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

Note 33

Crop, fodder/food	WRS	WWH	WWB	WBA	RYE	TRI	SBA	SWH	OAT	MCC	MCW	GRO	GCR	CGR	GHP	GRP	CGR0	CONC	
Crop #	22	11	13	10	14	16	1	2	3	5	216	263	260	261	2520	252	2610	9999	Note 1
<NUE/e>	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	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	0.05	0.03	0.03	0.04	0.06	0.05	0.04	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	160	309	199	21	132	132	-87		Note 14

Crop, PPO/biodiesel/bioethanol	WRB	WWHB	WWBB	WBB	RYB	TRB	SBB	SWB	OAB	MCB	
Crop #	229	119	139	109	149	169	19	29	39	59	Note 1
<NUE/e>	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	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	0.05	0.03	0.03	0.04	0.06	0.05	0.04	0.02	0.04	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	0.01	0.03	0.03	0.03	0.05	0.05	0.03	0.04	0.03	0.07	0.04	0.04	0.13	1.28	0.15	0.15	-0.30		Note 34
<NUE/e> amounts from N fixation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	7.97	0.00	0.00	-2.70		Note 34

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

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

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

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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	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				6.3	6.3	1.47	3.70	1.25	1.97	Note 45			
Year N NH3							ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				7.4	7.4	0.07		0.07		Note 45			
1-10 N leach							FIRST YEAR	0.1649	0.0872	TOTAL N AMOUNTS IN KG AND % LEACHED				86.6	86.4	2.16		0.65		Note 45			
							TOTAL	0.1851	0.0987	TOTAL N AMOUNTS IN KG AND %				100.2	100.0					Note 45			
N2O-N/N in food/beverage/fuel/other																			0.5872		0.3131	Note 46	
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	20.0	5.8	0.0	0.0	0.0	21	14.2	1.32	3.30	1.13	1.74	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Cattle	0.83				0.0	Cattle	1.1	0.03	0.0125	0.03	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Dairy	2				6.8	Liquid	0.0	1.95	0.0010	0.58	0.0050	Note 49
Year	N	21	1	13.2	13.0	0	100	11	0	0	9.7	21	1.8	0.4	0.0	0.0	0.0	21	1.4	0.13	0.36	0.11	0.21	Note 47
2	Vol/NH3	Cattle	YES	0.3	3.2	NON	100.00	WWH	1.000	NO	7.9	Cattle	0.67				0.0	Cattle	0.1	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	0.0	7.9	Dairy	2				0.7	Liquid	0.0	0.20	0.0010	0.06	0.0050	Note 49
Year	N	21	1	1.3	1.3	0	100	11	0	0	1.0	21	0.2	0.0	0.0	0.0	0.0	21	0.1	0.01	0.04	0.01	0.02	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	0.8	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	0.813	0.0	0.8	Dairy	2				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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
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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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	0.813	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	0.813	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	0.813	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	0.813	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	0.813	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	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.12	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	3.70	1.97	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	3.70	1.97	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	0.80	Total including natural	4.50	2.77	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											6.3	6.2	1.60	3.83	1.25	1.97 Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											7.7	7.7	0.08		0.08	Note 45
1-10	N leach		FIRST YEAR		0.1711	0.0871	TOTAL N AMOUNTS IN KG AND % LEACHED											86.3	86.1	2.16		0.65	Note 45
			TOTAL		0.1917	0.0986	TOTAL N AMOUNTS IN KG AND %											100.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.6131		0.3154 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	20.0	5.8	0.0	0.0	0.0	22	14.2	1.45	3.42	1.13	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Cattle	0.83				0.0	Cattle	0.7	0.03	0.0125	0.03	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Dairy	2				6.8	Sep	0.0	1.95	0.0105	0.58	0.0050 Note 49
Year	N	22	1	13.7	12.5	0	100	11	0	0	9.4	21	1.6	0.4	0.0	0.0	0.0	22	1.2	0.14	0.38	0.11	0.21 Note 47
2	Vol/NH3	Cattle	YES	1.2	3.1	NON	100.00	WWH	1.000	NO	7.8	Cattle	0.67				0.0	Cattle	0.1	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.827	0.0	7.8	Dairy	2				0.6	Sep	0.0	0.19	0.0105	0.06	0.0050 Note 49
Year	N	22	1	1.2	1.1	0	100	11	0	0	0.8	21	0.1	0.0	0.0	0.0	0.0	22	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Cattle	YES	0.1	0.3	NON	100.00	WWH	1.000	NO	0.7	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	0.827	0.0	0.7	Dairy	2				0.1	Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year	N	22	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Sep	0.867	1.016		ORG	1.00	1.000	0.827	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	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
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	Sep	0.867	1.016		ORG	1.00	1.000	0.827	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	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.07	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	Current crops	3.83	1.97	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.83	1.97	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	0.79	Total including natural	4.62	2.76	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											6.1	5.9	1.70	3.94	1.23	1.97 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							10.8	10.6	0.11		0.11	Note 45
1-10 N leach			FIRST YEAR		0.1774		0.0872				TOTAL N AMOUNTS IN KG AND % LEACHED							85.3	83.5	2.13		0.64	Note 45
			TOTAL		0.1972		0.0987				TOTAL N AMOUNTS IN KG AND %							102.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.6492		0.3249 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	20.0	5.8	0.0	0.0	0.0	23	14.2	1.57	3.55	1.13	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Cattle	0.83				0.0	Cattle	0.9	0.03	0.0125	0.03	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Dairy	2				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050 Note 49
Year	N	23	1	15.4	10.8	0	100	11	0	0	8.1	21	1.0	0.2	0.0	0.0	0.0	23	0.7	0.12	0.37	0.09	0.22 Note 47
2	Vol/NH3	Cattle	YES	4.6	2.7	NON	100.00	WWH	1.000	NO	7.1	Cattle	0.67				0.0	Cattle	0.0	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.880	0.0	7.1	Dairy	2				0.6	Deep	0.0	0.18	0.0200	0.05	0.0050 Note 49
Year	N	23	1	0.8	0.6	0	100	11	0	0	0.4	21	0.1	0.0	0.0	0.0	0.0	23	0.0	0.01	0.02	0.00	0.01 Note 47
3	Vol/NH3	Cattle	YES	0.2	0.1	NON	100.00	WWH	1.000	NO	0.4	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	0.880	0.0	0.4	Dairy	2				0.0	Deep	0.0	0.01	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
4	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	0.880	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
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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.06	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.94	1.97	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	3.94	1.97	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	0.76	Total including natural	4.70	2.73	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 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											6.2	6.2	1.80	4.10	1.52	2.23	Note 45
Year	N NH3		ACCORDING TO	IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											3.3	3.3	0.03		0.03		Note 45
1-10	N leach		FIRST YEAR	0.1779	0.0976		TOTAL N AMOUNTS IN KG AND % LEACHED											90.6	90.6	2.26		0.68		Note 45
			TOTAL	0.2049	0.1116		TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.6657		0.3627	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	20.0	5.8	0.0	0.0	0.0	24	14.2	1.59	3.56	1.35	1.95	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Dairy	2				6.8	Graz	0.0	1.95	0.0200	0.58	0.0200	Note 49
Year	N	24	1	14.2	14.2	0	100	11	0	0	13.2	21	1.3	0.3	0.0	0.0	0.0	24	1.0	0.20	0.50	0.16	0.26	Note 47
2	Vol/NH3	Cattle	YES	0.0	1.0	NON	100.00	WWH	1.000	NO	11.9	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.903	0.0	11.9	Dairy	2				0.9	Graz	0.0	0.30	0.0200	0.09	0.0200	Note 49
Year	N	24	1	1.0	1.0	0	100	11	0	0	0.9	21	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.03	0.01	0.02	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	0.8	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	0.903	0.0	0.8	Dairy	2				0.1	Graz	0.0	0.02	0.0200	0.01	0.0200	Note 49
Year	N	24	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Graz	0.484	1.000		ORG	1.00	1.000	0.903	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	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
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	Graz	0.484	1.000		ORG	1.00	1.000	0.903	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	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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.06	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.10	2.23	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.10	2.23	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	0.76	Total including natural	4.86	2.99	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 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											5.6	5.6	1.47	3.73	1.26	1.99 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									7.6	7.6	0.08		0.08	Note 45
1-10 N leach			FIRST YEAR		0.1650		0.0874		TOTAL N AMOUNTS IN KG AND % LEACHED									87.0	86.8	2.18		0.65	Note 45
			TOTAL		0.1863		0.0995		TOTAL N AMOUNTS IN KG AND %									100.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.6673		0.3566 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	20.0	5.1	0.0	0.0	0.0	21	14.9	1.32	3.30	1.13	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Cattle	0.83				0.0	Cattle	1.2	0.03	0.0125	0.03	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Beef	2				6.8	Liquid	0.0	1.95	0.0010	0.58	0.0050 Note 49
Year	N	21	1	13.9	13.6	0	100	11	0	0	10.2	22	1.9	0.4	0.0	0.0	0.0	21	1.5	0.14	0.38	0.12	0.22 Note 47
2	Vol/NH3	Cattle	YES	0.3	3.4	NON	100.00	WWH	1.000	NO	8.3	Cattle	0.67				0.0	Cattle	0.1	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	0.0	8.3	Beef	2				0.7	Liquid	0.0	0.21	0.0010	0.06	0.0050 Note 49
Year	N	21	1	1.4	1.4	0	100	11	0	0	1.0	22	0.2	0.0	0.0	0.0	0.0	21	0.2	0.01	0.04	0.01	0.02 Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	0.8	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	0.813	0.0	0.8	Beef	2				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050 Note 49
Year	N	21	1	0.1	0.1	0	100	1	0	0	0.1	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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
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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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	0.813	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	0.813	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	0.813	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	0.813	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	0.813	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	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.12	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	1.99	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.73	1.99	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	0.80	Total including natural	4.53	2.79	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											5.5	5.5	1.61	3.86	1.26	1.99	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									8.0	7.9	0.08		0.08		Note 45
