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,

Note 33

Crop, fodder/food	WRS	WWH	WWB	WBA	RYE	TRI	SBA	SWH	OAT	MCC	MCW	GRO	GCR	CGR	GHP	GRP	CGR0	CONC	Note 1
Crop #	22	11	13	10	14	16	1	2	3	5	216	263	260	261	2520	252	2610	9999	Note 1
<NUE/e>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	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	0.07	0.05	0.05	0.06	0.08	0.08	0.06	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	160	309	199	21	132	132	-87		Note 14

Crop, PPO/biodiesel/bioethanol	WRB	WWHB	WWBB	WBB	RYB	TRB	SBB	SWB	OAB	MCB	Note 1
Crop #	229	119	139	109	149	169	19	29	39	59	Note 1
<NUE/e>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	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	0.07	0.05	0.05	0.06	0.08	0.08	0.06	0.04	0.05	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	0.05	0.05	0.04	0.07	0.07	0.04	0.06	0.05	0.10	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/ferti-	None	N	Cattle manure				Pig manure				Poultry manure				Sheep manure		Goat manure		Green	Green	None	None	Note 35
lizer kind, #	0	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	6	6	71	72	0	0	Note 35
Manure			Liquid	Sepa-	Deep	Graz-	Liquid	Sepa-	Deep	Rooting	Liquid	Sepa-	Deep	Scrap-	Deep	Graz-	Deep	Graz-	high N	low N			Note 35
handling	None			rated	litter	ing		rated	litter			rated	litter	ing	litter	ing	litter	ing			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	Waste	Cattle	Cattle	Pig	Poultry	Poultry	Sheep	Goat	N crop	N crop	Food/	Fuel/	Note 41
	Kind	moved	in field	Dairy	Beef	Pork	Meat	Eggs	Milk/mutton	Milk/meat	high N	low N	beverage	other	Note 41
#		-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)			Note 42
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

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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											9.9	9.8	1.61	3.71	1.41	2.12 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							10.4	10.4	0.10		0.10	Note 45
1-10 N leach			FIRST YEAR		0.1034		0.0583				TOTAL N AMOUNTS IN KG AND % LEACHED							80.1	79.8	2.00		0.60	Note 45
			TOTAL		0.1238		0.0706				TOTAL N AMOUNTS IN KG AND %							100.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.3761		0.2144 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	30.0	8.7	0.0	0.0	0.0	21	21.3	1.37	3.10	1.20	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Cattle	0.83				0.0	Cattle	1.7	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Dairy	2				10.1	Liquid	0.0	1.70	0.0010	0.51	0.0050 Note 49
Year	N	21	1	19.9	19.4	0	100	11	0	0	14.6	21	4.1	1.0	0.0	0.0	0.0	21	3.1	0.20	0.52	0.18	0.31 Note 47
2	Vol/NH3	Cattle	YES	0.4	4.9	NON	100.00	WWH	1.000	NO	10.5	Cattle	0.67				0.0	Cattle	0.2	0.06	0.0125	0.06	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.720	0.0	10.5	Dairy	2				1.5	Liquid	0.0	0.26	0.0010	0.08	0.0050 Note 49
Year	N	21	1	2.9	2.9	0	100	11	0	0	2.1	21	0.6	0.1	0.0	0.0	0.0	21	0.5	0.03	0.08	0.03	0.05 Note 47
3	Vol/NH3	Cattle	YES	0.1	0.7	NON	100.00	WWH	1.000	NO	1.5	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	0.720	0.0	1.5	Dairy	2				0.2	Liquid	0.0	0.04	0.0010	0.01	0.0050 Note 49
Year	N	21	1	0.4	0.4	0	100	1	0	0	0.3	21	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.01 Note 47
4	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.2	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.720	0.0	0.2	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	21	1	0.1	0.1	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	0.720	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	0.720	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	0.720	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	0.720	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	0.720	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	0.720	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	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.19	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.71	2.12	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.71	2.12	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	4.56	2.96	Note 51

