C1 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES AND WITH NORMAL IPCC N2O EMISSION VALUES | BASIC VALUES | By Jacob Bugge Version 310308, | Available at www.ppo.bugge.com See terms of use on Sheet A | C1

Note 33

Crop, fodder/food	WRS	WWH	WWB	WBA	RYE	TRI	SBA	SWH	OAT	MCC	MCW	GRO	GCR	CGR	GHP	GRP	CGR0	CONC	
Crop #	22	11	13	10	14	16	1	2	3	5	216	263	260	261	2520	252	2610	9999	Note 1
<NUE/e>	0.64	0.64	0.54	0.60	0.59	0.53	0.60	0.58	0.73	0.62	1.05	0.83	1.33	11.68	0.44	0.81	-2.75	1.00	Note 16
N digestibility, crop/crop part with N	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	0.07	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	0.15	0.11	0.09	0.12	0.17	0.13	0.12	0.07	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	160	309	199	21	132	132	-87		Note 14

Crop, PPO/biodiesel/bioethanol	WRB	WWHB	WWBB	WBB	RYB	TRB	SBB	SWB	OAB	MCB	
Crop #	229	119	139	109	149	169	19	29	39	59	Note 1
<NUE/e>	0.64	0.64	0.54	0.60	0.59	0.53	0.60	0.58	0.73	0.62	Note 16
N digestibility, crop part with N	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	0.07	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	0.15	0.11	0.09	0.12	0.17	0.13	0.12	0.07	0.13	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	0.03	0.11	0.09	0.08	0.15	0.12	0.09	0.12	0.11	0.21	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	0.47	11.96	0.00	0.00	-4.05		Note 34

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

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

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

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

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

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP					TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED						39.4	39.1						Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						22.3	22.1			0.22		0.22		Note 45
1-10	N leach		FIRST YEAR		0.0294	0.0215		TOTAL N AMOUNTS IN KG AND % LEACHED						39.1	38.8			0.98		0.29		Note 45
			TOTAL		0.0445	0.0331		TOTAL N AMOUNTS IN KG AND %						100.9	100.0							Note 45
N2O-N/N in food/beverage/fuel/other																			0.0801		0.0595	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	21	59.6	17.6	0.0	0.0	11.3	21	42.0	1.36	2.08	1.27	1.52 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	3.4	0.06	0.0125	0.06	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Dairy	2				7.5	Liquid	0.0	0.67	0.0010	0.20	0.0050 Note 49
Year	N	21	1	39.3	38.4	0	100	11	0	1	28.8	21	17.3	4.1	0.0	0.0	3.2	21	13.2	0.41	0.73	0.39	0.57 Note 47
2	Vol/NH3	Cattle	YES	0.9	9.6	NON	100.00	WWH	1.000	YES	8.3	Cattle	0.67				0.0	Cattle	1.1	0.12	0.0125	0.12	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	3.2	8.3	Dairy	2				3.1	Liquid	0.0	0.21	0.0010	0.06	0.0050 Note 49
Year	N	21	1	12.3	12.1	0	100	11	0	1	9.1	21	5.4	1.3	0.0	0.0	1.0	21	4.2	0.13	0.23	0.12	0.18 Note 47
3	Vol/NH3	Cattle	YES	0.3	3.0	NON	100.00	WWH	1.000	YES	2.6	Cattle	0.67				0.0	Cattle	0.3	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	1.0	2.6	Dairy	2				1.0	Liquid	0.0	0.07	0.0010	0.02	0.0050 Note 49
Year	N	21	1	3.9	3.8	0	100	11	0	1	2.8	21	1.7	0.4	0.0	0.0	0.3	21	1.3	0.04	0.07	0.04	0.06 Note 47
4	Vol/NH3	Cattle	YES	0.1	0.9	NON	100.00	WWH	1.000	YES	0.8	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	0.400	0.3	0.8	Dairy	2				0.3	Liquid	0.0	0.02	0.0010	0.01	0.0050 Note 49
Year	N	21	1	1.2	1.2	0	100	1	0	1	0.9	21	0.5	0.1	0.0	0.0	0.1	21	0.4	0.01	0.02	0.01	0.02 Note 47
5	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	SBA	1.000	YES	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	0.443	0.1	0.3	Dairy	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	21	1	0.4	0.4	0	100	109	0	1	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
6	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.444	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	21	1	0.1	0.1	0	100	11	0	1	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
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.443	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	0.68	0.22	0.07	0.02	0.01	0.00	0.00	0.00	0.00	0.00	1.01	1.48	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	3.16	2.35	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.16	2.35	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.22	0.07	0.02	0.01	0.00	0.00	0.00	0.00	0.00	1.01 Total including natural	4.16	3.35	Note 51

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

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED											38.2	37.9	2.44	3.66	1.79	2.32 Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											22.8	22.6	0.23		0.23	Note 45
1-10	N leach		FIRST YEAR		0.0346	0.0214	TOTAL N AMOUNTS IN KG AND % LEACHED											39.8	39.5	1.00		0.30	Note 45
			TOTAL		0.0517	0.0327	TOTAL N AMOUNTS IN KG AND %											100.9	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.0958		0.0606 Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	21	59.6	17.6	0.0	0.0	11.3	22	42.0	1.74	2.45	1.27	1.52 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	2.1	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Dairy	2				7.5	Sep	0.0	0.67	0.0105	0.20	0.0050 Note 49
Year	N	22	1	40.5	37.1	0	100	11	0	1	27.8	21	15.5	3.6	0.0	0.0	3.1	22	11.9	0.50	0.87	0.37	0.57 Note 47
2	Vol/NH3	Cattle	YES	3.4	9.3	NON	100.00	WWH	1.000	YES	9.3	Cattle	0.67				0.0	Cattle	0.6	0.13	0.0125	0.13	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	3.1	9.3	Dairy	2				3.0	Sep	0.0	0.23	0.0105	0.07	0.0050 Note 49
Year	N	22	1	11.4	10.5	0	100	11	0	1	7.8	21	4.4	1.0	0.0	0.0	0.9	22	3.3	0.14	0.24	0.10	0.16 Note 47
3	Vol/NH3	Cattle	YES	1.0	2.6	NON	100.00	WWH	1.000	YES	2.6	Cattle	0.67				0.0	Cattle	0.2	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	0.9	2.6	Dairy	2				0.8	Sep	0.0	0.07	0.0105	0.02	0.0050 Note 49
Year	N	22	1	3.2	3.0	0	100	11	0	1	2.2	21	1.2	0.3	0.0	0.0	0.2	22	0.9	0.04	0.07	0.03	0.05 Note 47
4	Vol/NH3	Cattle	YES	0.3	0.7	NON	100.00	WWH	1.000	YES	0.7	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	0.443	0.2	0.7	Dairy	2				0.2	Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year	N	22	1	0.9	0.8	0	100	1	0	1	0.6	21	0.3	0.1	0.0	0.0	0.1	22	0.2	0.01	0.02	0.01	0.01 Note 47
5	Vol/NH3	Cattle	YES	0.1	0.2	NON	100.00	SBA	1.000	YES	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	0.483	0.1	0.2	Dairy	2				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.2	0.2	0	100	109	0	1	0.2	21	0.1	0.0	0.0	0.0	0.0	22	0.1	0.00	0.01	0.00	0.00 Note 47
6	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.483	0.0	0.1	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.1	0.1	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.483	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	0.68	0.20	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.96	1.41	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.66	2.32	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.66	2.32	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.20	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.96 Total including natural	4.62	3.28	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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	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						34.7	32.2				2.67	4.02	1.64	2.26	Note 45
Year N NH3			ACCORDING TO	IPCC 1996	IPCC 2006			TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						31.4	29.2				0.31		0.31		Note 45