1-10 N leach			FIRST YEAR		0.1715	0.0873		TOTAL N AMOUNTS IN KG AND % LEACHED									86.7	86.5	2.17		0.65		Note 45
			TOTAL		0.1931	0.0994		TOTAL N AMOUNTS IN KG AND %									100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.6982		0.3593	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	20.0	5.1	0.0	0.0	0.0	22	14.9	1.46	3.43	1.13	1.75	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Cattle	0.83				0.0	Cattle	0.7	0.03	0.0125	0.03	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Beef	2				6.8	Sep	0.0	1.95	0.0105	0.58	0.0050	Note 49
Year	N	22	1	14.3	13.1	0	100	11	0	0	9.8	22	1.7	0.4	0.0	0.0	0.0	22	1.4	0.14	0.39	0.11	0.22	Note 47
2	Vol/NH3	Cattle	YES	1.2	3.3	NON	100.00	WWH	1.000	NO	8.1	Cattle	0.67				0.0	Cattle	0.1	0.05	0.0125	0.05	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.827	0.0	8.1	Beef	2				0.7	Sep	0.0	0.20	0.0105	0.06	0.0050	Note 49
Year	N	22	1	1.3	1.2	0	100	11	0	0	0.9	22	0.2	0.0	0.0	0.0	0.0	22	0.1	0.01	0.04	0.01	0.02	Note 47
3	Vol/NH3	Cattle	YES	0.1	0.3	NON	100.00	WWH	1.000	NO	0.7	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	0.827	0.0	0.7	Beef	2				0.1	Sep	0.0	0.02	0.0105	0.01	0.0050	Note 49
Year	N	22	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Sep	0.867	1.016		ORG	1.00	1.000	0.827	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	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
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	Sep	0.867	1.016		ORG	1.00	1.000	0.827	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	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.11	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.86	1.99	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.86	1.99	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	4.66	2.78	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 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											5.4	5.2	1.72	3.98	1.23	1.99 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							11.3	11.0	0.11		0.11	Note 45
1-10 N leach			FIRST YEAR		0.1781		0.0873				TOTAL N AMOUNTS IN KG AND % LEACHED							85.7	83.7	2.14		0.64	Note 45
			TOTAL		0.1989		0.0995				TOTAL N AMOUNTS IN KG AND %							102.3	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.7411		0.3706	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	20.0	5.1	0.0	0.0	0.0	23	14.9	1.59	3.56	1.13	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Cattle	0.83				0.0	Cattle	0.9	0.03	0.0125	0.03	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Beef	2				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050 Note 49
Year	N	23	1	16.2	11.3	0	100	11	0	0	8.5	22	1.0	0.2	0.0	0.0	0.0	23	0.8	0.13	0.39	0.10	0.23 Note 47
2	Vol/NH3	Cattle	YES	4.9	2.8	NON	100.00	WWH	1.000	NO	7.5	Cattle	0.67				0.0	Cattle	0.0	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.880	0.0	7.5	Beef	2				0.6	Deep	0.0	0.19	0.0200	0.06	0.0050 Note 49
Year	N	23	1	0.9	0.6	0	100	11	0	0	0.5	22	0.1	0.0	0.0	0.0	0.0	23	0.0	0.01	0.02	0.01	0.01 Note 47
3	Vol/NH3	Cattle	YES	0.3	0.2	NON	100.00	WWH	1.000	NO	0.4	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	0.880	0.0	0.4	Beef	2				0.0	Deep	0.0	0.01	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
4	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	0.880	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
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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.06	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.98	1.99	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.98	1.99	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	0.76	Total including natural	4.74	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 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											5.4	5.4	1.83	4.14	1.54	2.26	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									3.3	3.3	0.03		0.03		Note 45
1-10 N leach			FIRST YEAR		0.1786	0.0983		TOTAL N AMOUNTS IN KG AND % LEACHED									91.2	91.2	2.28		0.68		Note 45
			TOTAL		0.2070	0.1131		TOTAL N AMOUNTS IN KG AND %									100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.7606		0.4155	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	20.0	5.1	0.0	0.0	0.0	24	14.9	1.60	3.57	1.36	1.97	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Beef	2				6.8	Graz	0.0	1.95	0.0200	0.58	0.0200	Note 49
Year	N	24	1	14.9	14.9	0	100	11	0	0	13.8	22	1.3	0.3	0.0	0.0	0.0	24	1.1	0.21	0.53	0.17	0.28	Note 47
2	Vol/NH3	Cattle	YES	0.0	1.0	NON	100.00	WWH	1.000	NO	12.5	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.903	0.0	12.5	Beef	2				0.9	Graz	0.0	0.31	0.0200	0.09	0.0200	Note 49
Year	N	24	1	1.1	1.1	0	100	11	0	0	1.0	22	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.04	0.01	0.02	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	0.9	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	0.903	0.0	0.9	Beef	2				0.1	Graz	0.0	0.02	0.0200	0.01	0.0200	Note 49
Year	N	24	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Graz	0.484	1.000		ORG	1.00	1.000	0.903	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	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
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	Graz	0.484	1.000		ORG	1.00	1.000	0.903	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	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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.07	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.14	2.26	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.14	2.26	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	0.76	Total including natural	4.90	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 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												9.0	9.0	1.42	3.59	1.20	1.90	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							6.9	6.9	0.07		0.07		Note 45
1-10 N leach			FIRST YEAR		0.1650		0.0867				TOTAL N AMOUNTS IN KG AND % LEACHED							84.1	84.1	2.10		0.63		Note 45
			TOTAL		0.1797		0.0951				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.3985		0.2108	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	20.0	8.4	0.0	0.0	0.0	31	11.6	1.32	3.30	1.11	1.73	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Pig	0.83				0.0	Pig	1.6	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Pork	3				6.8	Liquid	0.0	1.95	0.0010	0.58	0.0050	Note 49
Year	N	31	1	10.0	9.7	0	100	11	0	0	7.3	32	1.5	0.6	0.0	0.0	0.0	31	0.9	0.10	0.27	0.08	0.15	Note 47
2	Vol/NH3	Pig	YES	0.3	2.4	NON	100.00	WWH	1.000	NO	5.8	Pig	0.67				0.0	Pig	0.1	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.800	0.0	5.8	Pork	3				0.5	Liquid	0.0	0.15	0.0010	0.04	0.0050	Note 49
Year	N	31	1	0.7	0.7	0	100	11	0	0	0.5	32	0.1	0.0	0.0	0.0	0.0	31	0.1	0.01	0.02	0.01	0.01	Note 47
3	Vol/NH3	Pig	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	0.4	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	0.800	0.0	0.4	Pork	3				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	31	1	0.1	0.1	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
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	Liquid	1.000	1.000		ORG	1.00	1.000	0.800	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
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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.06	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	0.00	Current crops	3.59	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	0.00	Total anthropogenic	3.59	1.90	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	0.00	0.78	Total including natural	4.37	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 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											8.8	8.8	1.49	3.65	1.18	1.89	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							8.6	8.6	0.09		0.09		Note 45
1-10 N leach			FIRST YEAR		0.1698		0.0868				TOTAL N AMOUNTS IN KG AND % LEACHED							82.8	82.6	2.07		0.62		Note 45
			TOTAL		0.1825		0.0943				TOTAL N AMOUNTS IN KG AND %							100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.4148		0.2143	Note 46
Year	N		1	1	100.0	100.0	0	100	59	0	0	97.8	32	20.0	8.4	0.0	0.0	0.0	32	11.6	1.41	3.40	1.11	1.74	Note 47
1	Vol/NH3	N	YES		0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Pig	0.83				0.0	Pig	2.1	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000			ORG	1.00	1.000	0.796	0.0	77.8	Pork	3				6.8	Sep	0.0	1.95	0.0105	0.58	0.0050	Note 49
Year	N		32	1	9.8	7.7	0	100	11	0	0	5.8	32	1.0	0.4	0.0	0.0	0.0	32	0.6	0.08	0.24	0.06	0.14	Note 47
2	Vol/NH3	Pig	YES		2.1	1.9	NON	100.00	WWH	1.000	NO	4.8	Pig	0.67				0.0	Pig	0.1	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Sep	0.867	1.024			ORG	1.00	1.000	0.827	0.0	4.8	Pork	3				0.4	Sep	0.0	0.12	0.0105	0.04	0.0050	Note 49
Year	N		32	1	0.5	0.4	0	100	11	0	0	0.3	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.01	0.00	0.01	Note 47
3	Vol/NH3	Pig	YES		0.1	0.1	NON	100.00	WWH	1.000	NO	0.2	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	0.827	0.0	0.2	Pork	3				0.0	Sep	0.0	0.01	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
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	Sep	0.867	1.024			ORG	1.00	1.000	0.827	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
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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.06	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.65	1.89	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	3.65	1.89	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	0.76	Total including natural	4.41	2.64	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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	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										8.7	8.6	1.55	3.70	1.16	1.88 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006			TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3								10.9	10.7	0.11		0.11	Note 45
1-10 N leach			FIRST YEAR		0.1739		0.0870			TOTAL N AMOUNTS IN KG AND % LEACHED								81.6	80.7	2.04		0.61	Note 45
			TOTAL		0.1849		0.0939			TOTAL N AMOUNTS IN KG AND %								101.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.4255		0.2161 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	20.0	8.4	0.0	0.0	0.0	33	11.6	1.48	3.48	1.11	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Pig	0.83				0.0	Pig	2.9	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Pork	3				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050 Note 49
Year	N	33	1	9.8	5.9	0	100	11	0	0	4.4	32	0.8	0.3	0.0	0.0	0.0	33	0.4	0.07	0.21	0.05	0.13 Note 47
2	Vol/NH3	Pig	YES	3.9	1.5	NON	100.00	WWH	1.000	NO	3.7	Pig	0.67				0.0	Pig	0.1	0.06	0.0125	0.06	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.827	0.0	3.7	Pork	3				0.3	Deep	0.0	0.09	0.0200	0.03	0.0050 Note 49
Year	N	33	1	0.4	0.2	0	100	11	0	0	0.2	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.01	0.00	0.01 Note 47
3	Vol/NH3	Pig	YES	0.2	0.1	NON	100.00	WWH	1.000	NO	0.1	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	0.827	0.0	0.1	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
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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.03	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	3.70	1.88	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.70	1.88	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Total including natural	4.45	2.63	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											9.0	9.0	1.72	3.94	1.44	2.13	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									3.1	3.1	0.03		0.03		Note 45
1-10 N leach			FIRST YEAR		0.1753	0.0950		TOTAL N AMOUNTS IN KG AND % LEACHED									87.9	87.9	2.20		0.66		Note 45
			TOTAL		0.1971	0.1066		TOTAL N AMOUNTS IN KG AND %									100.0	100.0					Note 45