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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											9.7	9.7	1.82	3.92	1.40	2.11	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											10.8	10.8	0.11		0.11		Note 45
1-10	N leach		FIRST YEAR		0.1096	0.0582	TOTAL N AMOUNTS IN KG AND % LEACHED											79.8	79.5	1.99		0.60		Note 45
			TOTAL		0.1307	0.0704	TOTAL N AMOUNTS IN KG AND %											100.4	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.4024		0.2167		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	30.0	8.7	0.0	0.0	0.0	22	21.3	1.56	3.29	1.21	1.75	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Dairy	2				10.1	Sep	0.0	1.70	0.0105	0.51	0.0050	Note 49
Year	N	22	1	20.5	18.8	0	100	11	0	0	14.1	21	3.7	0.9	0.0	0.0	0.0	22	2.8	0.22	0.55	0.17	0.32	Note 47
2	Vol/NH3	Cattle	YES	1.7	4.7	NON	100.00	WWH	1.000	NO	10.4	Cattle	0.67				0.0	Cattle	0.1	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.740	0.0	10.4	Dairy	2				1.4	Sep	0.0	0.26	0.0105	0.08	0.0050	Note 49
Year	N	22	1	2.7	2.5	0	100	11	0	0	1.9	21	0.5	0.1	0.0	0.0	0.0	22	0.4	0.03	0.07	0.02	0.04	Note 47
3	Vol/NH3	Cattle	YES	0.2	0.6	NON	100.00	WWH	1.000	NO	1.4	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.740	0.0	1.4	Dairy	2				0.2	Sep	0.0	0.03	0.0105	0.01	0.0050	Note 49
Year	N	22	1	0.4	0.3	0	100	1	0	0	0.2	21	0.1	0.0	0.0	0.0	0.0	22	0.0	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.2	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.740	0.0	0.2	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.16	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.92	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	3.92	2.11	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	4.75	2.94	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											9.3	9.0	1.96	4.09	1.36	2.11 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.5	15.0	0.16		0.16	Note 45
1-10 N leach			FIRST YEAR		0.1160		0.0583				TOTAL N AMOUNTS IN KG AND % LEACHED							78.6	76.0	1.97		0.59	Note 45
			TOTAL		0.1362		0.0702				TOTAL N AMOUNTS IN KG AND %							103.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.4389		0.2263 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	30.0	8.7	0.0	0.0	0.0	23	21.3	1.75	3.48	1.20	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Cattle	0.83				0.0	Cattle	1.3	0.03	0.0125	0.03	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Dairy	2				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050 Note 49
Year	N	23	1	23.2	16.2	0	100	11	0	0	12.2	21	2.2	0.5	0.0	0.0	0.0	23	1.7	0.20	0.56	0.14	0.33 Note 47
2	Vol/NH3	Cattle	YES	6.9	4.1	NON	100.00	WWH	1.000	NO	10.0	Cattle	0.67				0.0	Cattle	0.1	0.11	0.0125	0.11	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.820	0.0	10.0	Dairy	2				1.2	Deep	0.0	0.25	0.0200	0.07	0.0050 Note 49
Year	N	23	1	1.8	1.3	0	100	11	0	0	1.0	21	0.2	0.0	0.0	0.0	0.0	23	0.1	0.02	0.04	0.01	0.03 Note 47
3	Vol/NH3	Cattle	YES	0.5	0.3	NON	100.00	WWH	1.000	NO	0.8	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.820	0.0	0.8	Dairy	2				0.1	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	23	1	0.1	0.1	0	100	1	0	0	0.1	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
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	Deep	0.600	1.159		ORG	1.00	1.000	0.820	0.0	0.1	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.06	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	4.09	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	4.09	2.11	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	4.87	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 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											9.5	9.5	2.13	4.33	1.83	2.52	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											3.9	3.9	0.04		0.04		Note 45
1-10	N leach		FIRST YEAR		0.1164	0.0687	TOTAL N AMOUNTS IN KG AND % LEACHED											86.6	86.6	2.17		0.65		Note 45
			TOTAL		0.1444	0.0839	TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.4558		0.2647	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	21	30.0	8.7	0.0	0.0	0.0	24	21.3	1.77	3.49	1.53	2.06	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Dairy	2				10.1	Graz	0.0	1.70	0.0200	0.51	0.0200	Note 49
Year	N	24	1	21.3	21.3	0	100	11	0	0	19.8	21	2.9	0.7	0.0	0.0	0.0	24	2.2	0.32	0.75	0.27	0.41	Note 47
2	Vol/NH3	Cattle	YES	0.0	1.5	NON	100.00	WWH	1.000	NO	16.9	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	0.855	0.0	16.9	Dairy	2				2.0	Graz	0.0	0.42	0.0200	0.13	0.0200	Note 49
Year	N	24	1	2.2	2.2	0	100	11	0	0	2.0	21	0.3	0.1	0.0	0.0	0.0	24	0.2	0.03	0.08	0.03	0.04	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	1.7	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.855	0.0	1.7	Dairy	2				0.2	Graz	0.0	0.04	0.0200	0.01	0.0200	Note 49
Year	N	24	1	0.2	0.2	0	100	1	0	0	0.2	21	0.0	0.0	0.0	0.0	0.0	24	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	0.2	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	0.855	0.0	0.2	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.06	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	4.33	2.52	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	4.33	2.52	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	5.12	3.30	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	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										8.8	8.7	1.62	3.75	1.43	2.14	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										10.8	10.8	0.11		0.11		Note 45
1-10	N leach		FIRST YEAR		0.1035	0.0585		TOTAL N AMOUNTS IN KG AND % LEACHED										80.8	80.5	2.02		0.61		Note 45
			TOTAL		0.1250	0.0714		TOTAL N AMOUNTS IN KG AND %										100.4	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.4279		0.2446	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	30.0	7.7	0.0	0.0	0.0	21	22.3	1.37	3.10	1.21	1.76	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Cattle	0.83				0.0	Cattle	1.8	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Beef	2				10.1	Liquid	0.0	1.70	0.0010	0.51	0.0050	Note 49
Year	N	21	1	20.8	20.4	0	100	11	0	0	15.3	22	4.3	0.9	0.0	0.0	0.0	21	3.4	0.21	0.55	0.19	0.33	Note 47
2	Vol/NH3	Cattle	YES	0.5	5.1	NON	100.00	WWH	1.000	NO	11.0	Cattle	0.67				0.0	Cattle	0.3	0.06	0.0125	0.06	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.720	0.0	11.0	Beef	2				1.6	Liquid	0.0	0.28	0.0010	0.08	0.0050	Note 49
Year	N	21	1	3.2	3.1	0	100	11	0	0	2.3	22	0.7	0.1	0.0	0.0	0.0	21	0.5	0.03	0.08	0.03	0.05	Note 47
3	Vol/NH3	Cattle	YES	0.1	0.8	NON	100.00	WWH	1.000	NO	1.7	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	0.720	0.0	1.7	Beef	2				0.2	Liquid	0.0	0.04	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.5	0.5	0	100	1	0	0	0.4	22	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.3	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	0.720	0.0	0.3	Beef	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	10	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
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	0.720	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	0.720	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	0.720	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	0.720	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	0.720	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	0.720	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	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.20	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.75	2.14	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	2.14	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.86	Total including natural	4.60	3.00	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											8.6	8.6	1.84	3.97	1.42	2.14 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							11.3	11.3	0.11		0.11	Note 45
1-10 N leach			FIRST YEAR		0.1100		0.0584				TOTAL N AMOUNTS IN KG AND % LEACHED							80.4	80.1	2.01		0.60	Note 45
			TOTAL		0.1322		0.0712				TOTAL N AMOUNTS IN KG AND %							100.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.4592		0.2474 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	30.0	7.7	0.0	0.0	0.0	22	22.3	1.57	3.30	1.21	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Beef	2				10.1	Sep	0.0	1.70	0.0105	0.51	0.0050 Note 49
Year	N	22	1	21.5	19.7	0	100	11	0	0	14.8	22	3.8	0.8	0.0	0.0	0.0	22	3.0	0.23	0.58	0.18	0.33 Note 47
2	Vol/NH3	Cattle	YES	1.8	4.9	NON	100.00	WWH	1.000	NO	10.9	Cattle	0.67				0.0	Cattle	0.2	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.740	0.0	10.9	Beef	2				1.5	Sep	0.0	0.27	0.0105	0.08	0.0050 Note 49
Year	N	22	1	2.9	2.7	0	100	11	0	0	2.0	22	0.5	0.1	0.0	0.0	0.0	22	0.4	0.03	0.08	0.02	0.05 Note 47
3	Vol/NH3	Cattle	YES	0.2	0.7	NON	100.00	WWH	1.000	NO	1.5	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.740	0.0	1.5	Beef	2				0.2	Sep	0.0	0.04	0.0105	0.01	0.0050 Note 49
Year	N	22	1	0.4	0.4	0	100	1	0	0	0.3	22	0.1	0.0	0.0	0.0	0.0	22	0.1	0.00	0.01	0.00	0.01 Note 47
4	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.2	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.740	0.0	0.2	Beef	2				0.0	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.1	0.1	0	100	10	0	0	0.0	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.17	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.97	2.14	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	3.97	2.14	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	4.80	2.97	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											8.2	7.9	2.00	4.14	1.38	2.13 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							16.2	15.6	0.16		0.16	Note 45
1-10 N leach			FIRST YEAR		0.1166		0.0584				TOTAL N AMOUNTS IN KG AND % LEACHED							79.2	76.4	1.98		0.59	Note 45
			TOTAL		0.1379		0.0710				TOTAL N AMOUNTS IN KG AND %							103.6	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.5026		0.2588 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	30.0	7.7	0.0	0.0	0.0	23	22.3	1.77	3.50	1.21	1.75 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Cattle	0.83				0.0	Cattle	1.3	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Beef	2				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050 Note 49
Year	N	23	1	24.3	17.0	0	100	11	0	0	12.7	22	2.3	0.5	0.0	0.0	0.0	23	1.8	0.21	0.59	0.15	0.35 Note 47
2	Vol/NH3	Cattle	YES	7.3	4.2	NON	100.00	WWH	1.000	NO	10.5	Cattle	0.67				0.0	Cattle	0.1	0.12	0.0125	0.12	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.820	0.0	10.5	Beef	2				1.3	Deep	0.0	0.26	0.0200	0.08	0.0050 Note 49
Year	N	23	1	2.0	1.4	0	100	11	0	0	1.0	22	0.2	0.0	0.0	0.0	0.0	23	0.1	0.02	0.05	0.01	0.03 Note 47
3	Vol/NH3	Cattle	YES	0.6	0.3	NON	100.00	WWH	1.000	NO	0.9	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.820	0.0	0.9	Beef	2				0.1	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	23	1	0.2	0.1	0	100	1	0	0	0.1	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