1-10 N leach			FIRST YEAR	0.0399	0.0214			TOTAL N AMOUNTS IN KG AND % LEACHED						41.5	38.6				1.04		0.31		Note 45
			TOTAL	0.0567	0.0319			TOTAL N AMOUNTS IN KG AND %						107.6	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1159		0.0653	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	21	59.6	17.6	0.0	0.0	11.3	23	42.0	2.11	2.83	1.27	1.52 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	2.5	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Dairy	2				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050 Note 49
Year	N	23	1	45.8	32.0	0	100	11	0	1	24.0	21	9.3	2.2	0.0	0.0	2.7	23	7.1	0.47	0.99	0.31	0.62 Note 47
2	Vol/NH3	Cattle	YES	13.7	8.0	NON	100.00	WWH	1.000	YES	12.1	Cattle	0.67				0.0	Cattle	0.4	0.22	0.0125	0.22	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	2.7	12.1	Dairy	2				2.6	Deep	0.0	0.30	0.0200	0.09	0.0050 Note 49
Year	N	23	1	7.7	5.4	0	100	11	0	1	4.1	21	1.6	0.4	0.0	0.0	0.4	23	1.2	0.08	0.17	0.05	0.10 Note 47
3	Vol/NH3	Cattle	YES	2.3	1.4	NON	100.00	WWH	1.000	YES	2.0	Cattle	0.67				0.0	Cattle	0.1	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	0.4	2.0	Dairy	2				0.4	Deep	0.0	0.05	0.0200	0.02	0.0050 Note 49
Year	N	23	1	1.3	0.9	0	100	11	0	1	0.7	21	0.3	0.1	0.0	0.0	0.1	23	0.2	0.01	0.03	0.01	0.02 Note 47
4	Vol/NH3	Cattle	YES	0.4	0.2	NON	100.00	WWH	1.000	YES	0.3	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	0.614	0.1	0.3	Dairy	2				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	23	1	0.2	0.2	0	100	1	0	1	0.1	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Cattle	YES	0.1	0.0	NON	100.00	SBA	1.000	YES	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	0.642	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	109	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.642	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.642	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	0.68	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.21	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O	Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.02	2.26 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.02	2.26 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	4.84	3.09 Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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	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													38.1	38.1	3.09	4.55	2.72	3.20	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							6.0	6.0	0.06		0.06		Note 45
1-10	N leach		FIRST YEAR		0.0402		0.0301				TOTAL N AMOUNTS IN KG AND % LEACHED							56.0	56.0	1.40		0.42		Note 45
			TOTAL		0.0642		0.0451				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.1195		0.0840	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	21	59.6	17.6	0.0	0.0	11.3	24	42.0	2.16	2.85	1.91	2.14	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Dairy	2				7.5	Graz	0.0	0.67	0.0200	0.20	0.0200	Note 49
Year	N	24	1	42.0	42.0	0	100	11	0	1	39.1	21	12.1	2.9	0.0	0.0	4.3	24	9.3	0.73	1.32	0.63	0.83	Note 47
2	Vol/NH3	Cattle	YES	0.0	2.9	NON	100.00	WWH	1.000	YES	22.6	Cattle	0.67				0.0	Cattle	0.0	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	4.3	22.6	Dairy	2				4.2	Graz	0.0	0.57	0.0200	0.17	0.0200	Note 49
Year	N	24	1	9.3	9.3	0	100	11	0	1	8.6	21	2.7	0.6	0.0	0.0	1.0	24	2.1	0.16	0.29	0.14	0.18	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.7	NON	100.00	WWH	1.000	YES	5.0	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	0.689	1.0	5.0	Dairy	2				0.9	Graz	0.0	0.12	0.0200	0.04	0.0200	Note 49
Year	N	24	1	2.1	2.1	0	100	11	0	1	1.9	21	0.6	0.1	0.0	0.0	0.2	24	0.5	0.04	0.06	0.03	0.04	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WWH	1.000	YES	1.1	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	0.689	0.2	1.1	Dairy	2				0.2	Graz	0.0	0.03	0.0200	0.01	0.0200	Note 49
Year	N	24	1	0.5	0.5	0	100	1	0	1	0.4	21	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.01	0.01	0.01	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.3	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	0.711	0.0	0.3	Dairy	2				0.0	Graz	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.1	0.1	0	100	109	0	1	0.1	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.1	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.712	0.0	0.1	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.711	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	0.68	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.24	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.55	3.20	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.55	3.20	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	5.39	4.04	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											37.3	36.9	2.00	3.23	1.88	2.42	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											23.7	23.5	0.24		0.24		Note 45
1-10	N leach		FIRST YEAR		0.0295	0.0216	TOTAL N AMOUNTS IN KG AND % LEACHED											40.0	39.6	1.00		0.30		Note 45
			TOTAL		0.0456	0.0341	TOTAL N AMOUNTS IN KG AND %											101.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0867		0.0648	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	22	59.6	15.5	0.0	0.0	11.3	21	44.1	1.36	2.09	1.27	1.53	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	3.5	0.06	0.0125	0.06	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Beef	2				7.5	Liquid	0.0	0.67	0.0010	0.20	0.0050	Note 49
Year	N	21	1	41.2	40.3	0	100	11	0	1	30.2	22	18.1	3.8	0.0	0.0	3.3	21	14.4	0.43	0.77	0.41	0.60	Note 47
2	Vol/NH3	Cattle	YES	0.9	10.1	NON	100.00	WWH	1.000	YES	8.8	Cattle	0.67				0.0	Cattle	1.1	0.12	0.0125	0.12	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	3.3	8.8	Beef	2				3.3	Liquid	0.0	0.22	0.0010	0.07	0.0050	Note 49
Year	N	21	1	13.4	13.1	0	100	11	0	1	9.9	22	5.9	1.2	0.0	0.0	1.1	21	4.7	0.14	0.25	0.13	0.19	Note 47
3	Vol/NH3	Cattle	YES	0.3	3.3	NON	100.00	WWH	1.000	YES	2.9	Cattle	0.67				0.0	Cattle	0.4	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	1.1	2.9	Beef	2				1.1	Liquid	0.0	0.07	0.0010	0.02	0.0050	Note 49
Year	N	21	1	4.4	4.3	0	100	11	0	1	3.2	22	1.9	0.4	0.0	0.0	0.4	21	1.5	0.05	0.08	0.04	0.06	Note 47
4	Vol/NH3	Cattle	YES	0.1	1.1	NON	100.00	WWH	1.000	YES	0.9	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	0.4	0.9	Beef	2				0.3	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	21	1	1.4	1.4	0	100	1	0	1	1.0	22	0.6	0.1	0.0	0.0	0.1	21	0.5	0.01	0.03	0.01	0.02	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	SBA	1.000	YES	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	0.443	0.1	0.3	Beef	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.4	0.4	0	100	109	0	1	0.3	22	0.2	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.01	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.444	0.0	0.1	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	11	0	1	0.1	22	0.1	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	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.443	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	0.68	0.23	0.08	0.02	0.01	0.00	0.00	0.00	0.00	0.00	1.03	1.51	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	3.23	2.42	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.23	2.42	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.23	0.08	0.02	0.01	0.00	0.00	0.00	0.00	0.00	1.03 Total including natural	4.26	3.45	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											36.1	35.8	2.51	3.77	1.84	2.38 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									24.2	23.9	0.24		0.24	Note 45