N2O-N/N in food/beverage/fuel/other 0.4360 0.2357 Note 46

Year																								
Year	N		1	1	100.0	100.0	0	100	59	0	0	97.8	32	20.0	8.4	0.0	0.0	0.0	34	11.6	1.54	3.51	1.30	1.90 Note 47
1	Vol/NH3	N		YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Pork	3				6.8	Root	0.0	1.95	0.0200	0.58	0.0200 Note 49
Year	N		34	1	11.6	11.6	0	100	11	0	0	10.8	32	1.5	0.6	0.0	0.0	0.0	34	0.9	0.16	0.40	0.14	0.21 Note 47
2	Vol/NH3	Pig		YES	0.0	0.8	NON	100.00	WWH	1.000	NO	9.3	Pig	0.67				0.0	Pig	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Root		0.699	1.000		ORG	1.00	1.000	0.860	0.0	9.3	Pork	3				0.7	Root	0.0	0.23	0.0200	0.07	0.0200 Note 49
Year	N		34	1	0.9	0.9	0	100	11	0	0	0.8	32	0.1	0.0	0.0	0.0	0.0	34	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Pig		YES	0.0	0.1	NON	100.00	WWH	1.000	NO	0.7	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	0.860	0.0	0.7	Pork	3				0.1	Root	0.0	0.02	0.0200	0.01	0.0200 Note 49
Year	N		34	1	0.1	0.1	0	100	1	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
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	Root		0.699	1.000		ORG	1.00	1.000	0.860	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	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
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	Root		0.699	1.000		ORG	1.00	1.000	0.860	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	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	0.860	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	0.860	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	0.860	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	0.860	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	0.860	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	1.08	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	3.94	2.13	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.94	2.13	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	Total including natural	4.71	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 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										10.8	10.8	1.41	3.55	1.18	1.87 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										5.7	5.7	0.06		0.06	Note 45
1-10 N leach			FIRST YEAR		0.1646		0.0861	TOTAL N AMOUNTS IN KG AND % LEACHED										83.5	83.5	2.09		0.63	Note 45
			TOTAL		0.1776		0.0934	TOTAL N AMOUNTS IN KG AND %										100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3287		0.1728 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	20.0	10.2	0.0	0.0	0.0	41	9.8	1.32	3.29	1.11	1.72 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Poultry	0.83				0.0	Poultry	1.0	0.03	0.0125	0.03	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Meat	4				6.8	Liquid	0.0	1.95	0.0010	0.58	0.0050 Note 49
Year	N	41	1	8.8	8.6	0	100	11	0	0	6.5	42	1.1	0.6	0.0	0.0	0.0	41	0.6	0.09	0.24	0.07	0.14 Note 47
2	Vol/NH3	Poultry	YES	0.2	2.2	NON	100.00	WWH	1.000	NO	5.4	Poultry	0.67				0.0	Poultry	0.1	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.827	0.0	5.4	Meat	4				0.4	Liquid	0.0	0.13	0.0010	0.04	0.0050 Note 49
Year	N	41	1	0.5	0.5	0	100	11	0	0	0.4	42	0.1	0.0	0.0	0.0	0.0	41	0.0	0.00	0.01	0.00	0.01 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	0.3	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	0.827	0.0	0.3	Meat	4				0.0	Liquid	0.0	0.01	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
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	Liquid	0.867	1.000		ORG	1.00	1.000	0.827	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
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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.07	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.55	1.87	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.55	1.87	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	Total including natural	4.32	2.63	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											10.6	10.6	1.45	3.57	1.15	1.84	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							7.5	7.5	0.08		0.08		Note 45
1-10 N leach			FIRST YEAR		0.1688		0.0865				TOTAL N AMOUNTS IN KG AND % LEACHED							81.8	81.8	2.05		0.61		Note 45
			TOTAL		0.1787		0.0921				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.3362		0.1733		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	20.0	10.2	0.0	0.0	0.0	42	9.8	1.38	3.38	1.10	1.73	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Poultry	0.83				0.0	Poultry	2.5	0.05	0.0125	0.05	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Meat	4				6.8	Sep	0.0	1.95	0.0105	0.58	0.0050	Note 49
Year	N	42	1	7.4	6.2	0	100	11	0	0	4.7	42	0.8	0.4	0.0	0.0	0.0	42	0.4	0.07	0.19	0.05	0.11	Note 47
2	Vol/NH3	Poultry	YES	1.1	1.6	NON	100.00	WWH	1.000	NO	3.9	Poultry	0.67				0.0	Poultry	0.1	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.827	0.0	3.9	Meat	4				0.3	Sep	0.0	0.10	0.0105	0.03	0.0050	Note 49
Year	N	42	1	0.3	0.3	0	100	11	0	0	0.2	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.01	0.00	0.00	Note 47
3	Vol/NH3	Poultry	YES	0.0	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	Sep	0.867	1.000		ORG	1.00	1.000	0.827	0.0	0.2	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
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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.03	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		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.57	1.84	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.57	1.84	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Total including natural	4.32	2.59	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											10.4	10.4	1.48	3.59	1.13	1.83 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							8.5	8.5	0.09		0.09	Note 45
1-10 N leach			FIRST YEAR		0.1715		0.0868				TOTAL N AMOUNTS IN KG AND % LEACHED							81.1	81.1	2.03		0.61	Note 45
			TOTAL		0.1795		0.0914				TOTAL N AMOUNTS IN KG AND %							100.1	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3443		0.1752 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	20.0	10.2	0.0	0.0	0.0	43	9.8	1.42	3.43	1.09	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Poultry	0.83				0.0	Poultry	3.9	0.06	0.0125	0.06	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Meat	4				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050 Note 49
Year	N	43	1	6.0	4.9	0	100	11	0	0	3.7	42	0.4	0.2	0.0	0.0	0.0	43	0.2	0.05	0.16	0.04	0.09 Note 47
2	Vol/NH3	Poultry	YES	1.0	1.2	NON	100.00	WWH	1.000	NO	3.2	Poultry	0.67				0.0	Poultry	0.1	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.880	0.0	3.2	Meat	4				0.3	Deep	0.0	0.08	0.0200	0.02	0.0050 Note 49
Year	N	43	1	0.1	0.1	0	100	11	0	0	0.1	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	0.1	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	0.880	0.0	0.1	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
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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	1.03	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	3.59	1.83	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	3.59	1.83	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	Total including natural	4.32	2.56	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							10.7	10.7	1.64	3.83	1.37	2.05	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							2.9	2.9	0.03		0.03		Note 45
1-10 N leach			FIRST YEAR		0.1735	0.0932	TOTAL N AMOUNTS IN KG AND % LEACHED							86.4	86.4	2.16		0.65		Note 45
			TOTAL		0.1914	0.1024	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.3588		0.1920	Note 46
Year N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	20.0	10.2	0.0	0.0	0.0	44	9.8	1.50	3.47	1.26	1.86	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Meat	4				6.8	Scrap	0.0	1.95	0.0200	0.58	0.0200	Note 49
Year N	44	1	9.8	9.8	0	100	11	0	0	9.1	42	0.9	0.4	0.0	0.0	0.0	44	0.4	0.13	0.34	0.11	0.18	Note 47
2 Vol/NH3	Poultry	YES	0.0	0.7	NON	100.00	WWH	1.000	NO	8.2	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	0.903	0.0	8.2	Meat	4				0.6	Scrap	0.0	0.21	0.0200	0.06	0.0200	Note 49
Year N	44	1	0.4	0.4	0	100	11	0	0	0.4	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.01	0.02	0.00	0.01	Note 47
3 Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	0.4	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	0.903	0.0	0.4	Meat	4				0.0	Scrap	0.0	0.01	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
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	Scrap	0.484	1.000		ORG	1.00	1.000	0.903	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
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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.04	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	3.83	2.05	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.83	2.05	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Total including natural	4.57	2.79	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											5.3	5.3	1.47	3.72	1.26	1.99 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							7.8	7.8	0.08		0.08	Note 45
1-10 N leach			FIRST YEAR		0.1651		0.0876				TOTAL N AMOUNTS IN KG AND % LEACHED							86.9	86.9	2.17		0.65	Note 45
			TOTAL		0.1860		0.0993				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.7045		0.3763	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	20.0	4.8	0.0	0.0	0.0	41	15.2	1.32	3.30	1.13	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Poultry	0.83				0.0	Poultry	1.5	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Eggs	4				6.8	Liquid	0.0	1.95	0.0010	0.58	0.0050 Note 49
Year	N	41	1	13.7	13.4	0	100	11	0	0	10.0	43	1.7	0.4	0.0	0.0	0.0	41	1.3	0.14	0.38	0.11	0.21 Note 47
2	Vol/NH3	Poultry	YES	0.3	3.3	NON	100.00	WWH	1.000	NO	8.3	Poultry	0.67				0.0	Poultry	0.1	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.827	0.0	8.3	Eggs	4				0.7	Liquid	0.0	0.21	0.0010	0.06	0.0050 Note 49
Year	N	41	1	1.2	1.2	0	100	11	0	0	0.9	43	0.2	0.0	0.0	0.0	0.0	41	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	0.7	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	0.827	0.0	0.7	Eggs	4				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050 Note 49