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	Deep	0.600	1.159		ORG	1.00	1.000	0.820	0.0	0.1	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.10	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.14	2.13	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.14	2.13	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.92	2.92	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											8.4	8.4	2.17	4.40	1.87	2.56	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006						TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						3.9	3.9	0.04		0.04		Note 45
1-10 N leach			FIRST YEAR		0.1171	0.0694						TOTAL N AMOUNTS IN KG AND % LEACHED						87.6	87.6	2.19		0.66		Note 45
			TOTAL		0.1466	0.0854						TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.5227		0.3045	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	22	30.0	7.7	0.0	0.0	0.0	24	22.3	1.80	3.51	1.55	2.08	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Beef	2				10.1	Graz	0.0	1.70	0.0200	0.51	0.0200	Note 49
Year	N	24	1	22.3	22.3	0	100	11	0	0	20.7	22	3.0	0.6	0.0	0.0	0.0	24	2.4	0.33	0.79	0.28	0.43	Note 47
2	Vol/NH3	Cattle	YES	0.0	1.6	NON	100.00	WWH	1.000	NO	17.7	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.855	0.0	17.7	Beef	2				2.1	Graz	0.0	0.44	0.0200	0.13	0.0200	Note 49
Year	N	24	1	2.4	2.4	0	100	11	0	0	2.2	22	0.3	0.1	0.0	0.0	0.0	24	0.3	0.04	0.08	0.03	0.05	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	1.9	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	0.855	0.0	1.9	Beef	2				0.2	Graz	0.0	0.05	0.0200	0.01	0.0200	Note 49
Year	N	24	1	0.3	0.3	0	100	1	0	0	0.2	22	0.0	0.0	0.0	0.0	0.0	24	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	0.2	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	0.855	0.0	0.2	Beef	2				0.0	Graz	0.0	0.01	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.07	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	Current crops	4.40	2.56	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.40	2.56	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	5.19	3.35	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							14.1	14.1				1.54	3.54	1.33	2.00	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					9.5	9.5				0.10		0.10		Note 45
1-10 N leach			FIRST YEAR		0.1035		0.0578		TOTAL N AMOUNTS IN KG AND % LEACHED					76.4	76.4				1.91		0.57		Note 45
			TOTAL		0.1180		0.0665		TOTAL N AMOUNTS IN KG AND %					100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.2514		0.1417	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	30.0	12.5	0.0	0.0	0.0	31	17.5	1.36	3.11	1.18	1.73	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Pig	0.83				0.0	Pig	2.4	0.05	0.0125	0.05	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Pork	3				10.1	Liquid	0.0	1.70	0.0010	0.51	0.0050	Note 49
Year	N	31	1	15.0	14.6	0	100	11	0	0	11.0	32	3.3	1.4	0.0	0.0	0.0	31	1.9	0.15	0.39	0.13	0.23	Note 47
2	Vol/NH3	Pig	YES	0.4	3.7	NON	100.00	WWH	1.000	NO	7.7	Pig	0.67				0.0	Pig	0.3	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.700	0.0	7.7	Pork	3				1.1	Liquid	0.0	0.19	0.0010	0.06	0.0050	Note 49
Year	N	31	1	1.6	1.6	0	100	11	0	0	1.2	32	0.4	0.2	0.0	0.0	0.0	31	0.2	0.02	0.04	0.01	0.03	Note 47
3	Vol/NH3	Pig	YES	0.0	0.4	NON	100.00	WWH	1.000	NO	0.8	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	0.700	0.0	0.8	Pork	3				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	31	1	0.2	0.2	0	100	1	0	0	0.1	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
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	Liquid	1.000	1.000		ORG	1.00	1.000	0.700	0.0	0.1	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.14	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.54	2.00	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.54	2.00	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	4.36	2.81	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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							13.6	13.5	1.64	3.63	1.29	1.97	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		0.1083	0.0579	TOTAL N AMOUNTS IN KG AND % LEACHED							74.7	74.4	1.87		0.56		Note 45
			TOTAL		0.1210	0.0656	TOTAL N AMOUNTS IN KG AND %							100.4	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																	0.2677		0.1453	Note 46
Year N		1	1	100.0	100.0	0	100	59	0	0	97.8	32	30.0	12.5	0.0	0.0	0.0	32	17.5	1.50	3.25	1.18	1.74	Note 47
1 Vol/NH3	N	YES		0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Pig	0.83				0.0	Pig	3.1	0.05	0.0125	0.05	0.0100	Note 48
N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0		67.8	Pork	3				10.1	Sep	0.0	1.70	0.0105	0.51	0.0050	Note 49
Year N		32	1	14.7	11.5	0	100	11	0	0	8.6	32	2.2	0.9	0.0	0.0	0.0	32	1.3	0.13	0.35	0.10	0.21	Note 47
2 Vol/NH3	Pig	YES		3.1	2.9	NON	100.00	WWH	1.000	NO	6.4	Pig	0.67				0.0	Pig	0.2	0.06	0.0125	0.06	0.0100	Note 48
N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.740	0.0		6.4	Pork	3				0.9	Sep	0.0	0.16	0.0105	0.05	0.0050	Note 49
Year N		32	1	1.1	0.9	0	100	11	0	0	0.6	32	0.2	0.1	0.0	0.0	0.0	32	0.1	0.01	0.03	0.01	0.02	Note 47
3 Vol/NH3	Pig	YES		0.2	0.2	NON	100.00	WWH	1.000	NO	0.5	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	0.740	0.0		0.5	Pork	3				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050	Note 49
Year N		32	1	0.1	0.1	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.09	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.63	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	3.63	1.97	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	4.41	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 PIG PORK Note 43
AND CONTINUING WITH PIG DEEP LITTER TO PRODUCE WINTER WHEAT FOR PIG PORK Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											13.3	13.1	1.72	3.70	1.25	1.96 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.4	15.2	0.15		0.15	Note 45
1-10 N leach			FIRST YEAR		0.1124		0.0581				TOTAL N AMOUNTS IN KG AND % LEACHED							73.0	71.7	1.83		0.55	Note 45
			TOTAL		0.1235		0.0652				TOTAL N AMOUNTS IN KG AND %							101.8	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2784		0.1470 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	30.0	12.5	0.0	0.0	0.0	33	17.5	1.61	3.37	1.17	1.74 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Pig	0.83				0.0	Pig	4.4	0.07	0.0125	0.07	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Pork	3				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050 Note 49
Year	N	33	1	14.8	8.9	0	100	11	0	0	6.6	32	1.7	0.7	0.0	0.0	0.0	33	1.0	0.11	0.31	0.08	0.20 Note 47
2	Vol/NH3	Pig	YES	5.9	2.2	NON	100.00	WWH	1.000	NO	4.9	Pig	0.67				0.0	Pig	0.3	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.740	0.0	4.9	Pork	3				0.7	Deep	0.0	0.12	0.0200	0.04	0.0050 Note 49
Year	N	33	1	0.8	0.5	0	100	11	0	0	0.4	32	0.1	0.0	0.0	0.0	0.0	33	0.1	0.01	0.02	0.00	0.01 Note 47
3	Vol/NH3	Pig	YES	0.3	0.1	NON	100.00	WWH	1.000	NO	0.3	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	0.740	0.0	0.3	Pork	3				0.0	Deep	0.0	0.01	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	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	3.70	1.96	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.70	1.96	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	4.47	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 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							14.1	14.1				2.00	4.09	1.71	2.36	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		0.1139	0.0662	TOTAL N AMOUNTS IN KG AND % LEACHED							82.3	82.3				2.06		0.62		Note 45
			TOTAL		0.1363	0.0786	TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.2890		0.1667	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	32	30.0	12.5	0.0	0.0	0.0	34	17.5	1.70	3.42	1.45	1.98 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Pork	3				10.1	Root	0.0	1.70	0.0200	0.51	0.0200 Note 49
Year	N	34	1	17.5	17.5	0	100	11	0	0	16.2	32	3.4	1.4	0.0	0.0	0.0	34	2.0	0.26	0.60	0.22	0.33 Note 47
2	Vol/NH3	Pig	YES	0.0	1.2	NON	100.00	WWH	1.000	NO	12.8	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	0.790	0.0	12.8	Pork	3				1.7	Root	0.0	0.32	0.0200	0.10	0.0200 Note 49
Year	N	34	1	2.0	2.0	0	100	11	0	0	1.8	32	0.4	0.2	0.0	0.0	0.0	34	0.2	0.03	0.07	0.03	0.04 Note 47
3	Vol/NH3	Pig	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	1.5	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	0.790	0.0	1.5	Pork	3				0.2	Root	0.0	0.04	0.0200	0.01	0.0200 Note 49
Year	N	34	1	0.2	0.2	0	100	1	0	0	0.2	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.2	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.790	0.0	0.2	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	0.790	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	0.790	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	0.790	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	0.790	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	0.790	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	0.790	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	0.08	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	4.09	2.36	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.09	2.36	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	4.89	3.16	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						16.7	16.7	1.51	3.48	1.30	1.94	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		0.1031	0.0572		TOTAL N AMOUNTS IN KG AND % LEACHED						75.7	75.7	1.89		0.57		Note 45
			TOTAL		0.1159	0.0647		TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.2082		0.1161	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	30.0	15.3	0.0	0.0	0.0	41	14.7	1.36	3.09	1.17	1.72	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Meat	4				10.1	Liquid	0.0	1.70	0.0010	0.51	0.0050	Note 49
Year	N	41	1	13.2	13.0	0	100	11	0	0	9.7	42	2.5	1.3	0.0	0.0	0.0	41	1.2	0.14	0.35	0.12	0.21	Note 47
2	Vol/NH3	Poultry	YES	0.3	3.2	NON	100.00	WWH	1.000	NO	7.2	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	0.740	0.0	7.2	Meat	4				1.0	Liquid	0.0	0.18	0.0010	0.05	0.0050	Note 49
Year	N	41	1	1.1	1.1	0	100	11	0	0	0.8	42	0.2	0.1	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	0.6	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	0.740	0.0	0.6	Meat	4				0.1	Liquid	0.0	0.02	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.1	0.1	0	100	1	0	0	0.1	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	0.1	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	0.740	0.0	0.1	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	10	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.07	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	3.48	1.94	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	3.48	1.94	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	4.27	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 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											16.3	16.3	1.58	3.51	1.25	1.90	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										10.4	10.4	0.10		0.10		Note 45
1-10 N leach			FIRST YEAR		0.1073	0.0576		TOTAL N AMOUNTS IN KG AND % LEACHED										73.3	73.3	1.83		0.55		Note 45
