			5.51		3.30 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL 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	2.83	5.13	2.05	2.78 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	0.0895	0.0491	TOTAL N AMOUNTS IN KG AND % LEACHED				90.19	90.19	2.25		0.68	Note 45
	TOTAL	0.1283	0.0694	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.1191		0.6056 Note 46
								Total/year 1					
Area with crop, ha								0.85	1.18				Note 50
Natural background emissions, kg N2O-N/ha:								0.85			5.98		3.62 Note 51

SUMMARY N CROP

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL AND			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				3.27	3.27	1.93	4.12	1.63	2.40 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				15.71	15.68	0.16		0.16	Note 45
1-10 N leach	FIRST YEAR	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED				81.18	81.05	2.03		0.61	Note 45
	TOTAL	0.1029	0.0600	TOTAL N AMOUNTS IN KG AND %				100.16	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.2585		0.7331 Note 46
									Total/year 1				
Area with crop, ha								1.01	1.41				Note 50
Natural background emissions, kg N2O-N/ha:								1.01			5.12		3.41 Note 51
N amount in reference crop year 2 after use of N crop as green manure, kg						11.20							Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg						40.00							Note 47
Relative value of green manure, %						28.00							

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL AND			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				1.87	1.87	1.88	4.12	1.57	2.35 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				14.20	14.19	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED				84.02	83.94	2.10		0.63	Note 45
	TOTAL	0.1031	0.0587	TOTAL N AMOUNTS IN KG AND %				100.09	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											2.2067		1.2556 Note 46
									Total/year 1				
Area with crop, ha								0.88	1.23				Note 50
Natural background emissions, kg N2O-N/ha:								0.88			5.01		3.23 Note 51
N amount in reference crop year 2 after use of N crop as green manure, kg						6.40							Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg						40.00							Note 47
Relative value of green manure, %						16.00							

SUMMARY FOOD, FUEL, AND WASTE

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL AND		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	1.15	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	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED			57.80	57.80	1.45		0.43		Note 45
	TOTAL	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0715		0.0401	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.57		2.32	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL AND		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	1.15	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	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED			57.80	57.80	1.45		0.43		Note 45
	TOTAL	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0715		0.0401	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.57		2.32	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL AND		WASTE DUMPED ELSEWHERE WITHOUT LEACHING						Note 43
AND CONTINUING WITH	NO MANURE			TO PRODUCE	NOTHING FOR		WASTE, DUMPED ELSEWHERE						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	1.15	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	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND % LEACHED			57.80	57.80	1.45		0.43		Note 45
	TOTAL	0.0715	0.0401	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										No use		No use	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.57		2.32	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	MAIZE COBS FOR BIOETHANOL AND		WASTE DUMPED IN FIELD AND LOST TO LEACH						Note 43
AND CONTINUING WITH	NO MANURE			TO PRODUCE	NOTHING FOR		WASTE DUMPED IN FIELD						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			0.00	0.00	1.39	3.86	1.15	1.90	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	0.0965	0.0476	TOTAL N AMOUNTS IN KG AND % LEACHED			97.80	97.80	2.45		0.73		Note 45
	TOTAL	0.0965	0.0476	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										No use		No use	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				4.57		2.62	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	0.0727	0.0863	0.0438	0.0549
TOTAL	0.0932	0.1171	0.0562	0.0723

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.73	4.68	2.25	2.89

	N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
	0.2704	0.4044	0.1651	0.2497

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	0.81	0.91	0.81	1.15	4.63	5.50	3.05	3.71

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	0.0728	0.0831	0.0434	0.0517
TOTAL	0.0871	0.1062	0.0509	0.0652

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.48	4.25	2.04	2.61

	N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
	0.1779	0.2156	0.1072	0.1323

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	0.78	0.86	0.78	0.86	4.34	5.08	2.82	3.44

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	0.0724	0.0866	0.0428	0.0552
TOTAL	0.0850	0.1178	0.0482	0.0728

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.4	4.71	1.93	2.91

	N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
	0.1479	0.4219	0.0879	0.2607

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	0.75	0.89	0.75	0.89	4.22	5.53	2.68	3.73

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	0.0873	0.0895	0.0401	0.0491
TOTAL	0.1165	0.1283	0.0575	0.0694

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.66	5.13	2.3	2.78

	N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
	0.7108	1.1191	0.3425	0.6056

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	0.84	0.88	0.84	0.88	5.51	5.98	3.14	3.62

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	0.0724	0.0895	0.0401	0.0552
TOTAL	0.0850	0.1283	0.0482	0.0728

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.40	5.13	1.93	2.91

	N2O-N/N in food/beverage/fuel/other MIN	MAX	MIN	MAX
	0.1479	1.1191	0.0879	0.6056

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	0.75	0.91	0.75	1.15	4.22	5.98	2.68	3.73