Year	N	41	1	0.1	0.1	0	100	1	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
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	Liquid	0.867	1.000		ORG	1.00	1.000	0.827	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	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
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	0.827	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	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.11	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.72	1.99	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.72	1.99	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	4.51	2.78	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										5.1	5.1	1.54	3.75	1.21	1.95	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						10.7	10.7	0.11		0.11		Note 45
1-10 N leach			FIRST YEAR		0.1716		0.0881				TOTAL N AMOUNTS IN KG AND % LEACHED						84.2	84.2	2.11		0.63		Note 45
			TOTAL		0.1875		0.0973				TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.7290		0.3782	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	20.0	4.8	0.0	0.0	0.0	42	15.2	1.43	3.43	1.12	1.76 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Poultry	0.83				0.0	Poultry	3.8	0.06	0.0125	0.06	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Eggs	4				6.8	Sep	0.0	1.95	0.0105	0.58	0.0050 Note 49
Year	N	42	1	11.4	9.7	0	100	11	0	0	7.3	43	1.3	0.3	0.0	0.0	0.0	42	1.0	0.10	0.30	0.08	0.17 Note 47
2	Vol/NH3	Poultry	YES	1.7	2.4	NON	100.00	WWH	1.000	NO	6.0	Poultry	0.67				0.0	Poultry	0.2	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.827	0.0	6.0	Eggs	4				0.5	Sep	0.0	0.15	0.0105	0.04	0.0050 Note 49
Year	N	42	1	0.7	0.6	0	100	11	0	0	0.5	43	0.1	0.0	0.0	0.0	0.0	42	0.1	0.01	0.02	0.01	0.01 Note 47
3	Vol/NH3	Poultry	YES	0.1	0.2	NON	100.00	WWH	1.000	NO	0.4	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	0.827	0.0	0.4	Eggs	4				0.0	Sep	0.0	0.01	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
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	0.827	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
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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.827	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	1.08	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	3.75	1.95	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	3.75	1.95	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	Total including natural	4.52	2.72	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											5.0	5.0	1.57	3.77	1.17	1.92 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							12.1	12.1	0.12		0.12	Note 45
1-10 N leach			FIRST YEAR		0.1758		0.0887				TOTAL N AMOUNTS IN KG AND % LEACHED							83.0	82.9	2.08		0.62	Note 45
			TOTAL		0.1885		0.0959				TOTAL N AMOUNTS IN KG AND %							100.1	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.7556		0.3842 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	20.0	4.8	0.0	0.0	0.0	43	15.2	1.49	3.52	1.11	1.77 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Poultry	0.83				0.0	Poultry	6.1	0.08	0.0125	0.08	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Eggs	4				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050 Note 49
Year	N	43	1	9.2	7.6	0	100	11	0	0	5.7	43	0.7	0.2	0.0	0.0	0.0	43	0.5	0.08	0.25	0.06	0.14 Note 47
2	Vol/NH3	Poultry	YES	1.6	1.9	NON	100.00	WWH	1.000	NO	5.0	Poultry	0.67				0.0	Poultry	0.2	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.880	0.0	5.0	Eggs	4				0.4	Deep	0.0	0.13	0.0200	0.04	0.0050 Note 49
Year	N	43	1	0.3	0.3	0	100	11	0	0	0.2	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.01	0.00	0.00 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	0.880	0.0	0.2	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
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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	1.04	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	3.77	1.92	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	3.77	1.92	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	Total including natural	4.51	2.66	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											5.2	5.2	1.84	4.16	1.55	2.27 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							3.3	3.3	0.03		0.03	Note 45
1-10 N leach			FIRST YEAR		0.1789		0.0986				TOTAL N AMOUNTS IN KG AND % LEACHED							91.5	91.5	2.29		0.69	Note 45
			TOTAL		0.2078		0.1136				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.8033		0.4392	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	20.0	4.8	0.0	0.0	0.0	44	15.2	1.61	3.58	1.37	1.97 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Eggs	4				6.8	Scrap	0.0	1.95	0.0200	0.58	0.0200 Note 49
Year	N	44	1	15.2	15.2	0	100	11	0	0	14.1	43	1.4	0.3	0.0	0.0	0.0	44	1.0	0.21	0.54	0.17	0.28 Note 47
2	Vol/NH3	Poultry	YES	0.0	1.1	NON	100.00	WWH	1.000	NO	12.8	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	0.903	0.0	12.8	Eggs	4				1.0	Scrap	0.0	0.32	0.0200	0.10	0.0200 Note 49
Year	N	44	1	1.0	1.0	0	100	11	0	0	1.0	43	0.1	0.0	0.0	0.0	0.0	44	0.1	0.01	0.04	0.01	0.02 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	0.9	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	0.903	0.0	0.9	Eggs	4				0.1	Scrap	0.0	0.02	0.0200	0.01	0.0200 Note 49
Year	N	44	1	0.1	0.1	0	100	1	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
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	0.903	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	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
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	0.903	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	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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.07	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.16	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	4.16	2.27	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	Total including natural	4.92	3.04	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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							3.2	3.1	1.88	4.29	1.35	2.11	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							5.1	4.9	0.05		0.05		Note 45
1-10 N leach			FIRST YEAR		0.1796		0.0883				TOTAL N AMOUNTS IN KG AND % LEACHED							94.4	92.0	2.36		0.71		Note 45
			TOTAL		0.2147		0.1054				TOTAL N AMOUNTS IN KG AND %							102.6	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				1.3583		0.6665		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	51	20.0	2.8	0.0	0.0	0.0	53	17.2	1.60	3.59	1.14	1.77	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Sheep	0.83				0.0	Sheep	2.6	0.05	0.0125	0.05	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Milk/mutt	5				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050	Note 49
Year	N	53	1	16.9	16.9	0	100	11	0	0	16.9	51	2.0	0.3	0.0	0.0	0.0	53	1.7	0.26	0.63	0.19	0.31	Note 47
2	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	14.9	Sheep	0.67				0.0	Sheep	0.3	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.880	0.0	14.9	Milk/mutt	5				1.2	Deep	0.0	0.37	0.0200	0.11	0.0050	Note 49
Year	N	53	1	1.7	1.7	0	100	11	0	0	1.7	51	0.2	0.0	0.0	0.0	0.0	53	0.2	0.03	0.06	0.02	0.03	Note 47
3	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	1.5	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	0.880	0.0	1.5	Milk/mutt	5				0.1	Deep	0.0	0.04	0.0200	0.01	0.0050	Note 49
Year	N	53	1	0.2	0.2	0	100	1	0	0	0.2	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.01	0.00	0.00	Note 47
4	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.2	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	0.880	0.0	0.2	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	53	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
5	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	0.880	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	59	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
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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.06	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	Current crops	4.29	2.11	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	4.29	2.11	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	0.79	Total including natural	5.08	2.89	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										3.1	3.1	1.91	4.28	1.25	1.99 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										3.5	3.5	0.04		0.04	Note 45
1-10 N leach			FIRST YEAR		0.1809		0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED										93.4	93.4	2.34		0.70	Note 45
			TOTAL		0.2140		0.0993	TOTAL N AMOUNTS IN KG AND %										100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					1.3908		0.6453 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	51	20.0	2.8	0.0	0.0	0.0	54	17.2	1.65	3.62	1.06	1.67 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Milk/mutt	5				6.8	Graz	0.0	1.95	0.0200	0.58	0.0000 Note 49
Year	N	54	1	17.2	17.2	0	100	11	0	0	16.0	51	1.5	0.2	0.0	0.0	0.0	54	1.3	0.24	0.61	0.17	0.29 Note 47
2	Vol/NH3	Sheep	YES	0.0	1.2	NON	100.00	WWH	1.000	NO	14.4	Sheep	0.67				0.0	Sheep	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.903	0.0	14.4	Milk/mutt	5				1.1	Graz	0.0	0.36	0.0200	0.11	0.0000 Note 49
Year	N	54	1	1.3	1.3	0	100	11	0	0	1.2	51	0.1	0.0	0.0	0.0	0.0	54	0.1	0.02	0.05	0.01	0.02 Note 47
3	Vol/NH3	Sheep	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	1.1	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	0.903	0.0	1.1	Milk/mutt	5				0.1	Graz	0.0	0.03	0.0200	0.01	0.0000 Note 49
Year	N	54	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.1	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	0.903	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	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