			TOTAL		0.1171	0.0634		TOTAL N AMOUNTS IN KG AND %										100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2156		0.1167	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	30.0	15.3	0.0	0.0	0.0	42	14.7	1.47	3.22	1.16	1.73	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Poultry	0.83				0.0	Poultry	3.7	0.06	0.0125	0.06	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Meat	4				10.1	Sep	0.0	1.70	0.0105	0.51	0.0050	Note 49
Year	N	42	1	11.0	9.4	0	100	11	0	0	7.0	42	1.8	0.9	0.0	0.0	0.0	42	0.9	0.10	0.28	0.08	0.16	Note 47
2	Vol/NH3	Poultry	YES	1.7	2.3	NON	100.00	WWH	1.000	NO	5.2	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	0.740	0.0	5.2	Meat	4				0.7	Sep	0.0	0.13	0.0105	0.04	0.0050	Note 49
Year	N	42	1	0.7	0.6	0	100	11	0	0	0.4	42	0.1	0.1	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	0.1	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	Sep	0.867	1.000		ORG	1.00	1.000	0.740	0.0	0.3	Meat	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	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.05	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	3.51	1.90	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.51	1.90	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	4.28	2.67	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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											15.8	15.8	1.61	3.54	1.21	1.88	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							11.8	11.8	0.12		0.12		Note 45
1-10 N leach			FIRST YEAR		0.1101		0.0579				TOTAL N AMOUNTS IN KG AND % LEACHED							72.5	72.4	1.81		0.54		Note 45
			TOTAL		0.1180		0.0626				TOTAL N AMOUNTS IN KG AND %							100.1	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.2237		0.1186	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	30.0	15.3	0.0	0.0	0.0	43	14.7	1.53	3.30	1.15	1.74	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Poultry	0.83				0.0	Poultry	5.9	0.08	0.0125	0.08	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Meat	4				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050	Note 49
Year	N	43	1	8.9	7.4	0	100	11	0	0	5.5	42	1.0	0.5	0.0	0.0	0.0	43	0.5	0.08	0.23	0.06	0.13	Note 47
2	Vol/NH3	Poultry	YES	1.6	1.8	NON	100.00	WWH	1.000	NO	4.5	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	0.820	0.0	4.5	Meat	4				0.6	Deep	0.0	0.11	0.0200	0.03	0.0050	Note 49
Year	N	43	1	0.3	0.2	0	100	11	0	0	0.2	42	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	0.820	0.0	0.2	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.03	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	3.54	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	3.54	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	0.74	Total including natural	4.28	2.62	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL AND 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							16.4	16.4	1.87	3.91	1.58	2.22	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		0.1120	0.0643	TOTAL N AMOUNTS IN KG AND % LEACHED							80.3	80.3	2.01		0.60		Note 45
			TOTAL		0.1302	0.0740	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.2384		0.1355	Note 46
Year N	1	1	100.0	100.0	0	100	59	0	0	97.8	42	30.0	15.3	0.0	0.0	0.0	44	14.7	1.64	3.36	1.40	1.93	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Meat	4				10.1	Scrap	0.0	1.70	0.0200	0.51	0.0200	Note 49
Year N	44	1	14.7	14.7	0	100	11	0	0	13.7	42	2.0	1.0	0.0	0.0	0.0	44	1.0	0.21	0.51	0.17	0.27	Note 47
2 Vol/NH3	Poultry	YES	0.0	1.0	NON	100.00	WWH	1.000	NO	11.7	Poultry	0.67				0.0	Poultry	0.0	0.01	0.0125	0.01	0.0100	Note 48
N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.855	0.0	11.7	Meat	4				1.4	Scrap	0.0	0.29	0.0200	0.09	0.0200	Note 49
Year N	44	1	1.0	1.0	0	100	11	0	0	0.9	42	0.1	0.1	0.0	0.0	0.0	44	0.1	0.01	0.03	0.01	0.02	Note 47
3 Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	WWH	1.000	NO	0.8	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.855	0.0	0.8	Meat	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	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	0.1	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	0.855	0.0	0.1	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	44	1	0.0	0.0	0	100	10	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
5 Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.04	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	3.91	2.22	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	3.91	2.22	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	4.67	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 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											8.3	8.3	1.61	3.74	1.42	2.13	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							11.1	11.1	0.11		0.11		Note 45
1-10 N leach			FIRST YEAR		0.1037		0.0587				TOTAL N AMOUNTS IN KG AND % LEACHED							80.6	80.6	2.02		0.60		Note 45
			TOTAL		0.1246		0.0711				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.4495		0.2565	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	30.0	7.2	0.0	0.0	0.0	41	22.8	1.37	3.11	1.21	1.76	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Poultry	0.83				0.0	Poultry	2.3	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Eggs	4				10.1	Liquid	0.0	1.70	0.0010	0.51	0.0050	Note 49
Year	N	41	1	20.5	20.1	0	100	11	0	0	15.1	43	3.9	0.9	0.0	0.0	0.0	41	3.0	0.21	0.55	0.18	0.32	Note 47
2	Vol/NH3	Poultry	YES	0.4	5.0	NON	100.00	WWH	1.000	NO	11.1	Poultry	0.67				0.0	Poultry	0.3	0.06	0.0125	0.06	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.740	0.0	11.1	Eggs	4				1.5	Liquid	0.0	0.28	0.0010	0.08	0.0050	Note 49
Year	N	41	1	2.7	2.6	0	100	11	0	0	2.0	43	0.5	0.1	0.0	0.0	0.0	41	0.4	0.03	0.07	0.02	0.04	Note 47
3	Vol/NH3	Poultry	YES	0.1	0.7	NON	100.00	WWH	1.000	NO	1.5	Poultry	0.67				0.0	Poultry	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.740	0.0	1.5	Eggs	4				0.2	Liquid	0.0	0.04	0.0010	0.01	0.0050	Note 49
Year	N	41	1	0.3	0.3	0	100	1	0	0	0.3	43	0.1	0.0	0.0	0.0	0.0	41	0.1	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.2	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.740	0.0	0.2	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.11	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	3.74	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	3.74	2.13	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	4.58	2.97	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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												8.0	8.0	1.71	3.78	1.33	2.06	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.3	15.3	0.15		0.15		Note 45
1-10 N leach			FIRST YEAR		0.1101		0.0593				TOTAL N AMOUNTS IN KG AND % LEACHED							76.7	76.7	1.92		0.58		Note 45
			TOTAL		0.1261		0.0688				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.4739		0.2584	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	30.0	7.2	0.0	0.0	0.0	42	22.8	1.53	3.30	1.19	1.78	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Poultry	0.83				0.0	Poultry	5.7	0.08	0.0125	0.08	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Eggs	4				10.1	Sep	0.0	1.70	0.0105	0.51	0.0050	Note 49
Year	N	42	1	17.1	14.5	0	100	11	0	0	10.9	43	2.8	0.7	0.0	0.0	0.0	42	2.1	0.17	0.44	0.13	0.26	Note 47
2	Vol/NH3	Poultry	YES	2.6	3.6	NON	100.00	WWH	1.000	NO	8.1	Poultry	0.67				0.0	Poultry	0.5	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.740	0.0	8.1	Eggs	4				1.1	Sep	0.0	0.20	0.0105	0.06	0.0050	Note 49
Year	N	42	1	1.6	1.4	0	100	11	0	0	1.0	43	0.3	0.1	0.0	0.0	0.0	42	0.2	0.02	0.04	0.01	0.02	Note 47
3	Vol/NH3	Poultry	YES	0.2	0.3	NON	100.00	WWH	1.000	NO	0.8	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.740	0.0	0.8	Eggs	4				0.1	Sep	0.0	0.02	0.0105	0.01	0.0050	Note 49
Year	N	42	1	0.2	0.1	0	100	1	0	0	0.1	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
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	Sep	0.867	1.000		ORG	1.00	1.000	0.740	0.0	0.1	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.740	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	0.08	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	3.78	2.06	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.78	2.06	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	4.58	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 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											7.6	7.6	1.76	3.82	1.28	2.02	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							17.4	17.3	0.17		0.17		Note 45
1-10 N leach			FIRST YEAR		0.1144		0.0598				TOTAL N AMOUNTS IN KG AND % LEACHED							75.2	75.1	1.88		0.56		Note 45
			TOTAL		0.1272		0.0672				TOTAL N AMOUNTS IN KG AND %							100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.5006		0.2645		Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	30.0	7.2	0.0	0.0	0.0	43	22.8	1.62	3.43	1.17	1.79	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Poultry	0.83				0.0	Poultry	9.1	0.11	0.0125	0.11	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Eggs	4				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050	Note 49
Year	N	43	1	13.8	11.4	0	100	11	0	0	8.6	43	1.5	0.4	0.0	0.0	0.0	43	1.2	0.13	0.36	0.10	0.21	Note 47
2	Vol/NH3	Poultry	YES	2.4	2.9	NON	100.00	WWH	1.000	NO	7.0	Poultry	0.67				0.0	Poultry	0.5	0.06	0.0125	0.06	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.820	0.0	7.0	Eggs	4				0.9	Deep	0.0	0.18	0.0200	0.05	0.0050	Note 49
Year	N	43	1	0.7	0.6	0	100	11	0	0	0.4	43	0.1	0.0	0.0	0.0	0.0	43	0.1	0.01	0.02	0.01	0.01	Note 47
3	Vol/NH3	Poultry	YES	0.1	0.1	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	Deep	0.600	1.013		ORG	1.00	1.000	0.820	0.0	0.4	Eggs	4				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050	Note 49
Year	N	43	1	0.0	0.0	0	100	1	0	0	0.0	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.04	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	3.82	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	3.82	2.02	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	4.57	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 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											8.1	8.1	2.18	4.42	1.88	2.58 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							4.0	4.0	0.04		0.04	Note 45
1-10 N leach			FIRST YEAR		0.1174		0.0697				TOTAL N AMOUNTS IN KG AND % LEACHED							88.0	88.0	2.20		0.66	Note 45
			TOTAL		0.1474		0.0859				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.5488		0.3200	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	43	30.0	7.2	0.0	0.0	0.0	44	22.8	1.80	3.52	1.56	2.09 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Eggs	4				10.1	Scrap	0.0	1.70	0.0200	0.51	0.0200 Note 49
Year	N	44	1	22.8	22.8	0	100	11	0	0	21.2	43	3.1	0.7	0.0	0.0	0.0	44	2.3	0.34	0.81	0.29	0.44 Note 47
2	Vol/NH3	Poultry	YES	0.0	1.6	NON	100.00	WWH	1.000	NO	18.1	Poultry	0.67				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.855	0.0	18.1	Eggs	4				2.2	Scrap	0.0	0.45	0.0200	0.14	0.0200 Note 49