1-10 N leach			FIRST YEAR		0.0349		0.0216		TOTAL N AMOUNTS IN KG AND % LEACHED									40.7	40.3	1.02		0.31	Note 45
			TOTAL		0.0532		0.0336		TOTAL N AMOUNTS IN KG AND %									100.9	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1043		0.0660	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	22	59.6	15.5	0.0	0.0	11.3	22	44.1	1.76	2.47	1.28	1.53 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	2.2	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Beef	2				7.5	Sep	0.0	0.67	0.0105	0.20	0.0050 Note 49
Year	N	22	1	42.6	38.9	0	100	11	0	1	29.2	22	16.3	3.4	0.0	0.0	3.2	22	12.9	0.53	0.92	0.39	0.61 Note 47
2	Vol/NH3	Cattle	YES	3.6	9.7	NON	100.00	WWH	1.000	YES	9.7	Cattle	0.67				0.0	Cattle	0.6	0.14	0.0125	0.14	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	3.2	9.7	Beef	2				3.2	Sep	0.0	0.24	0.0105	0.07	0.0050 Note 49
Year	N	22	1	12.4	11.4	0	100	11	0	1	8.5	22	4.8	1.0	0.0	0.0	0.9	22	3.8	0.16	0.27	0.11	0.18 Note 47
3	Vol/NH3	Cattle	YES	1.1	2.8	NON	100.00	WWH	1.000	YES	2.8	Cattle	0.67				0.0	Cattle	0.2	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	0.9	2.8	Beef	2				0.9	Sep	0.0	0.07	0.0105	0.02	0.0050 Note 49
Year	N	22	1	3.6	3.3	0	100	11	0	1	2.5	22	1.4	0.3	0.0	0.0	0.3	22	1.1	0.05	0.08	0.03	0.05 Note 47
4	Vol/NH3	Cattle	YES	0.3	0.8	NON	100.00	WWH	1.000	YES	0.8	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	0.3	0.8	Beef	2				0.3	Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year	N	22	1	1.1	1.0	0	100	1	0	1	0.7	22	0.4	0.1	0.0	0.0	0.1	22	0.3	0.01	0.02	0.01	0.02 Note 47
5	Vol/NH3	Cattle	YES	0.1	0.2	NON	100.00	SBA	1.000	YES	0.3	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	0.483	0.1	0.3	Beef	2				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.3	0.3	0	100	109	0	1	0.2	22	0.1	0.0	0.0	0.0	0.0	22	0.1	0.00	0.01	0.00	0.00 Note 47
6	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.483	0.0	0.1	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.1	0.1	0	100	11	0	1	0.1	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.443	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.483	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	0.68	0.21	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.98	1.44	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.77	2.38	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.77	2.38	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.21	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.98 Total including natural	4.75	3.36	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											32.6	30.2	2.74	4.13	1.67	2.32 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									33.1	30.6	0.33		0.33	Note 45
1-10 N leach			FIRST YEAR		0.0405		0.0216		TOTAL N AMOUNTS IN KG AND % LEACHED									42.3	39.2	1.06		0.32	Note 45
			TOTAL		0.0583		0.0327		TOTAL N AMOUNTS IN KG AND %									108.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1268		0.0711 Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	22	59.6	15.5	0.0	0.0	11.3	23	44.1	2.15	2.87	1.28	1.53 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	2.6	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Beef	2				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050 Note 49
Year	N	23	1	48.0	33.6	0	100	11	0	1	25.2	22	9.7	2.0	0.0	0.0	2.8	23	7.7	0.49	1.04	0.32	0.65 Note 47
2	Vol/NH3	Cattle	YES	14.4	8.4	NON	100.00	WWH	1.000	YES	12.7	Cattle	0.67				0.0	Cattle	0.5	0.23	0.0125	0.23	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	2.8	12.7	Beef	2				2.7	Deep	0.0	0.32	0.0200	0.10	0.0050 Note 49
Year	N	23	1	8.4	5.9	0	100	11	0	1	4.4	22	1.7	0.4	0.0	0.0	0.5	23	1.3	0.09	0.18	0.06	0.11 Note 47
3	Vol/NH3	Cattle	YES	2.5	1.5	NON	100.00	WWH	1.000	YES	2.2	Cattle	0.67				0.0	Cattle	0.1	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	0.5	2.2	Beef	2				0.5	Deep	0.0	0.06	0.0200	0.02	0.0050 Note 49
Year	N	23	1	1.5	1.0	0	100	11	0	1	0.8	22	0.3	0.1	0.0	0.0	0.1	23	0.2	0.02	0.03	0.01	0.02 Note 47
4	Vol/NH3	Cattle	YES	0.4	0.3	NON	100.00	WWH	1.000	YES	0.4	Cattle	0.67				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	0.1	0.4	Beef	2				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	23	1	0.3	0.2	0	100	1	0	1	0.1	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.01	0.00	0.00 Note 47
5	Vol/NH3	Cattle	YES	0.1	0.0	NON	100.00	SBA	1.000	YES	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	0.642	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	109	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.642	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.614	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.642	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	0.68	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.22	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O	Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.13	2.32 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.13	2.32 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	4.97	3.15 Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											36.1	36.1	3.20	4.70	2.82	3.31	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006						TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						6.2	6.2	0.06		0.06		Note 45
1-10 N leach			FIRST YEAR		0.0408	0.0307						TOTAL N AMOUNTS IN KG AND % LEACHED						57.7	57.7	1.44		0.43		Note 45
			TOTAL		0.0663	0.0468						TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.1303		0.0918	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	22	59.6	15.5	0.0	0.0	11.3	24	44.1	2.20	2.89	1.95	2.18	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Cattle	0.84				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Beef	2				7.5	Graz	0.0	0.67	0.0200	0.20	0.0200	Note 49
Year	N	24	1	44.1	44.1	0	100	11	0	1	41.0	22	12.8	2.6	0.0	0.0	4.5	24	10.1	0.77	1.39	0.67	0.88	Note 47
2	Vol/NH3	Cattle	YES	0.0	3.1	NON	100.00	WWH	1.000	YES	23.7	Cattle	0.67				0.0	Cattle	0.0	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	4.5	23.7	Beef	2				4.4	Graz	0.0	0.59	0.0200	0.18	0.0200	Note 49
Year	N	24	1	10.1	10.1	0	100	11	0	1	9.4	22	2.9	0.6	0.0	0.0	1.0	24	2.3	0.18	0.32	0.15	0.20	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.7	NON	100.00	WWH	1.000	YES	5.4	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	0.689	1.0	5.4	Beef	2				1.0	Graz	0.0	0.14	0.0200	0.04	0.0200	Note 49
Year	N	24	1	2.3	2.3	0	100	11	0	1	2.2	22	0.7	0.1	0.0	0.0	0.2	24	0.5	0.04	0.07	0.04	0.05	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	WWH	1.000	YES	1.2	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	0.2	1.2	Beef	2				0.2	Graz	0.0	0.03	0.0200	0.01	0.0200	Note 49
Year	N	24	1	0.5	0.5	0	100	1	0	1	0.5	22	0.1	0.0	0.0	0.0	0.1	24	0.1	0.01	0.02	0.01	0.01	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.3	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	0.711	0.1	0.3	Beef	2				0.0	Graz	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.1	0.1	0	100	109	0	1	0.1	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.1	Cattle	0.84				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.712	0.0	0.1	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	11	0	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	22	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.711	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	0.68	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.25	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.70	3.31	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	4.70	3.31	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	5.55	4.17	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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			47.0	47.0				1.75	2.79	1.59	2.04	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			19.1	19.1				0.19		0.19		Note 45