5	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	0.903	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	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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	1.08	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	4.28	1.99	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.28	1.99	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	Total including natural	5.05	2.76	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										2.1	2.0	1.80	4.13	1.28	2.06 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										12.1	11.7	0.12		0.12	Note 45
1-10 N leach			FIRST YEAR		0.1804		0.0886	TOTAL N AMOUNTS IN KG AND % LEACHED										88.6	86.2	2.21		0.66	Note 45
			TOTAL		0.2067		0.1031	TOTAL N AMOUNTS IN KG AND %										102.7	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					2.0063		1.0008 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	61	20.0	1.9	0.0	0.0	0.0	63	18.1	1.61	3.61	1.14	1.77 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	Goat	0.83				0.0	Goat	2.7	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.796	0.0	77.8	Milk/meat	6				6.8	Deep	0.0	1.95	0.0200	0.58	0.0050 Note 49
Year	N	63	1	17.9	15.2	0	100	11	0	0	11.4	61	1.4	0.1	0.0	0.0	0.0	63	1.2	0.17	0.49	0.13	0.27 Note 47
2	Vol/NH3	Goat	YES	2.7	3.8	NON	100.00	WWH	1.000	NO	10.0	Goat	0.67				0.0	Goat	0.2	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.880	0.0	10.0	Milk/meat	6				0.8	Deep	0.0	0.25	0.0200	0.08	0.0050 Note 49
Year	N	63	1	1.2	1.0	0	100	11	0	0	0.8	61	0.1	0.0	0.0	0.0	0.0	63	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Goat	YES	0.2	0.3	NON	100.00	WWH	1.000	NO	0.7	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	0.880	0.0	0.7	Milk/meat	6				0.1	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	63	1	0.1	0.1	0	100	1	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
4	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	0.880	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
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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.880	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	0.06	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	4.13	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	4.13	2.06	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	4.91	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 GOAT MILK/MEAT Note 43
AND CONTINUING WITH MANURE FROM GRAZING GOATS TO PRODUCE WINTER WHEAT FOR GOAT MILK/MEAT Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											2.1	2.1	1.95	4.34	1.46	2.20	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											3.6	3.6	0.04		0.04		Note 45
1-10	N leach		FIRST YEAR		0.1818	0.0924	TOTAL N AMOUNTS IN KG AND % LEACHED											94.3	94.3	2.36		0.71		Note 45
			TOTAL		0.2170	0.1101	TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					2.0761		1.0532	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	61	20.0	1.9	0.0	0.0	0.0	64	18.1	1.67	3.64	1.24	1.85	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	Milk/meat	6				6.8	Graz	0.0	1.95	0.0200	0.58	0.0100	Note 49
Year	N	64	1	18.1	18.1	0	100	11	0	0	16.8	61	1.6	0.2	0.0	0.0	0.0	64	1.5	0.25	0.65	0.20	0.32	Note 47
2	Vol/NH3	Goat	YES	0.0	1.3	NON	100.00	WWH	1.000	NO	15.2	Goat	0.67				0.0	Goat	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.903	0.0	15.2	Milk/meat	6				1.1	Graz	0.0	0.38	0.0200	0.11	0.0100	Note 49
Year	N	64	1	1.5	1.5	0	100	11	0	0	1.4	61	0.1	0.0	0.0	0.0	0.0	64	0.1	0.02	0.05	0.02	0.03	Note 47
3	Vol/NH3	Goat	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	1.2	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	0.903	0.0	1.2	Milk/meat	6				0.1	Graz	0.0	0.03	0.0200	0.01	0.0100	Note 49
Year	N	64	1	0.1	0.1	0	100	1	0	0	0.1	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.1	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	0.903	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	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
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	Graz	0.484	1.000		ORG	1.00	1.000	0.903	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	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	0.903	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	0.903	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	0.903	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	0.903	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	0.903	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	1.08	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	4.34	2.20	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	4.34	2.20	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	Total including natural	5.11	2.98	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	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												0.7	0.7	1.53	3.89	1.25	2.02	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									8.0	8.0	0.08		0.08		Note 45
1-10 N leach			FIRST YEAR		0.1637	0.0834		TOTAL N AMOUNTS IN KG AND % LEACHED									91.3	91.3	2.28		0.68		Note 45
			TOTAL		0.1947	0.1009		TOTAL N AMOUNTS IN KG AND %									100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				5.3311		2.7635	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	71	0.0	0.0	20.0	0.0	0.0	71	20.0	1.31	3.27	1.06	1.67	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	high N	71				6.8	High	0.0	1.95	0.0000	0.58	0.0000	Note 49
Year	N	71	1	20.0	20.0	0	100	11	0	0	15.0	21	2.8	0.7	0.0	0.0	0.0	21	2.1	0.20	0.56	0.17	0.32	Note 47
2	Vol/NH3	Green	YES	0.0	5.0	NON	100.00	WWH	1.000	NO	12.2	Cattle	0.67				0.0	Cattle	0.2	0.05	0.0125	0.05	0.0100	Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.813	0.0	12.2	Dairy	2				1.0	Liquid	0.0	0.31	0.0010	0.09	0.0050	Note 49
Year	N	21	1	2.0	2.0	0	100	11	0	0	1.5	21	0.3	0.1	0.0	0.0	0.0	21	0.2	0.02	0.06	0.02	0.03	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.5	NON	100.00	WWH	1.000	NO	1.2	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	0.0	1.2	Dairy	2				0.1	Liquid	0.0	0.03	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.2	0.2	0	100	1	0	0	0.1	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.01	0.00	0.00	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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
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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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	0.813	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	0.813	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	0.813	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	0.813	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	0.813	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	0.12	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.18	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.89	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	3.89	2.02	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.12	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	4.74	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 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				0.4	0.4			1.52	3.90	1.24	2.01	Note 45
Year N NH3							ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				7.6	7.6			0.08		0.08		Note 45
1-10 N leach							FIRST YEAR	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED				92.0	91.9			2.30		0.69		Note 45
							TOTAL	0.1948	0.1004	TOTAL N AMOUNTS IN KG AND %				100.0	100.0							Note 45
N2O-N/N in food/beverage/fuel/other																			9.3349		4.8102	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	72	0.0	0.0	20.0	0.0	0.0	72	20.0	1.31	3.27	1.06	1.67	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	low N	72				6.8	Low	0.0	1.95	0.0000	0.58	0.0000	Note 49
Year	N	72	1	20.0	20.0	0	100	11	0	0	15.0	21	1.6	0.4	0.0	0.0	0.0	21	1.2	0.20	0.59	0.17	0.32	Note 47
2	Vol/NH3	Green	YES	0.0	5.0	NON	100.00	WWH	1.000	NO	13.4	Cattle	0.67				0.0	Cattle	0.1	0.05	0.0125	0.05	0.0100	Note 48
	N leach	Low	0.533	1.000		ORG	1.00	1.000	0.893	0.0	13.4	Dairy	2				1.0	Liquid	0.0	0.34	0.0010	0.10	0.0050	Note 49
Year	N	21	1	1.1	1.1	0	100	11	0	0	0.8	21	0.2	0.0	0.0	0.0	0.0	21	0.1	0.01	0.03	0.01	0.02	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	NO	0.7	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	0.813	0.0	0.7	Dairy	2				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	1	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
4	Vol/NH3	Cattle	YES	0.0	0.0	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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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
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	Liquid	0.933	1.016		ORG	1.00	1.000	0.813	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	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	0.813	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	0.893	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	0.813	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	0.813	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	0.813	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	0.07	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	Current crops	3.90	2.01	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.90	2.01	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	0.79	Total including natural	4.68	2.80	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							20.0	20.0				1.31	3.27	1.06	1.67	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		0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED							77.8	77.8				1.95		0.58		Note 45
			TOTAL		0.1637	0.0834	TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1637		0.0834	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	8	0.0	0.0	0.0	20.0	0.0	0	0.0	1.31	3.27	1.06	1.67	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	beverage	8				6.8		0.0	1.95	0.0000	0.58	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	3.27	1.67	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	3.27	1.67	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	0.00	0.71	Total including natural	3.99	2.38	Note 51