Year	N	44	1	2.3	2.3	0	100	11	0	0	2.2	43	0.3	0.1	0.0	0.0	0.0	44	0.2	0.03	0.08	0.03	0.04 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	1.9	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	0.855	0.0	1.9	Eggs	4				0.2	Scrap	0.0	0.05	0.0200	0.01	0.0200 Note 49
Year	N	44	1	0.2	0.2	0	100	1	0	0	0.2	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.2	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	0.855	0.0	0.2	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.07	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	Current crops	4.42	2.58	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	4.42	2.58	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	5.21	3.37	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														5.0	4.8	2.28	4.66	1.57	2.33	Note 45
Year N NH3	ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3												6.8	6.5	0.07		0.07		Note 45
1-10 N leach	FIRST YEAR		0.1181	0.0594	TOTAL N AMOUNTS IN KG AND % LEACHED												92.4	88.7	2.31		0.69		Note 45
	TOTAL		0.1552	0.0778	TOTAL N AMOUNTS IN KG AND %												104.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.9263		0.4641	Note 46
Year N	1	1	100.0	100.0	0	100	59	0	0	97.8	51	30.0	4.3	0.0	0.0	0.0	53	25.7	1.79	3.54	1.21	1.78	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Sheep	0.83				0.0	Sheep	3.9	0.06	0.0125	0.06	0.0100	Note 48
N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Milk/mutt	5				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050	Note 49
Year N	53	1	25.4	25.4	0	100	11	0	0	25.4	51	4.6	0.6	0.0	0.0	0.0	53	3.9	0.42	0.94	0.30	0.47	Note 47
2 Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	20.8	Sheep	0.67				0.0	Sheep	0.6	0.01	0.0125	0.01	0.0100	Note 48
N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.820	0.0	20.8	Milk/mutt	5				2.6	Deep	0.0	0.52	0.0200	0.16	0.0050	Note 49
Year N	53	1	3.9	3.9	0	100	11	0	0	3.9	51	0.7	0.1	0.0	0.0	0.0	53	0.6	0.06	0.14	0.05	0.07	Note 47
3 Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	NO	3.2	Sheep	0.67				0.0	Sheep	0.1	0.00	0.0125	0.00	0.0100	Note 48
N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.820	0.0	3.2	Milk/mutt	5				0.4	Deep	0.0	0.08	0.0200	0.02	0.0050	Note 49
Year N	53	1	0.6	0.6	0	100	1	0	0	0.6	51	0.1	0.0	0.0	0.0	0.0	53	0.1	0.01	0.02	0.01	0.01	Note 47
4 Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.5	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	0.820	0.0	0.5	Milk/mutt	5				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050	Note 49
Year N	53	1	0.1	0.1	0	100	10	0	0	0.1	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00	Note 47
5 Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.820	0.0	0.1	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.16	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.66	2.33	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.66	2.33	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	5.48	3.16	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											4.8	4.8	2.30	4.62	1.41	2.13 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							4.2	4.2	0.04		0.04	Note 45
1-10 N leach			FIRST YEAR		0.1194		0.0545				TOTAL N AMOUNTS IN KG AND % LEACHED							90.9	90.9	2.27		0.68	Note 45
			TOTAL		0.1540		0.0712				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.9590		0.4430 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	51	30.0	4.3	0.0	0.0	0.0	54	25.7	1.86	3.58	1.10	1.64 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Milk/mutt	5				10.1	Graz	0.0	1.70	0.0200	0.51	0.0000 Note 49
Year	N	54	1	25.7	25.7	0	100	11	0	0	23.9	51	3.5	0.5	0.0	0.0	0.0	54	3.0	0.39	0.92	0.27	0.44 Note 47
2	Vol/NH3	Sheep	YES	0.0	1.8	NON	100.00	WWH	1.000	NO	20.5	Sheep	0.67				0.0	Sheep	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.855	0.0	20.5	Milk/mutt	5				2.4	Graz	0.0	0.51	0.0200	0.15	0.0000 Note 49
Year	N	54	1	3.0	3.0	0	100	11	0	0	2.8	51	0.4	0.1	0.0	0.0	0.0	54	0.3	0.05	0.11	0.03	0.05 Note 47
3	Vol/NH3	Sheep	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	2.4	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	0.855	0.0	2.4	Milk/mutt	5				0.3	Graz	0.0	0.06	0.0200	0.02	0.0000 Note 49
Year	N	54	1	0.3	0.3	0	100	1	0	0	0.3	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.01	0.01	0.00	0.01 Note 47
4	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.3	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	0.855	0.0	0.3	Milk/mutt	5				0.0	Graz	0.0	0.01	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.08	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	4.62	2.13	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.62	2.13	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	5.42	2.94	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											3.2	3.1	2.13	4.39	1.45	2.25 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							17.6	16.8	0.18		0.18	Note 45
1-10 N leach			FIRST YEAR		0.1189		0.0597				TOTAL N AMOUNTS IN KG AND % LEACHED							83.4	80.1	2.09		0.63	Note 45
			TOTAL		0.1462		0.0750				TOTAL N AMOUNTS IN KG AND %							104.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					1.3668		0.7008 Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	61	30.0	2.9	0.0	0.0	0.0	63	27.1	1.81	3.57	1.22	1.79 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	Goat	0.83				0.0	Goat	4.1	0.06	0.0125	0.06	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.693	0.0	67.8	Milk/meat	6				10.1	Deep	0.0	1.70	0.0200	0.51	0.0050 Note 49
Year	N	63	1	26.8	22.8	0	100	11	0	0	17.1	61	3.1	0.3	0.0	0.0	0.0	63	2.8	0.28	0.73	0.20	0.41 Note 47
2	Vol/NH3	Goat	YES	4.0	5.7	NON	100.00	WWH	1.000	NO	14.0	Goat	0.67				0.0	Goat	0.4	0.10	0.0125	0.10	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.820	0.0	14.0	Milk/meat	6				1.7	Deep	0.0	0.35	0.0200	0.11	0.0050 Note 49
Year	N	63	1	2.7	2.3	0	100	11	0	0	1.7	61	0.3	0.0	0.0	0.0	0.0	63	0.3	0.03	0.08	0.02	0.04 Note 47
3	Vol/NH3	Goat	YES	0.4	0.6	NON	100.00	WWH	1.000	NO	1.4	Goat	0.67				0.0	Goat	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.820	0.0	1.4	Milk/meat	6				0.2	Deep	0.0	0.04	0.0200	0.01	0.0050 Note 49
Year	N	63	1	0.3	0.2	0	100	1	0	0	0.2	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Goat	YES	0.0	0.1	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	Deep	0.600	1.162		ORG	1.00	1.000	0.820	0.0	0.1	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.820	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	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.13	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.39	2.25	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.39	2.25	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	5.20	3.06	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											3.3	3.3	2.36	4.72	1.74	2.47	Note 45
Year	N NH3		ACCORDING TO	IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											4.4	4.4	0.04		0.04		Note 45
1-10	N leach		FIRST YEAR	0.1203	0.0636		TOTAL N AMOUNTS IN KG AND % LEACHED											92.4	92.4	2.31		0.69		Note 45
			TOTAL	0.1572	0.0825		TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					1.4375		0.7542	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	61	30.0	2.9	0.0	0.0	0.0	64	27.1	1.89	3.61	1.38	1.91	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	Milk/meat	6				10.1	Graz	0.0	1.70	0.0200	0.51	0.0100	Note 49
Year	N	64	1	27.1	27.1	0	100	11	0	0	25.2	61	3.7	0.4	0.0	0.0	0.0	64	3.3	0.41	0.97	0.32	0.50	Note 47
2	Vol/NH3	Goat	YES	0.0	1.9	NON	100.00	WWH	1.000	NO	21.6	Goat	0.67				0.0	Goat	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.855	0.0	21.6	Milk/meat	6				2.6	Graz	0.0	0.54	0.0200	0.16	0.0100	Note 49
Year	N	64	1	3.3	3.3	0	100	11	0	0	3.1	61	0.4	0.0	0.0	0.0	0.0	64	0.4	0.05	0.12	0.04	0.06	Note 47
3	Vol/NH3	Goat	YES	0.0	0.2	NON	100.00	WWH	1.000	NO	2.6	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	0.855	0.0	2.6	Milk/meat	6				0.3	Graz	0.0	0.07	0.0200	0.02	0.0100	Note 49
Year	N	64	1	0.4	0.4	0	100	1	0	0	0.4	61	0.1	0.0	0.0	0.0	0.0	64	0.0	0.01	0.01	0.00	0.01	Note 47
4	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	SBA	1.000	NO	0.3	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.855	0.0	0.3	Milk/meat	6				0.0	Graz	0.0	0.01	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.855	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	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.13	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.72	2.47	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.72	2.47	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	5.52	3.28	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											1.7	1.7	1.72	4.00	1.43	2.19	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							11.6	11.5	0.12		0.12		Note 45
1-10 N leach			FIRST YEAR		0.1022		0.0545				TOTAL N AMOUNTS IN KG AND % LEACHED							86.8	86.7	2.17		0.65		Note 45
			TOTAL		0.1334		0.0732				TOTAL N AMOUNTS IN KG AND %							100.1	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					2.3050		1.2637	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	71	0.0	0.0	30.0	0.0	0.0	71	30.0	1.35	3.07	1.10	1.64	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	high N	71				10.1	High	0.0	1.70	0.0000	0.51	0.0000	Note 49
Year	N	71	1	30.0	30.0	0	100	11	0	0	22.5	21	6.3	1.5	0.0	0.0	0.0	21	4.8	0.31	0.80	0.28	0.48	Note 47
2	Vol/NH3	Green	YES	0.0	7.5	NON	100.00	WWH	1.000	NO	16.2	Cattle	0.67				0.0	Cattle	0.4	0.08	0.0125	0.08	0.0100	Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.720	0.0	16.2	Dairy	2				2.3	Liquid	0.0	0.41	0.0010	0.12	0.0050	Note 49
Year	N	21	1	4.5	4.4	0	100	11	0	0	3.3	21	0.9	0.2	0.0	0.0	0.0	21	0.7	0.05	0.12	0.04	0.07	Note 47
3	Vol/NH3	Cattle	YES	0.1	1.1	NON	100.00	WWH	1.000	NO	2.4	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.720	0.0	2.4	Dairy	2				0.3	Liquid	0.0	0.06	0.0010	0.02	0.0050	Note 49
Year	N	21	1	0.7	0.6	0	100	1	0	0	0.5	21	0.1	0.0	0.0	0.0	0.0	21	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	SBA	1.000	NO	0.3	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	0.720	0.0	0.3	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	10	0	0	0.1	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.720	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	59	0	0	0.0	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	0.720	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	0.720	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	0.720	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	0.720	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	0.720	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	0.17	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.29	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.00	2.19	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.00	2.19	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.17	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.92	Total including natural	4.92	3.11	Note 51