1-10 N leach			FIRST YEAR		0.0295		0.0211				TOTAL N AMOUNTS IN KG AND % LEACHED			34.0	34.0				0.85		0.25		Note 45
			TOTAL		0.0394		0.0287				TOTAL N AMOUNTS IN KG AND %			100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.0594		0.0433	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	32	59.6	24.9	0.0	0.0	11.3	31	34.7	1.35	2.09	1.22	1.49	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Pig	0.84				0.0	Pig	4.9	0.07	0.0125	0.07	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Pork	3				7.5	Liquid	0.0	0.67	0.0010	0.20	0.0050	Note 49
Year	N	31	1	29.8	29.0	0	100	11	0	1	21.8	32	14.0	5.8	0.0	0.0	2.4	31	8.1	0.31	0.53	0.28	0.41	Note 47
2	Vol/NH3	Pig	YES	0.8	7.3	NON	100.00	WWH	1.000	YES	5.4	Pig	0.67				0.0	Pig	1.1	0.09	0.0125	0.09	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.357	2.4	5.4	Pork	3				2.4	Liquid	0.0	0.13	0.0010	0.04	0.0050	Note 49
Year	N	31	1	7.0	6.8	0	100	11	0	1	5.1	32	3.3	1.4	0.0	0.0	0.6	31	1.9	0.07	0.13	0.07	0.10	Note 47
3	Vol/NH3	Pig	YES	0.2	1.7	NON	100.00	WWH	1.000	YES	1.3	Pig	0.67				0.0	Pig	0.3	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.357	0.6	1.3	Pork	3				0.6	Liquid	0.0	0.03	0.0010	0.01	0.0050	Note 49
Year	N	31	1	1.6	1.6	0	100	11	0	1	1.2	32	0.8	0.3	0.0	0.0	0.1	31	0.4	0.02	0.03	0.02	0.02	Note 47
4	Vol/NH3	Pig	YES	0.0	0.4	NON	100.00	WWH	1.000	YES	0.3	Pig	0.67				0.0	Pig	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.357	0.1	0.3	Pork	3				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	31	1	0.4	0.4	0	100	1	0	1	0.3	32	0.2	0.1	0.0	0.0	0.0	31	0.1	0.00	0.01	0.00	0.01	Note 47
5	Vol/NH3	Pig	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.1	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.403	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	0.1	0.1	0	100	109	0	1	0.1	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.404	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	31	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.403	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	0.68	0.18	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.92	1.35	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.79	2.04	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.79	2.04	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.18	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.92	Total including natural	3.71	2.95	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											43.2	42.8	1.96	3.04	1.47	1.97 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							23.9	23.7	0.24		0.24	Note 45
1-10 N leach			FIRST YEAR		0.0335		0.0212				TOTAL N AMOUNTS IN KG AND % LEACHED							33.7	33.5	0.84		0.25	Note 45
			TOTAL		0.0429		0.0277				TOTAL N AMOUNTS IN KG AND %							100.8	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.0703		0.0455 Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	32	59.6	24.9	0.0	0.0	11.3	32	34.7	1.62	2.37	1.21	1.50 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Pig	0.84				0.0	Pig	6.2	0.08	0.0125	0.08	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Pork	3				7.5	Sep	0.0	0.67	0.0105	0.20	0.0050 Note 49
Year	N	32	1	29.1	22.9	0	100	11	0	1	17.2	32	9.6	4.0	0.0	0.0	1.9	32	5.6	0.29	0.56	0.22	0.39 Note 47
2	Vol/NH3	Pig	YES	6.2	5.7	NON	100.00	WWH	1.000	YES	5.7	Pig	0.67				0.0	Pig	1.0	0.13	0.0125	0.13	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.443	1.9	5.7	Pork	3				1.9	Sep	0.0	0.14	0.0105	0.04	0.0050 Note 49
Year	N	32	1	4.7	3.7	0	100	11	0	1	2.8	32	1.5	0.6	0.0	0.0	0.3	32	0.9	0.05	0.09	0.03	0.06 Note 47
3	Vol/NH3	Pig	YES	1.0	0.9	NON	100.00	WWH	1.000	YES	0.9	Pig	0.67				0.0	Pig	0.2	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.443	0.3	0.9	Pork	3				0.3	Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year	N	32	1	0.7	0.6	0	100	11	0	1	0.4	32	0.2	0.1	0.0	0.0	0.0	32	0.1	0.01	0.01	0.01	0.01 Note 47
4	Vol/NH3	Pig	YES	0.2	0.1	NON	100.00	WWH	1.000	YES	0.1	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	0.443	0.0	0.1	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.1	0.1	0	100	1	0	1	0.1	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.483	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	109	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.483	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.443	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.443	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.443	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	32	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.483	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	0.68	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.22	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O	Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.04	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	0.00	Total anthropogenic	3.04	1.97 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	3.87	2.79 Note 51

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

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP		TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED												41.3	39.8	2.12	3.22	1.39	1.94	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									30.5	29.4	0.30		0.30		Note 45
1-10 N leach			FIRST YEAR		0.0370	0.0213		TOTAL N AMOUNTS IN KG AND % LEACHED									31.9	30.8	0.80		0.24		Note 45
			TOTAL		0.0455	0.0273		TOTAL N AMOUNTS IN KG AND %									103.8	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.0779		0.0468	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	32	59.6	24.9	0.0	0.0	11.3	33	34.7	1.84	2.62	1.20	1.51 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Pig	0.84				0.0	Pig	8.7	0.11	0.0125	0.11	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Pork	3				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050 Note 49
Year	N	33	1	29.3	17.6	0	100	11	0	1	13.2	32	7.3	3.1	0.0	0.0	1.5	33	4.3	0.25	0.53	0.17	0.37 Note 47
2	Vol/NH3	Pig	YES	11.7	4.4	NON	100.00	WWH	1.000	YES	4.4	Pig	0.67				0.0	Pig	1.1	0.17	0.0125	0.17	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.443	1.5	4.4	Pork	3				1.4	Deep	0.0	0.11	0.0200	0.03	0.0050 Note 49
Year	N	33	1	3.6	2.2	0	100	11	0	1	1.6	32	0.9	0.4	0.0	0.0	0.2	33	0.5	0.03	0.07	0.02	0.05 Note 47
3	Vol/NH3	Pig	YES	1.4	0.5	NON	100.00	WWH	1.000	YES	0.5	Pig	0.67				0.0	Pig	0.1	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.443	0.2	0.5	Pork	3				0.2	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.4	0.3	0	100	11	0	1	0.2	32	0.1	0.0	0.0	0.0	0.0	33	0.1	0.00	0.01	0.00	0.01 Note 47