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

N CHAIN STARTING WITH 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	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							20.0	20.0				1.31	3.27	1.06	1.67	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	0.1637	0.0834		TOTAL N AMOUNTS IN KG AND % LEACHED							77.8	77.8				1.95		0.58		Note 45
			TOTAL	0.1637	0.0834		TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1637		0.0834	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	20.0	0	0.0	1.31	3.27	1.06	1.67	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	other	9				6.8		0.0	1.95	0.0000	0.58	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	3.27	1.67	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	3.27	1.67	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	3.99	2.38	Note 51

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

N CHAIN STARTING WITH 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							20.0	20.0				1.31	3.27	1.06	1.67	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		0.1637		0.0834		TOTAL N AMOUNTS IN KG AND % LEACHED					77.8	77.8				1.95		0.58		Note 45
			TOTAL		0.1637		0.0834		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	1.31	3.27	1.06	1.67	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	moved	0				6.8		0.0	1.95	0.0000	0.58	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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		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	3.27	1.67	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	3.27	1.67	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	3.99	2.38	Note 51

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

N CHAIN STARTING WITH 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	1.31	3.77	1.06	1.82	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		0.1887		0.0909				TOTAL N AMOUNTS IN KG AND % LEACHED							97.8	97.8	2.45		0.73		Note 45
			TOTAL		0.1887		0.0909				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	20.0	1.31	3.77	1.06	1.82	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	77.8	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	0.796	0.0	77.8	in field	0				6.8		20.0	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	0.800	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	3.77	1.82	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	3.77	1.82	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	4.49	2.53	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				6.31	6.29	1.47	3.70	1.25	1.97	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				7.37	7.35	0.07		0.07		Note 45
1-10 N leach	FIRST YEAR	0.1649	0.0872	TOTAL N AMOUNTS IN KG AND % LEACHED				86.56	86.36	2.16		0.65		Note 45
	TOTAL	0.1851	0.0987	TOTAL N AMOUNTS IN KG AND %				100.23	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.5872		0.3131	Note 46
								Total/year 1						
Area with crop, ha								0.80	1.12					Note 50
Natural background emissions, kg N2O-N/ha:								0.80			4.50		2.77	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				6.25	6.24	1.60	3.83	1.25	1.97	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				7.68	7.66	0.08		0.08		Note 45
1-10 N leach	FIRST YEAR	0.1711	0.0871	TOTAL N AMOUNTS IN KG AND % LEACHED				86.30	86.10	2.16		0.65		Note 45
	TOTAL	0.1917	0.0986	TOTAL N AMOUNTS IN KG AND %				100.24	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.6131		0.3154	Note 46
								Total/year 1						
Area with crop, ha								0.79	1.10					Note 50
Natural background emissions, kg N2O-N/ha:								0.79			4.62		2.76	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				6.07	5.94	1.70	3.94	1.23	1.97	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				10.83	10.60	0.11		0.11		Note 45
1-10 N leach	FIRST YEAR	0.1774	0.0872	TOTAL N AMOUNTS IN KG AND % LEACHED				85.33	83.46	2.13		0.64		Note 45
	TOTAL	0.1972	0.0987	TOTAL N AMOUNTS IN KG AND %				102.23	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.6492		0.3249	Note 46
								Total/year 1						
Area with crop, ha								0.76	1.06					Note 50
Natural background emissions, kg N2O-N/ha:								0.76			4.70		2.73	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				6.16	6.16	1.80	4.10	1.52	2.23	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				3.26	3.26	0.03		0.03		Note 45
1-10 N leach	FIRST YEAR	0.1779	0.0976	TOTAL N AMOUNTS IN KG AND % LEACHED				90.58	90.58	2.26		0.68		Note 45
	TOTAL	0.2049	0.1116	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.6657		0.3627	Note 46
								Total/year 1						
Area with crop, ha								0.76	1.06					Note 50
Natural background emissions, kg N2O-N/ha:								0.76			4.86		2.99	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			5.58	5.57	1.47	3.73	1.26	1.99 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			7.64	7.62	0.08		0.08	Note 45
1-10 N leach	FIRST YEAR	0.1650	0.0874	TOTAL N AMOUNTS IN KG AND % LEACHED			87.02	86.81	2.18		0.65	Note 45
	TOTAL	0.1863	0.0995	TOTAL N AMOUNTS IN KG AND %			100.24	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.6673		0.3566 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.12				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			4.53		2.79 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			5.53	5.52	1.61	3.86	1.26	1.99 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			7.97	7.95	0.08		0.08	Note 45
1-10 N leach	FIRST YEAR	0.1715	0.0873	TOTAL N AMOUNTS IN KG AND % LEACHED			86.75	86.53	2.17		0.65	Note 45
	TOTAL	0.1931	0.0994	TOTAL N AMOUNTS IN KG AND %			100.25	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.6982		0.3593 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.11				Note 50
Natural background emissions, kg N2O-N/ha:							0.76			4.66		2.78 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			5.37	5.24	1.72	3.98	1.23	1.99 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			11.27	11.01	0.11		0.11	Note 45
1-10 N leach	FIRST YEAR	0.1781	0.0873	TOTAL N AMOUNTS IN KG AND % LEACHED			85.71	83.74	2.14		0.64	Note 45
	TOTAL	0.1989	0.0995	TOTAL N AMOUNTS IN KG AND %			102.35	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.7411		0.3706 Note 46
							Total/year 1					
Area with crop, ha							0.76	1.06				Note 50
Natural background emissions, kg N2O-N/ha:							0.76			4.74		2.75 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			5.44	5.44	1.83	4.14	1.54	2.26 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			3.32	3.32	0.03		0.03	Note 45
1-10 N leach	FIRST YEAR	0.1786	0.0983	TOTAL N AMOUNTS IN KG AND % LEACHED			91.24	91.24	2.28		0.68	Note 45
	TOTAL	0.2070	0.1131	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.7606		0.4155 Note 46
							Total/year 1					
Area with crop, ha							0.76	1.07				Note 50
Natural background emissions, kg N2O-N/ha:							0.76			4.90		3.02 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			9.02	9.02	1.42	3.59	1.20	1.90 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			6.88	6.88	0.07		0.07	Note 45
1-10 N leach	FIRST YEAR	0.1650	0.0867	TOTAL N AMOUNTS IN KG AND % LEACHED			84.10	84.10	2.10		0.63	Note 45
	TOTAL	0.1797	0.0951	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.3985		0.2108 Note 46
							Total/year 1					
Area with crop, ha						0.78	1.09					Note 50
Natural background emissions, kg N2O-N/ha:						0.78				4.37		2.68 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			8.80	8.78	1.49	3.65	1.18	1.89 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			8.63	8.61	0.09		0.09	Note 45
1-10 N leach	FIRST YEAR	0.1698	0.0868	TOTAL N AMOUNTS IN KG AND % LEACHED			82.81	82.61	2.07		0.62	Note 45
	TOTAL	0.1825	0.0943	TOTAL N AMOUNTS IN KG AND %			100.24	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4148		0.2143 Note 46
							Total/year 1					
Area with crop, ha						0.76	1.06					Note 50
Natural background emissions, kg N2O-N/ha:						0.76				4.41		2.64 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			8.69	8.59	1.55	3.70	1.16	1.88 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			10.85	10.73	0.11		0.11	Note 45
1-10 N leach	FIRST YEAR	0.1739	0.0870	TOTAL N AMOUNTS IN KG AND % LEACHED			81.61	80.68	2.04		0.61	Note 45