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

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

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N							RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				1.0	1.0			1.69	4.01	1.40	2.17	Note 45
Year N NH3							ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				10.8	10.8			0.11		0.11		Note 45
1-10 N leach							FIRST YEAR	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED				88.3	88.3			2.21		0.66		Note 45
							TOTAL	0.1336	0.0723	TOTAL N AMOUNTS IN KG AND %				100.0	100.0							Note 45
N2O-N/N in food/beverage/fuel/other																			4.0385		2.1848	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	72	0.0	0.0	30.0	0.0	0.0	72	30.0	1.35	3.07	1.10	1.64	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	low N	72				10.1	Low	0.0	1.70	0.0000	0.51	0.0000	Note 49
Year	N	72	1	30.0	30.0	0	100	11	0	0	22.5	21	3.6	0.8	0.0	0.0	0.0	21	2.8	0.31	0.86	0.27	0.49	Note 47
2	Vol/NH3	Green	YES	0.0	7.5	NON	100.00	WWH	1.000	NO	18.9	Cattle	0.67				0.0	Cattle	0.2	0.08	0.0125	0.08	0.0100	Note 48
	N leach	Low	0.533	1.000		ORG	1.00	1.000	0.840	0.0	18.9	Dairy	2				2.3	Liquid	0.0	0.47	0.0010	0.14	0.0050	Note 49
Year	N	21	1	2.6	2.5	0	100	11	0	0	1.9	21	0.5	0.1	0.0	0.0	0.0	21	0.4	0.03	0.07	0.02	0.04	Note 47
3	Vol/NH3	Cattle	YES	0.1	0.6	NON	100.00	WWH	1.000	NO	1.4	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	0.720	0.0	1.4	Dairy	2				0.2	Liquid	0.0	0.03	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.4	0.4	0	100	1	0	0	0.3	21	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	SBA	1.000	NO	0.2	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.720	0.0	0.2	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	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	0.720	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	0.720	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	0.840	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	0.720	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	0.720	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	0.720	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	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.16	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.01	2.17	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	4.01	2.17	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.71	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	4.84	3.00	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE 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	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N							RATIO OF N2O-N TO N IN FIRST CROP			TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				30.0	30.0				1.35	3.07	1.10	1.64	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	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED				67.8	67.8				1.70		0.51		Note 45
							TOTAL	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND %				100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1022		0.0545	Note 46
Year	N	1	1	100.0	100.0	0	100	59	0	0	97.8	8	0.0	0.0	0.0	30.0	0.0	0	0.0	1.35	3.07	1.10	1.64	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	beverage	8				10.1		0.0	1.70	0.0000	0.51	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	Current crops	3.07	1.64	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	3.07	1.64	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	3.78	2.35	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE MAIZE COBS FOR BIOETHANOL AND FUEL Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR FUEL Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							30.0	30.0	1.35	3.07	1.10	1.64	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		0.1022		0.0545		TOTAL N AMOUNTS IN KG AND % LEACHED					67.8	67.8	1.70		0.51		Note 45
			TOTAL		0.1022		0.0545		TOTAL N AMOUNTS IN KG AND %					100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.1022		0.0545	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	30.0	0	0.0	1.35	3.07	1.10	1.64 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	other	9				10.1		0.0	1.70	0.0000	0.51	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	3.07	1.64	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	3.07	1.64	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	3.78	2.35	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																		1.35	3.07	1.10	1.64	Note 45
Year	N NH3																		0.02		0.02		Note 45
1-10	N leach																		1.70		0.51		Note 45
																							Note 45

RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO IPCC 1996 IPCC 2006
FIRST YEAR 0.1022 0.0545
TOTAL 0.1022 0.0545

TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED 30.0 30.0
TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3 2.2 2.2
TOTAL N AMOUNTS IN KG AND % LEACHED 67.8 67.8
TOTAL N AMOUNTS IN KG AND % 100.0 100.0