4	Vol/NH3	Pig	YES	0.2	0.1	NON	100.00	WWH	1.000	YES	0.1	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.443	0.0	0.1	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.1	0.0	0	100	1	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.483	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	109	0	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.483	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.443	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.443	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.443	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.483	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	0.68	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	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	0.00	Current crops	3.22	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	3.22	1.94	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	Total including natural	4.01	2.72	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											48.9	48.9	2.82	4.02	2.47	2.87 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									5.4	5.4	0.05		0.05	Note 45
1-10 N leach			FIRST YEAR		0.0382		0.0281		TOTAL N AMOUNTS IN KG AND % LEACHED									45.7	45.7	1.14		0.34	Note 45
			TOTAL		0.0567		0.0405		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.0822		0.0587 Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	32	59.6	24.9	0.0	0.0	11.3	34	34.7	2.01	2.71	1.77	1.99 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Pig	0.84				0.0	Pig	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Pork	3				7.5	Root	0.0	0.67	0.0200	0.20	0.0200 Note 49
Year	N	34	1	34.7	34.7	0	100	11	0	1	32.3	32	14.5	6.1	0.0	0.0	3.6	34	8.4	0.62	0.99	0.53	0.67 Note 47
2	Vol/NH3	Pig	YES	0.0	2.4	NON	100.00	WWH	1.000	YES	14.2	Pig	0.67				0.0	Pig	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.551	3.6	14.2	Pork	3				3.5	Root	0.0	0.36	0.0200	0.11	0.0200 Note 49
Year	N	34	1	8.4	8.4	0	100	11	0	1	7.8	32	3.5	1.5	0.0	0.0	0.9	34	2.1	0.15	0.24	0.13	0.16 Note 47
3	Vol/NH3	Pig	YES	0.0	0.6	NON	100.00	WWH	1.000	YES	3.5	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	0.551	0.9	3.5	Pork	3				0.8	Root	0.0	0.09	0.0200	0.03	0.0200 Note 49
Year	N	34	1	2.1	2.1	0	100	11	0	1	1.9	32	0.9	0.4	0.0	0.0	0.2	34	0.5	0.04	0.06	0.03	0.04 Note 47
4	Vol/NH3	Pig	YES	0.0	0.1	NON	100.00	WWH	1.000	YES	0.8	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	0.551	0.2	0.8	Pork	3				0.2	Root	0.0	0.02	0.0200	0.01	0.0200 Note 49
Year	N	34	1	0.5	0.5	0	100	1	0	1	0.5	32	0.2	0.1	0.0	0.0	0.1	34	0.1	0.01	0.01	0.01	0.01 Note 47
5	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.2	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.583	0.1	0.2	Pork	3				0.0	Root	0.0	0.01	0.0200	0.00	0.0200 Note 49
Year	N	34	1	0.1	0.1	0	100	109	0	1	0.1	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Pig	0.84				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.583	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.551	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.551	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.551	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	1	0.0	32	0.0	0.0	0.0	0.0	0.0	34	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000		ORG	1.00	1.000	0.583	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	0.68	0.15	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	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	4.02	2.87	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.02	2.87	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.15	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	4.90	3.75	Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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							51.0	51.0				1.68	2.69	1.50	1.90	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					14.3	14.3				0.14		0.14		Note 45
1-10 N leach			FIRST YEAR		0.0292		0.0206		TOTAL N AMOUNTS IN KG AND % LEACHED					34.8	34.8				0.87		0.26		Note 45
			TOTAL		0.0379		0.0269		TOTAL N AMOUNTS IN KG AND %					100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.0527		0.0374	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	42	59.6	30.4	0.0	0.0	11.3	41	29.2	1.34	2.07	1.20	1.46 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	2.9	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Meat	4				7.5	Liquid	0.0	0.67	0.0010	0.20	0.0050 Note 49
Year	N	41	1	26.3	25.8	0	100	11	0	1	19.3	42	10.8	5.5	0.0	0.0	2.1	41	5.3	0.27	0.51	0.24	0.37 Note 47
2	Vol/NH3	Poultry	YES	0.5	6.4	NON	100.00	WWH	1.000	YES	6.4	Poultry	0.67				0.0	Poultry	0.5	0.07	0.0125	0.07	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	2.1	6.4	Meat	4				2.1	Liquid	0.0	0.16	0.0010	0.05	0.0050 Note 49
Year	N	41	1	4.7	4.7	0	100	11	0	1	3.5	42	1.9	1.0	0.0	0.0	0.4	41	1.0	0.05	0.09	0.04	0.07 Note 47
3	Vol/NH3	Poultry	YES	0.1	1.2	NON	100.00	WWH	1.000	YES	1.2	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	0.4	1.2	Meat	4				0.4	Liquid	0.0	0.03	0.0010	0.01	0.0050 Note 49
Year	N	41	1	0.9	0.8	0	100	11	0	1	0.6	42	0.4	0.2	0.0	0.0	0.1	41	0.2	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Poultry	YES	0.0	0.2	NON	100.00	WWH	1.000	YES	0.2	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	0.443	0.1	0.2	Meat	4				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.2	0.2	0	100	1	0	1	0.1	42	0.1	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	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.483	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	109	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.483	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.483	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	0.68	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.25	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.69	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	2.69	1.90	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.85	Total including natural	3.54	2.75	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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						48.0	48.0	1.80	2.81	1.38	1.82	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						19.7	19.7	0.20		0.20		Note 45
1-10 N leach			FIRST YEAR		0.0327	0.0209		TOTAL N AMOUNTS IN KG AND % LEACHED						32.3	32.3	0.81		0.24		Note 45
			TOTAL		0.0396	0.0257		TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.0585		0.0379	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	42	59.6	30.4	0.0	0.0	11.3	42	29.2	1.55	2.31	1.18	1.48 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	7.3	0.10	0.0125	0.10	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Meat	4				7.5	Sep	0.0	0.67	0.0105	0.20	0.0050 Note 49
Year	N	42	1	21.9	18.6	0	100	11	0	1	14.0	42	7.8	4.0	0.0	0.0	1.5	42	3.8	0.22	0.43	0.17	0.30 Note 47
2	Vol/NH3	Poultry	YES	3.3	4.7	NON	100.00	WWH	1.000	YES	4.6	Poultry	0.67				0.0	Poultry	1.0	0.09	0.0125	0.09	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	1.5	4.6	Meat	4				1.5	Sep	0.0	0.12	0.0105	0.03	0.0050 Note 49
Year	N	42	1	2.9	2.4	0	100	11	0	1	1.8	42	1.0	0.5	0.0	0.0	0.2	42	0.5	0.03	0.06	0.02	0.04 Note 47
3	Vol/NH3	Poultry	YES	0.4	0.6	NON	100.00	WWH	1.000	YES	0.6	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	0.443	0.2	0.6	Meat	4				0.2	Sep	0.0	0.02	0.0105	0.00	0.0050 Note 49
Year	N	42	1	0.4	0.3	0	100	11	0	1	0.2	42	0.1	0.1	0.0	0.0	0.0	42	0.1	0.00	0.01	0.00	0.01 Note 47