	TOTAL	0.1849	0.0939	TOTAL N AMOUNTS IN KG AND %			101.15	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4255		0.2161 Note 46
							Total/year 1					
Area with crop, ha						0.75	1.05					Note 50
Natural background emissions, kg N2O-N/ha:						0.75				4.45		2.63 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			9.04	9.04	1.72	3.94	1.44	2.13 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			3.08	3.08	0.03		0.03	Note 45
1-10 N leach	FIRST YEAR	0.1753	0.0950	TOTAL N AMOUNTS IN KG AND % LEACHED			87.87	87.87	2.20		0.66	Note 45
	TOTAL	0.1971	0.1066	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4360		0.2357 Note 46
							Total/year 1					
Area with crop, ha						0.77	1.08					Note 50
Natural background emissions, kg N2O-N/ha:						0.77				4.71		2.90 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					10.81	10.81	1.41	3.55	1.18	1.87	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					5.71	5.71	0.06		0.06		Note 45
1-10 N leach	FIRST YEAR	0.1646	0.0861	TOTAL N AMOUNTS IN KG AND % LEACHED					83.48	83.48	2.09		0.63		Note 45
	TOTAL	0.1776	0.0934	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.3287		0.1728	Note 46
									Total/year 1						
Area with crop, ha									0.76	1.07					Note 50
Natural background emissions, kg N2O-N/ha:									0.76			4.32		2.63	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					10.63	10.63	1.45	3.57	1.15	1.84	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					7.53	7.53	0.08		0.08		Note 45
1-10 N leach	FIRST YEAR	0.1688	0.0865	TOTAL N AMOUNTS IN KG AND % LEACHED					81.84	81.84	2.05		0.61		Note 45
	TOTAL	0.1787	0.0921	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.3362		0.1733	Note 46
									Total/year 1						
Area with crop, ha									0.75	1.05					Note 50
Natural background emissions, kg N2O-N/ha:									0.75			4.32		2.59	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					10.43	10.42	1.48	3.59	1.13	1.83	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					8.53	8.52	0.09		0.09		Note 45
1-10 N leach	FIRST YEAR	0.1715	0.0868	TOTAL N AMOUNTS IN KG AND % LEACHED					81.12	81.05	2.03		0.61		Note 45
	TOTAL	0.1795	0.0914	TOTAL N AMOUNTS IN KG AND %					100.08	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.3443		0.1752	Note 46
									Total/year 1						
Area with crop, ha									0.73	1.03					Note 50
Natural background emissions, kg N2O-N/ha:									0.73			4.32		2.56	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					10.67	10.67	1.64	3.83	1.37	2.05	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					2.92	2.92	0.03		0.03		Note 45
1-10 N leach	FIRST YEAR	0.1735	0.0932	TOTAL N AMOUNTS IN KG AND % LEACHED					86.41	86.41	2.16		0.65		Note 45
	TOTAL	0.1914	0.1024	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.3588		0.1920	Note 46
Area with crop, ha	Total/year 1								0.75	1.04					Note 50
Natural background emissions, kg N2O-N/ha:									0.75			4.57		2.79	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					5.28	5.28	1.47	3.72	1.26	1.99	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					7.83	7.83	0.08		0.08		Note 45
1-10 N leach	FIRST YEAR	0.1651	0.0876	TOTAL N AMOUNTS IN KG AND % LEACHED					86.89	86.89	2.17		0.65		Note 45
	TOTAL	0.1860	0.0993	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.7045		0.3763	Note 46
										Total/year 1					
Area with crop, ha									0.79	1.11					Note 50
Natural background emissions, kg N2O-N/ha:									0.79			4.51		2.78	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					5.14	5.14	1.54	3.75	1.21	1.95	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					10.65	10.65	0.11		0.11		Note 45
1-10 N leach	FIRST YEAR	0.1716	0.0881	TOTAL N AMOUNTS IN KG AND % LEACHED					84.20	84.20	2.11		0.63		Note 45
	TOTAL	0.1875	0.0973	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.7290		0.3782	Note 46
										Total/year 1					
Area with crop, ha									0.77	1.08					Note 50
Natural background emissions, kg N2O-N/ha:									0.77			4.52		2.72	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					4.99	4.98	1.57	3.77	1.17	1.92	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					12.13	12.11	0.12		0.12		Note 45
1-10 N leach	FIRST YEAR	0.1758	0.0887	TOTAL N AMOUNTS IN KG AND % LEACHED					83.00	82.90	2.08		0.62		Note 45
	TOTAL	0.1885	0.0959	TOTAL N AMOUNTS IN KG AND %					100.12	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.7556		0.3842	Note 46
										Total/year 1					
Area with crop, ha									0.74	1.04					Note 50
Natural background emissions, kg N2O-N/ha:									0.74			4.51		2.66	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					5.17	5.17	1.84	4.16	1.55	2.27	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					3.34	3.34	0.03		0.03		Note 45
1-10 N leach	FIRST YEAR	0.1789	0.0986	TOTAL N AMOUNTS IN KG AND % LEACHED					91.49	91.49	2.29		0.69		Note 45
	TOTAL	0.2078	0.1136	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.8033		0.4392	Note 46
										Total/year 1					
Area with crop, ha									0.76	1.07					Note 50
Natural background emissions, kg N2O-N/ha:									0.76			4.92		3.04	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				3.16	3.08	1.88	4.29	1.35	2.11 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				5.07	4.94	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.1796	0.0883	TOTAL N AMOUNTS IN KG AND % LEACHED				94.40	91.98	2.36		0.71	Note 45
	TOTAL	0.2147	0.1054	TOTAL N AMOUNTS IN KG AND %				102.63	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.3583		0.6665 Note 46
									Total/year 1				
Area with crop, ha								0.79	1.10				Note 50
Natural background emissions, kg N2O-N/ha:								0.79			5.08		2.89 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				3.08	3.08	1.91	4.28	1.25	1.99 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				3.50	3.50	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.1809	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED				93.42	93.42	2.34		0.70	Note 45
	TOTAL	0.2140	0.0993	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.3908		0.6453 Note 46
									Total/year 1				
Area with crop, ha								0.77	1.08				Note 50
Natural background emissions, kg N2O-N/ha:								0.77			5.05		2.76 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				2.06	2.01	1.80	4.13	1.28	2.06 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				12.06	11.74	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.1804	0.0886	TOTAL N AMOUNTS IN KG AND % LEACHED				88.55	86.25	2.21		0.66	Note 45
	TOTAL	0.2067	0.1031	TOTAL N AMOUNTS IN KG AND %				102.67	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											2.0063		1.0008 Note 46
									Total/year 1				
Area with crop, ha								0.78	1.09				Note 50
Natural background emissions, kg N2O-N/ha:								0.78			4.91		2.84 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				2.09	2.09	1.95	4.34	1.46	2.20 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				3.58	3.58	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.1818	0.0924	TOTAL N AMOUNTS IN KG AND % LEACHED				94.33	94.33	2.36		0.71	Note 45
	TOTAL	0.2170	0.1101	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											2.0761		1.0532 Note 46
									Total/year 1				
Area with crop, ha								0.77	1.08				Note 50
Natural background emissions, kg N2O-N/ha:								0.77			5.11		2.98 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			0.73	0.73	1.53	3.89	1.25	2.02 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			7.98	7.98	0.08		0.08	Note 45
1-10 N leach	FIRST YEAR	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED			91.32	91.29	2.28		0.68	Note 45
	TOTAL	0.1947	0.1009	TOTAL N AMOUNTS IN KG AND %			100.03	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										5.3311		2.7635 Note 46
							Total/year 1					
Area with crop, ha							0.84	1.18				Note 50
Natural background emissions, kg N2O-N/ha:							0.84			4.74		2.86 Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	2.80	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	20.00	Note 47
Relative value of green manure, %	14.00	