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

Year																							
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	1.35	3.07	1.10	1.64 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	moved	0				10.1		0.0	1.70	0.0000	0.51	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	3.07	1.64	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	3.07	1.64	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	3.78	2.35	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	1.35	3.82	1.10	1.86	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		0.1272		0.0620				TOTAL N AMOUNTS IN KG AND % LEACHED							97.8	97.8	2.45		0.73		Note 45
			TOTAL		0.1272		0.0620				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	30.0	1.35	3.82	1.10	1.86	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	MCB	1.000	NO	67.8	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	0.693	0.0	67.8	in field	0				10.1		30.0	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	3.82	1.86	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.82	1.86	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	4.53	2.57	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				9.87	9.84	1.61	3.71	1.41	2.12	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				10.40	10.36	0.10		0.10		Note 45
1-10 N leach	FIRST YEAR	0.1034	0.0583	TOTAL N AMOUNTS IN KG AND % LEACHED				80.10	79.80	2.00		0.60		Note 45
	TOTAL	0.1238	0.0706	TOTAL N AMOUNTS IN KG AND %				100.37	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.3761		0.2144	Note 46
									Total/year 1					
Area with crop, ha								0.85	1.19					Note 50
Natural background emissions, kg N2O-N/ha:								0.85			4.56		2.96	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				9.74	9.71	1.82	3.92	1.40	2.11	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				10.83	10.79	0.11		0.11		Note 45
1-10 N leach	FIRST YEAR	0.1096	0.0582	TOTAL N AMOUNTS IN KG AND % LEACHED				79.80	79.50	1.99		0.60		Note 45
	TOTAL	0.1307	0.0704	TOTAL N AMOUNTS IN KG AND %				100.37	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.4024		0.2167	Note 46
									Total/year 1					
Area with crop, ha								0.83	1.16					Note 50
Natural background emissions, kg N2O-N/ha:								0.83			4.75		2.94	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				9.31	9.00	1.96	4.09	1.36	2.11	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				15.52	15.00	0.16		0.16		Note 45
1-10 N leach	FIRST YEAR	0.1160	0.0583	TOTAL N AMOUNTS IN KG AND % LEACHED				78.62	76.00	1.97		0.59		Note 45
	TOTAL	0.1362	0.0702	TOTAL N AMOUNTS IN KG AND %				103.45	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.4389		0.2263	Note 46
									Total/year 1					
Area with crop, ha								0.78	1.09					Note 50
Natural background emissions, kg N2O-N/ha:								0.78			4.87		2.89	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				9.50	9.50	2.13	4.33	1.83	2.52	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				3.86	3.86	0.04		0.04		Note 45
1-10 N leach	FIRST YEAR	0.1164	0.0687	TOTAL N AMOUNTS IN KG AND % LEACHED				86.64	86.64	2.17		0.65		Note 45
	TOTAL	0.1444	0.0839	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.4558		0.2647	Note 46
									Total/year 1					
Area with crop, ha								0.79	1.10					Note 50
Natural background emissions, kg N2O-N/ha:								0.79			5.12		3.30	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			8.76	8.73	1.62	3.75	1.43	2.14 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			10.85	10.81	0.11		0.11	Note 45
1-10 N leach	FIRST YEAR	0.1035	0.0585	TOTAL N AMOUNTS IN KG AND % LEACHED			80.77	80.46	2.02		0.61	Note 45
	TOTAL	0.1250	0.0714	TOTAL N AMOUNTS IN KG AND %			100.39	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4279		0.2446 Note 46
							Total/year 1					
Area with crop, ha							0.86	1.20				Note 50
Natural background emissions, kg N2O-N/ha:							0.86			4.60		3.00 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			8.64	8.60	1.84	3.97	1.42	2.14 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			11.31	11.26	0.11		0.11	Note 45
1-10 N leach	FIRST YEAR	0.1100	0.0584	TOTAL N AMOUNTS IN KG AND % LEACHED			80.45	80.13	2.01		0.60	Note 45
	TOTAL	0.1322	0.0712	TOTAL N AMOUNTS IN KG AND %			100.39	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.4592		0.2474 Note 46
							Total/year 1					
Area with crop, ha							0.84	1.17				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.80		2.97 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			8.23	7.95	2.00	4.14	1.38	2.13 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			16.21	15.65	0.16		0.16	Note 45
1-10 N leach	FIRST YEAR	0.1166	0.0584	TOTAL N AMOUNTS IN KG AND % LEACHED			79.18	76.41	1.98		0.59	Note 45
	TOTAL	0.1379	0.0710	TOTAL N AMOUNTS IN KG AND %			103.63	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.5026		0.2588 Note 46
							Total/year 1					
Area with crop, ha							0.78	1.10				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.92		2.92 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			8.41	8.41	2.17	4.40	1.87	2.56 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			3.95	3.95	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.1171	0.0694	TOTAL N AMOUNTS IN KG AND % LEACHED			87.64	87.64	2.19		0.66	Note 45
	TOTAL	0.1466	0.0854	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.5227		0.3045 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.11				Note 50
Natural background emissions, kg N2O-N/ha:							0.79			5.19		3.35 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			14.08	14.08	1.54	3.54	1.33	2.00 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			9.50	9.50	0.10		0.10	Note 45
1-10 N leach	FIRST YEAR	0.1035	0.0578	TOTAL N AMOUNTS IN KG AND % LEACHED			76.41	76.41	1.91		0.57	Note 45
	TOTAL	0.1180	0.0665	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2514		0.1417 Note 46
							Total/year 1					
Area with crop, ha							0.82	1.14				Note 50
Natural background emissions, kg N2O-N/ha:							0.82			4.36		2.81 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			13.56	13.51	1.64	3.63	1.29	1.97 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			12.10	12.06	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.1083	0.0579	TOTAL N AMOUNTS IN KG AND % LEACHED			74.71	74.44	1.87		0.56	Note 45
	TOTAL	0.1210	0.0656	TOTAL N AMOUNTS IN KG AND %			100.37	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2677		0.1453 Note 46
							Total/year 1					
Area with crop, ha							0.78	1.09				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.41		2.75 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			13.31	13.08	1.72	3.70	1.25	1.96 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			15.44	15.18	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.1124	0.0581	TOTAL N AMOUNTS IN KG AND % LEACHED			73.01	71.75	1.83		0.55	Note 45
	TOTAL	0.1235	0.0652	TOTAL N AMOUNTS IN KG AND %			101.76	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2784		0.1470 Note 46
							Total/year 1					
Area with crop, ha							0.77	1.07				Note 50
Natural background emissions, kg N2O-N/ha:							0.77			4.47		2.72 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			14.15	14.15	2.00	4.09	1.71	2.36 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	0.1139	0.0662	TOTAL N AMOUNTS IN KG AND % LEACHED			82.28	82.28	2.06		0.62	Note 45
	TOTAL	0.1363	0.0786	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2890		0.1667 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.12				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			4.89		3.16 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					16.71	16.71	1.51	3.48	1.30	1.94	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					7.63	7.63	0.08		0.08		Note 45
1-10 N leach	FIRST YEAR	0.1031	0.0572	TOTAL N AMOUNTS IN KG AND % LEACHED					75.66	75.66	1.89		0.57		Note 45
	TOTAL	0.1159	0.0647	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.2082		0.1161	Note 46
									Total/year 1						
Area with crop, ha									0.79	1.11					Note 50
Natural background emissions, kg N2O-N/ha:									0.79			4.27		2.73	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					16.29	16.29	1.58	3.51	1.25	1.90	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					10.37	10.37	0.10		0.10		Note 45
1-10 N leach	FIRST YEAR	0.1073	0.0576	TOTAL N AMOUNTS IN KG AND % LEACHED					73.34	73.34	1.83		0.55		Note 45
	TOTAL	0.1171	0.0634	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.2156		0.1167	Note 46
									Total/year 1						
Area with crop, ha									0.77	1.08					Note 50
Natural background emissions, kg N2O-N/ha:									0.77			4.28		2.67	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					15.82	15.81	1.61	3.54	1.21	1.88	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					11.80	11.79	0.12		0.12		Note 45
1-10 N leach	FIRST YEAR	0.1101	0.0579	TOTAL N AMOUNTS IN KG AND % LEACHED					72.49	72.40	1.81		0.54		Note 45
	TOTAL	0.1180	0.0626	TOTAL N AMOUNTS IN KG AND %					100.12	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.2237		0.1186	Note 46
									Total/year 1						
Area with crop, ha									0.74	1.04					Note 50
Natural background emissions, kg N2O-N/ha:									0.74			4.28		2.62	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					16.38	16.38	1.87	3.91	1.58	2.22	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					3.30	3.30	0.03		0.03		Note 45
1-10 N leach	FIRST YEAR	0.1120	0.0643	TOTAL N AMOUNTS IN KG AND % LEACHED					80.31	80.31	2.01		0.60		Note 45
	TOTAL	0.1302	0.0740	TOTAL N AMOUNTS IN KG AND %					100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												0.2384		0.1355	Note 46
Area with crop, ha	Total/year 1								0.76	1.07					Note 50
Natural background emissions, kg N2O-N/ha:									0.76			4.67		2.98	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				8.32	8.32	1.61	3.74	1.42	2.13	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				11.06	11.06	0.11		0.11		Note 45
1-10 N leach	FIRST YEAR	0.1037	0.0587	TOTAL N AMOUNTS IN KG AND % LEACHED				80.62	80.62	2.02		0.60		Note 45
	TOTAL	0.1246	0.0711	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.4495		0.2565	Note 46
									Total/year 1					
Area with crop, ha								0.84	1.18					Note 50
Natural background emissions, kg N2O-N/ha:								0.84			4.58		2.97	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				7.98	7.98	1.71	3.78	1.33	2.06	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				15.32	15.32	0.15		0.15		Note 45
1-10 N leach	FIRST YEAR	0.1101	0.0593	TOTAL N AMOUNTS IN KG AND % LEACHED				76.70	76.70	1.92		0.58		Note 45
	TOTAL	0.1261	0.0688	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.4739		0.2584	Note 46
									Total/year 1					
Area with crop, ha								0.80	1.12					Note 50
Natural background emissions, kg N2O-N/ha:								0.80			4.58		2.86	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				7.62	7.61	1.76	3.82	1.28	2.02	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				17.36	17.33	0.17		0.17		Note 45
1-10 N leach	FIRST YEAR	0.1144	0.0598	TOTAL N AMOUNTS IN KG AND % LEACHED				75.20	75.06	1.88		0.56		Note 45
	TOTAL	0.1272	0.0672	TOTAL N AMOUNTS IN KG AND %				100.19	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.5006		0.2645	Note 46
									Total/year 1					
Area with crop, ha								0.76	1.06					Note 50
Natural background emissions, kg N2O-N/ha:								0.76			4.57		2.78	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				8.06	8.06	2.18	4.42	1.88	2.58	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				3.98	3.98	0.04		0.04		Note 45
1-10 N leach	FIRST YEAR	0.1174	0.0697	TOTAL N AMOUNTS IN KG AND % LEACHED				87.97	87.97	2.20		0.66		Note 45
	TOTAL	0.1474	0.0859	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.5488		0.3200	Note 46
									Total/year 1					
Area with crop, ha								0.79	1.11					Note 50
Natural background emissions, kg N2O-N/ha:								0.79			5.21		3.37	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				5.03	4.82	2.28	4.66	1.57	2.33 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				6.76	6.48	0.07		0.07	Note 45
1-10 N leach	FIRST YEAR	0.1181	0.0594	TOTAL N AMOUNTS IN KG AND % LEACHED				92.40	88.69	2.31		0.69	Note 45
	TOTAL	0.1552	0.0778	TOTAL N AMOUNTS IN KG AND %				104.18	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.9263		0.4641 Note 46
								Total/year 1					
Area with crop, ha							0.83	1.16					Note 50
Natural background emissions, kg N2O-N/ha:							0.83				5.48		3.16 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				4.82	4.82	2.30	4.62	1.41	2.13 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				4.24	4.24	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.1194	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED				90.94	90.94	2.27		0.68	Note 45
	TOTAL	0.1540	0.0712	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.9590		0.4430 Note 46
								Total/year 1					
Area with crop, ha							0.80	1.12					Note 50
Natural background emissions, kg N2O-N/ha:							0.80				5.42		2.94 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				3.21	3.08	2.13	4.39	1.45	2.25 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				17.55	16.85	0.18		0.18	Note 45
1-10 N leach	FIRST YEAR	0.1189	0.0597	TOTAL N AMOUNTS IN KG AND % LEACHED				83.40	80.07	2.09		0.63	Note 45
	TOTAL	0.1462	0.0750	TOTAL N AMOUNTS IN KG AND %				104.16	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.3668		0.7008 Note 46
								Total/year 1					
Area with crop, ha							0.81	1.13					Note 50
Natural background emissions, kg N2O-N/ha:							0.81				5.20		3.06 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				3.28	3.28	2.36	4.72	1.74	2.47 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				4.36	4.36	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.1203	0.0636	TOTAL N AMOUNTS IN KG AND % LEACHED				92.36	92.36	2.31		0.69	Note 45
	TOTAL	0.1572	0.0825	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											1.4375		0.7542 Note 46
								Total/year 1					
Area with crop, ha							0.81	1.13					Note 50
Natural background emissions, kg N2O-N/ha:							0.81				5.52		3.28 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					1.74	1.74	1.72	4.00	1.43	2.19	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					11.56	11.55	0.12		0.12		Note 45
1-10 N leach	FIRST YEAR	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED					86.79	86.72	2.17		0.65		Note 45
	TOTAL	0.1334	0.0732	TOTAL N AMOUNTS IN KG AND %					100.08	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												2.3050		1.2637	Note 46
										Total/year 1					
Area with crop, ha									0.92	1.29					Note 50
Natural background emissions, kg N2O-N/ha:									0.92			4.92		3.11	Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	6.30	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	30.00	Note 47
Relative value of green manure, %	21.00	