4	Vol/NH3	Poultry	YES	0.1	0.1	NON	100.00	WWH	1.000	YES	0.1	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	0.443	0.0	0.1	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.483	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	109	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.483	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.483	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	0.68	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	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	2.81	1.82	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.81	1.82	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	3.60	2.62	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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												45.3	45.2	1.86	2.90	1.30	1.77	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							22.1	22.0	0.22		0.22		Note 45
1-10 N leach			FIRST YEAR		0.0350		0.0212				TOTAL N AMOUNTS IN KG AND % LEACHED							32.9	32.8	0.82		0.25		Note 45
			TOTAL		0.0409		0.0249				TOTAL N AMOUNTS IN KG AND %							100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.0640		0.0390	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	42	59.6	30.4	0.0	0.0	11.3	43	29.2	1.67	2.48	1.16	1.50	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	11.7	0.14	0.0125	0.14	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Meat	4				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050	Note 49
Year	N	43	1	17.8	14.6	0	100	11	0	1	11.0	42	4.2	2.2	0.0	0.0	1.2	43	2.1	0.18	0.39	0.13	0.25	Note 47
2	Vol/NH3	Poultry	YES	3.1	3.7	NON	100.00	WWH	1.000	YES	5.5	Poultry	0.67				0.0	Poultry	0.8	0.08	0.0125	0.08	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	1.2	5.5	Meat	4				1.2	Deep	0.0	0.14	0.0200	0.04	0.0050	Note 49
Year	N	43	1	1.3	1.0	0	100	11	0	1	0.8	42	0.3	0.2	0.0	0.0	0.1	43	0.1	0.01	0.03	0.01	0.02	Note 47
3	Vol/NH3	Poultry	YES	0.2	0.3	NON	100.00	WWH	1.000	YES	0.4	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	0.1	0.4	Meat	4				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050	Note 49
Year	N	43	1	0.1	0.1	0	100	11	0	1	0.1	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.642	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	109	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.642	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.642	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	0.68	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	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	2.90	1.77	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.90	1.77	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	Total including natural	3.64	2.51	Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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													50.2	50.2	2.44	3.61	2.11	2.50	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							4.6	4.6	0.05		0.05		Note 45
1-10	N leach		FIRST YEAR		0.0366		0.0265				TOTAL N AMOUNTS IN KG AND % LEACHED							45.2	45.2	1.13		0.34		Note 45
			TOTAL		0.0510		0.0352				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.0720		0.0498	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	42	59.6	30.4	0.0	0.0	11.3	44	29.2	1.90	2.60	1.66	1.88	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Meat	4				7.5	Scrap	0.0	0.67	0.0200	0.20	0.0200	Note 49
Year	N	44	1	29.2	29.2	0	100	11	0	1	27.2	42	8.4	4.3	0.0	0.0	3.0	44	4.1	0.46	0.87	0.39	0.53	Note 47
2	Vol/NH3	Poultry	YES	0.0	2.0	NON	100.00	WWH	1.000	YES	15.7	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	0.689	3.0	15.7	Meat	4				2.9	Scrap	0.0	0.39	0.0200	0.12	0.0200	Note 49
Year	N	44	1	4.1	4.1	0	100	11	0	1	3.8	42	1.2	0.6	0.0	0.0	0.4	44	0.6	0.07	0.12	0.06	0.08	Note 47
3	Vol/NH3	Poultry	YES	0.0	0.3	NON	100.00	WWH	1.000	YES	2.2	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	0.4	2.2	Meat	4				0.4	Scrap	0.0	0.06	0.0200	0.02	0.0200	Note 49
Year	N	44	1	0.6	0.6	0	100	11	0	1	0.5	42	0.2	0.1	0.0	0.0	0.1	44	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.3	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	0.1	0.3	Meat	4				0.1	Scrap	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.1	0.1	0	100	1	0	1	0.1	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.711	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	109	0	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.712	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	42	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.711	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	0.68	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.61	2.50	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.61	2.50	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.40	3.28	Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											35.8	35.8	1.95	3.20	1.83	2.37	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							23.4	23.4	0.23		0.23		Note 45
1-10 N leach			FIRST YEAR		0.0296		0.0218				TOTAL N AMOUNTS IN KG AND % LEACHED							40.8	40.8	1.02		0.31		Note 45
			TOTAL		0.0452		0.0334				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0895		0.0661	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	43	59.6	14.4	0.0	0.0	11.3	41	45.2	1.36	2.10	1.28	1.54	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	4.5	0.07	0.0125	0.07	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Eggs	4				7.5	Liquid	0.0	0.67	0.0010	0.20	0.0050	Note 49
Year	N	41	1	40.7	39.9	0	100	11	0	1	29.9	43	16.7	4.0	0.0	0.0	3.3	41	12.7	0.43	0.80	0.40	0.59	Note 47
2	Vol/NH3	Poultry	YES	0.8	10.0	NON	100.00	WWH	1.000	YES	10.0	Poultry	0.67				0.0	Poultry	1.3	0.12	0.0125	0.12	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	3.3	10.0	Eggs	4				3.2	Liquid	0.0	0.25	0.0010	0.07	0.0050	Note 49
Year	N	41	1	11.4	11.2	0	100	11	0	1	8.4	43	4.7	1.1	0.0	0.0	0.9	41	3.5	0.12	0.22	0.11	0.17	Note 47
3	Vol/NH3	Poultry	YES	0.2	2.8	NON	100.00	WWH	1.000	YES	2.8	Poultry	0.67				0.0	Poultry	0.4	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	0.9	2.8	Eggs	4				0.9	Liquid	0.0	0.07	0.0010	0.02	0.0050	Note 49
Year	N	41	1	3.2	3.1	0	100	11	0	1	2.3	43	1.3	0.3	0.0	0.0	0.3	41	1.0	0.03	0.06	0.03	0.05	Note 47
4	Vol/NH3	Poultry	YES	0.1	0.8	NON	100.00	WWH	1.000	YES	0.8	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	0.3	0.8	Eggs	4				0.3	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	41	1	0.9	0.9	0	100	1	0	1	0.7	43	0.3	0.1	0.0	0.0	0.1	41	0.3	0.01	0.02	0.01	0.01	Note 47
5	Vol/NH3	Poultry	YES	0.0	0.2	NON	100.00	SBA	1.000	YES	0.2	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.483	0.1	0.2	Eggs	4				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.2	0.2	0	100	109	0	1	0.2	43	0.1	0.0	0.0	0.0	0.0	41	0.1	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.483	0.0	0.1	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.1	0.1	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.483	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	0.68	0.22	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.98	1.44	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	3.20	2.37 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.20	2.37 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.22	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.98 Total including natural	4.18	3.35 Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											32.3	32.3	2.14	3.36	1.59	2.18 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									31.8	31.8	0.32		0.32	Note 45
1-10 N leach			FIRST YEAR		0.0350		0.0223		TOTAL N AMOUNTS IN KG AND % LEACHED									36.0	36.0	0.90		0.27	Note 45