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			0.42	0.42	1.52	3.90	1.24	2.01 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			7.65	7.64	0.08		0.08	Note 45
1-10 N leach	FIRST YEAR	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED			91.96	91.94	2.30		0.69	Note 45
	TOTAL	0.1948	0.1004	TOTAL N AMOUNTS IN KG AND %			100.02	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										9.3349		4.8102 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.10				Note 50
Natural background emissions, kg N2O-N/ha:							0.79			4.68		2.80 Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	1.60	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	20.00	Note 47
Relative value of green manure, %	8.00	

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			20.00	20.00	1.31	3.27	1.06	1.67	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	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED			77.80	77.80	1.95		0.58		Note 45
	TOTAL	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1637		0.0834	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.99		2.38	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			20.00	20.00	1.31	3.27	1.06	1.67	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	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED			77.80	77.80	1.95		0.58		Note 45
	TOTAL	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1637		0.0834	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.99		2.38	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			20.00	20.00	1.31	3.27	1.06	1.67	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	0.1637	0.0834	TOTAL N AMOUNTS IN KG AND % LEACHED			77.80	77.80	1.95		0.58		Note 45
	TOTAL	0.1637	0.0834	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				3.99		2.38	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	1.31	3.77	1.06	1.82	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	0.1887	0.0909	TOTAL N AMOUNTS IN KG AND % LEACHED			97.80	97.80	2.45		0.73		Note 45
	TOTAL	0.1887	0.0909	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				4.49		2.53	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	0.1649	0.1786	0.0871	0.0983
TOTAL	0.1851	0.2070	0.0986	0.1131

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.70	4.14	1.97	2.26

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.5872	0.7606	0.3131	0.4155

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.76	0.80	0.76	1.07	4.50	4.90	2.73	3.02

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	0.1650	0.1753	0.0867	0.0950
TOTAL	0.1797	0.1971	0.0939	0.1066

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.59	3.94	1.88	2.13

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.3985	0.4360	0.2108	0.2357

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.75	0.78	0.75	0.78	4.37	4.71	2.63	2.90

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	0.1646	0.1789	0.0861	0.0986
TOTAL	0.1776	0.2078	0.0914	0.1136

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.55	4.16	1.83	2.27

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.3287	0.8033	0.1728	0.4392

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.73	0.79	0.73	0.79	4.32	4.92	2.56	3.04

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	0.1796	0.1818	0.0834	0.0924
TOTAL	0.2067	0.2170	0.0993	0.1101

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.13	4.34	1.99	2.2

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	1.3583	2.0761	0.6453	1.0532

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.77	0.79	0.77	0.79	4.91	5.11	2.76	2.98

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	0.1646	0.1818	0.0834	0.0986
TOTAL	0.1776	0.2170	0.0914	0.1136

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.55	4.34	1.83	2.27

	N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other	0.3287	2.0761	0.1728	1.0532

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.73	0.80	0.73	1.07	4.32	5.11	2.56	3.04