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					0.99	0.99	1.69	4.01	1.40	2.17	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					10.76	10.76	0.11		0.11		Note 45
1-10 N leach	FIRST YEAR	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED					88.29	88.25	2.21		0.66		Note 45
	TOTAL	0.1336	0.0723	TOTAL N AMOUNTS IN KG AND %					100.05	100.00					Note 45
N2O-N/N in food/beverage/fuel/other												4.0385		2.1848	Note 46
										Total/year 1					
Area with crop, ha									0.83	1.16					Note 50
Natural background emissions, kg N2O-N/ha:									0.83			4.84		3.00	Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	3.60	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	30.00	Note 47
Relative value of green manure, %	12.00	

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			30.00	30.00	1.35	3.07	1.10	1.64	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	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED			67.80	67.80	1.70		0.51		Note 45
	TOTAL	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1022		0.0545	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.78		2.35	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			30.00	30.00	1.35	3.07	1.10	1.64	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	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED			67.80	67.80	1.70		0.51		Note 45
	TOTAL	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1022		0.0545	Note 46
								Total/year 1					
Area with crop, ha						0.71	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.71				3.78		2.35	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			30.00	30.00	1.35	3.07	1.10	1.64	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	0.1022	0.0545	TOTAL N AMOUNTS IN KG AND % LEACHED			67.80	67.80	1.70		0.51		Note 45
	TOTAL	0.1022	0.0545	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				3.78		2.35	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	1.35	3.82	1.10	1.86	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	0.1272	0.0620	TOTAL N AMOUNTS IN KG AND % LEACHED			97.80	97.80	2.45		0.73		Note 45
	TOTAL	0.1272	0.0620	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				4.53		2.57	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	0.1034	0.1171	0.0582	0.0694
TOTAL	0.1238	0.1466	0.0702	0.0854

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.71	4.40	2.11	2.56

	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other				
	0.3761	0.5227	0.2144	0.3045

	MIN	MAX	MIN	MAX				
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.78	0.86	0.78	1.11	4.56	5.19	2.89	3.35

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	0.1035	0.1139	0.0578	0.0662
TOTAL	0.1180	0.1363	0.0652	0.0786

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.54	4.09	1.96	2.36

	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other				
	0.2514	0.2890	0.1417	0.1667

	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	0.82	0.77	0.82	4.36	4.89	2.72	3.16

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	0.1031	0.1174	0.0572	0.0697
TOTAL	0.1159	0.1474	0.0626	0.0859

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.48	4.42	1.88	2.58

	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other				
	0.2082	0.5488	0.1161	0.3200

	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:	0.74	0.84	0.74	0.84	4.27	5.21	2.62	3.37

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	0.1181	0.1203	0.0545	0.0636
TOTAL	0.1462	0.1572	0.0712	0.0825

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.39	4.72	2.13	2.47

	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other				
	0.9263	1.4375	0.4430	0.7542

	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:	0.80	0.83	0.80	0.83	5.20	5.52	2.94	3.28

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	0.1031	0.1203	0.0545	0.0697
TOTAL	0.1159	0.1572	0.0626	0.0859

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.48	4.72	1.88	2.58

	IPCC 1996 MIN	IPCC 1996 MAX	IPCC 2006 MIN	IPCC 2006 MAX
N2O-N/N in food/beverage/fuel/other				
	0.2082	1.4375	0.1161	0.7542

	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:	0.74	0.86	0.74	1.11	4.27	5.52	2.62	3.37