			TOTAL		0.0473		0.0308		TOTAL N AMOUNTS IN KG AND %									100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1040		0.0676	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	43	59.6	14.4	0.0	0.0	11.3	42	45.2	1.67	2.48	1.24	1.58 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	11.3	0.14	0.0125	0.14	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Eggs	4				7.5	Sep	0.0	0.67	0.0105	0.20	0.0050 Note 49
Year	N	42	1	33.9	28.8	0	100	11	0	1	21.6	43	12.0	2.9	0.0	0.0	2.4	42	9.1	0.37	0.70	0.28	0.48 Note 47
2	Vol/NH3	Poultry	YES	5.1	7.2	NON	100.00	WWH	1.000	YES	7.2	Poultry	0.67				0.0	Poultry	2.3	0.15	0.0125	0.15	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	2.4	7.2	Eggs	4				2.3	Sep	0.0	0.18	0.0105	0.05	0.0050 Note 49
Year	N	42	1	6.9	5.8	0	100	11	0	1	4.4	43	2.4	0.6	0.0	0.0	0.5	42	1.8	0.08	0.14	0.06	0.10 Note 47
3	Vol/NH3	Poultry	YES	1.0	1.5	NON	100.00	WWH	1.000	YES	1.5	Poultry	0.67				0.0	Poultry	0.5	0.03	0.0125	0.03	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	0.5	1.5	Eggs	4				0.5	Sep	0.0	0.04	0.0105	0.01	0.0050 Note 49
Year	N	42	1	1.4	1.2	0	100	11	0	1	0.9	43	0.5	0.1	0.0	0.0	0.1	42	0.4	0.02	0.03	0.01	0.02 Note 47
4	Vol/NH3	Poultry	YES	0.2	0.3	NON	100.00	WWH	1.000	YES	0.3	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	0.443	0.1	0.3	Eggs	4				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	42	1	0.3	0.2	0	100	1	0	1	0.2	43	0.1	0.0	0.0	0.0	0.0	42	0.1	0.00	0.01	0.00	0.00 Note 47
5	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.1	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.483	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	0.1	0.0	0	100	109	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.483	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.443	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.483	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	0.68	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.29	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.36	2.18	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	3.36	2.18	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	4.23	3.06	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											29.5	29.4	2.19	3.45	1.44	2.06 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									34.3	34.2	0.34		0.34	Note 45
1-10 N leach			FIRST YEAR		0.0386		0.0228		TOTAL N AMOUNTS IN KG AND % LEACHED									36.6	36.4	0.91		0.27	Note 45
			TOTAL		0.0487		0.0291		TOTAL N AMOUNTS IN KG AND %									100.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1168		0.0698 Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	43	59.6	14.4	0.0	0.0	11.3	43	45.2	1.86	2.74	1.21	1.61 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	18.1	0.20	0.0125	0.20	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Eggs	4				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050 Note 49
Year	N	43	1	27.5	22.7	0	100	11	0	1	17.0	43	6.6	1.6	0.0	0.0	1.9	43	5.0	0.30	0.63	0.21	0.40 Note 47
2	Vol/NH3	Poultry	YES	4.8	5.7	NON	100.00	WWH	1.000	YES	8.6	Poultry	0.67				0.0	Poultry	2.0	0.12	0.0125	0.12	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	1.9	8.6	Eggs	4				1.8	Deep	0.0	0.21	0.0200	0.06	0.0050 Note 49
Year	N	43	1	3.0	2.5	0	100	11	0	1	1.9	43	0.7	0.2	0.0	0.0	0.2	43	0.5	0.03	0.07	0.02	0.04 Note 47
3	Vol/NH3	Poultry	YES	0.5	0.6	NON	100.00	WWH	1.000	YES	0.9	Poultry	0.67				0.0	Poultry	0.2	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	0.2	0.9	Eggs	4				0.2	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	43	1	0.3	0.3	0	100	11	0	1	0.2	43	0.1	0.0	0.0	0.0	0.0	43	0.1	0.00	0.01	0.00	0.00 Note 47
4	Vol/NH3	Poultry	YES	0.1	0.1	NON	100.00	WWH	1.000	YES	0.1	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	0.0	0.1	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.642	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	109	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.642	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.614	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.642	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	0.68	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.14	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O	
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.45	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	3.45	2.06 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.22	2.83 Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											35.6	35.6	3.22	4.74	2.84	3.34	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							6.3	6.3	0.06		0.06		Note 45
1-10	N leach		FIRST YEAR		0.0412		0.0311				TOTAL N AMOUNTS IN KG AND % LEACHED							58.1	58.1	1.45		0.44		Note 45
			TOTAL		0.0669		0.0471				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.1330		0.0938	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	43	59.6	14.4	0.0	0.0	11.3	44	45.2	2.22	2.92	1.98	2.20	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Poultry	0.84				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Eggs	4				7.5	Scrap	0.0	0.67	0.0200	0.20	0.0200	Note 49
Year	N	44	1	45.2	45.2	0	100	11	0	1	42.1	43	13.1	3.2	0.0	0.0	4.6	44	9.9	0.78	1.42	0.68	0.89	Note 47
2	Vol/NH3	Poultry	YES	0.0	3.2	NON	100.00	WWH	1.000	YES	24.3	Poultry	0.67				0.0	Poultry	0.0	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	4.6	24.3	Eggs	4				4.6	Scrap	0.0	0.61	0.0200	0.18	0.0200	Note 49
Year	N	44	1	9.9	9.9	0	100	11	0	1	9.2	43	2.9	0.7	0.0	0.0	1.0	44	2.2	0.17	0.31	0.15	0.20	Note 47
3	Vol/NH3	Poultry	YES	0.0	0.7	NON	100.00	WWH	1.000	YES	5.3	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	0.689	1.0	5.3	Eggs	4				1.0	Scrap	0.0	0.13	0.0200	0.04	0.0200	Note 49
Year	N	44	1	2.2	2.2	0	100	11	0	1	2.0	43	0.6	0.2	0.0	0.0	0.2	44	0.5	0.04	0.07	0.03	0.04	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.2	NON	100.00	WWH	1.000	YES	1.2	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	0.2	1.2	Eggs	4				0.2	Scrap	0.0	0.03	0.0200	0.01	0.0200	Note 49
Year	N	44	1	0.5	0.5	0	100	1	0	1	0.4	43	0.1	0.0	0.0	0.0	0.1	44	0.1	0.01	0.01	0.01	0.01	Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.3	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	0.711	0.1	0.3	Eggs	4				0.0	Scrap	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.1	0.1	0	100	109	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.1	Poultry	0.84				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.712	0.0	0.1	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.0	0.0	0	100	11	0	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	43	0.0	0.0	0.0	0.0	0.0	44	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.711	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	0.68	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.26	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.74	3.34	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	4.74	3.34	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.86	Total including natural	5.59	4.20	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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							32.1	29.1				3.64	5.40	2.24	2.87	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							13.6	12.3				0.14		0.14		Note 45
1-10 N leach			FIRST YEAR		0.0417	0.0224	TOTAL N AMOUNTS IN KG AND % LEACHED							64.7	58.6				1.62		0.49		Note 45
			TOTAL		0.0762	0.0404	TOTAL N AMOUNTS IN KG AND %							110.4	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1681		0.0892	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	51	59.6	8.5	0.0	0.0	11.3	53	51.1	2.19	2.96	1.29	1.59 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Sheep	0.84				0.0	Sheep	7.7	0.10	0.0125	0.10	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Milk/mutt	5				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050 Note 49
Year	N	53	1	50.5	50.5	0	100	11	0	1	50.5	51	19.5	2.8	0.0	0.0	5.6	53	16.7	0.98	1.65	0.64	0.86 Note 47
2	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	25.5	Sheep	0.67				0.0	Sheep	2.5	0.03	0.0125	0.03	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	5.6	25.5	Milk/mutt	5				5.5	Deep	0.0	0.64	0.0200	0.19	0.0050 Note 49
Year	N	53	1	16.5	16.5	0	100	11	0	1	16.5	51	6.4	0.9	0.0	0.0	1.8	53	5.5	0.32	0.54	0.21	0.28 Note 47
3	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	8.3	Sheep	0.67				0.0	Sheep	0.8	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	1.8	8.3	Milk/mutt	5				1.8	Deep	0.0	0.21	0.0200	0.06	0.0050 Note 49
Year	N	53	1	5.4	5.4	0	100	11	0	1	5.4	51	2.1	0.3	0.0	0.0	0.6	53	1.8	0.11	0.18	0.07	0.09 Note 47
4	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	2.7	Sheep	0.67				0.0	Sheep	0.3	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	0.6	2.7	Milk/mutt	5				0.6	Deep	0.0	0.07	0.0200	0.02	0.0050 Note 49
Year	N	53	1	1.8	1.8	0	100	1	0	1	1.8	51	0.6	0.1	0.0	0.0	0.2	53	0.5	0.03	0.06	0.02	0.03 Note 47
5	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.9	Sheep	0.65				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	0.642	0.2	0.9	Milk/mutt	5				0.2	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	53	1	0.5	0.5	0	100	109	0	1	0.5	51	0.2	0.0	0.0	0.0	0.1	53	0.2	0.01	0.02	0.01	0.01 Note 47
6	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.3	Sheep	0.84				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.642	0.1	0.3	Milk/mutt	5				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	53	1	0.2	0.2	0	100	11	0	1	0.2	51	0.1	0.0	0.0	0.0	0.0	53	0.1	0.00	0.01	0.00	0.00 Note 47
7	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.1	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	0.614	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	0.1	0.1	0	100	11	0	1	0.1	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	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	1	0.0	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	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	1	0.0	51	0.0	0.0	0.0	0.0	0.0	53	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.642	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	0.68	0.19	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.96	1.41	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	5.40	2.87 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	5.40	2.87 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.19	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.96 Total including natural	6.36	3.83 Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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	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											29.5	29.5	3.55	5.21	1.79	2.34	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							7.0	7.0	0.07		0.07		Note 45
1-10	N leach		FIRST YEAR		0.0428		0.0183				TOTAL N AMOUNTS IN KG AND % LEACHED							63.5	63.5	1.59		0.48		Note 45
			TOTAL		0.0735		0.0330				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.1766		0.0792	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	51	59.6	8.5	0.0	0.0	11.3	54	51.1	2.34	3.03	1.07	1.30	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Sheep	0.84				0.0	Sheep	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Milk/mutt	5				7.5	Graz	0.0	0.67	0.0200	0.20	0.0000	Note 49
Year	N	54	1	51.1	51.1	0	100	11	0	1	47.6	51	14.8	2.1	0.0	0.0	5.3	54	12.7	0.91	1.64	0.54	0.78	Note 47
2	Vol/NH3	Sheep	YES	0.0	3.6	NON	100.00	WWH	1.000	YES	27.5	Sheep	0.67				0.0	Sheep	0.0	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	5.3	27.5	Milk/mutt	5				5.1	Graz	0.0	0.69	0.0200	0.21	0.0000	Note 49
Year	N	54	1	12.7	12.7	0	100	11	0	1	11.8	51	3.7	0.5	0.0	0.0	1.3	54	3.1	0.23	0.41	0.13	0.19	Note 47
3	Vol/NH3	Sheep	YES	0.0	0.9	NON	100.00	WWH	1.000	YES	6.8	Sheep	0.67				0.0	Sheep	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	1.3	6.8	Milk/mutt	5				1.3	Graz	0.0	0.17	0.0200	0.05	0.0000	Note 49
Year	N	54	1	3.1	3.1	0	100	11	0	1	2.9	51	0.9	0.1	0.0	0.0	0.3	54	0.8	0.06	0.10	0.03	0.05	Note 47
4	Vol/NH3	Sheep	YES	0.0	0.2	NON	100.00	WWH	1.000	YES	1.7	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	0.689	0.3	1.7	Milk/mutt	5				0.3	Graz	0.0	0.04	0.0200	0.01	0.0000	Note 49
Year	N	54	1	0.8	0.8	0	100	1	0	1	0.7	51	0.2	0.0	0.0	0.0	0.1	54	0.2	0.01	0.02	0.01	0.01	Note 47
5	Vol/NH3	Sheep	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.4	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	0.711	0.1	0.4	Milk/mutt	5				0.1	Graz	0.0	0.01	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.2	0.2	0	100	109	0	1	0.2	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.01	0.00	0.00	Note 47
6	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.1	Sheep	0.84				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.712	0.0	0.1	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.0	0.0	0	100	11	0	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.711	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	0.68	0.15	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	1.30	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	5.21	2.34	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	5.21	2.34	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.15	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.89	Total including natural	6.10	3.22	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											23.4	21.4	3.09	4.69	1.86	2.60 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									37.3	34.0	0.37		0.37	Note 45
1-10 N leach			FIRST YEAR		0.0425		0.0227		TOTAL N AMOUNTS IN KG AND % LEACHED									48.8	44.6	1.22		0.37	Note 45
			TOTAL		0.0661		0.0367		TOTAL N AMOUNTS IN KG AND %									109.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.2003		0.1110 Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	61	59.6	5.7	0.0	0.0	11.3	63	53.9	2.23	3.01	1.30	1.61 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Goat	0.84				0.0	Goat	8.1	0.10	0.0125	0.10	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Milk/meat	6				7.5	Deep	0.0	0.67	0.0200	0.20	0.0050 Note 49
Year	N	63	1	53.2	45.2	0	100	11	0	1	33.9	61	13.1	1.3	0.0	0.0	3.7	63	11.8	0.67	1.31	0.44	0.77 Note 47
2	Vol/NH3	Goat	YES	8.0	11.3	NON	100.00	WWH	1.000	YES	17.1	Goat	0.67				0.0	Goat	1.8	0.21	0.0125	0.21	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	3.7	17.1	Milk/meat	6				3.7	Deep	0.0	0.43	0.0200	0.13	0.0050 Note 49
Year	N	63	1	11.7	9.9	0	100	11	0	1	7.4	61	2.9	0.3	0.0	0.0	0.8	63	2.6	0.15	0.29	0.10	0.17 Note 47
3	Vol/NH3	Goat	YES	1.8	2.5	NON	100.00	WWH	1.000	YES	3.8	Goat	0.67				0.0	Goat	0.4	0.05	0.0125	0.05	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	0.8	3.8	Milk/meat	6				0.8	Deep	0.0	0.09	0.0200	0.03	0.0050 Note 49
Year	N	63	1	2.6	2.2	0	100	11	0	1	1.6	61	0.6	0.1	0.0	0.0	0.2	63	0.6	0.03	0.06	0.02	0.04 Note 47
4	Vol/NH3	Goat	YES	0.4	0.5	NON	100.00	WWH	1.000	YES	0.8	Goat	0.67				0.0	Goat	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	0.2	0.8	Milk/meat	6				0.2	Deep	0.0	0.02	0.0200	0.01	0.0050 Note 49
Year	N	63	1	0.6	0.5	0	100	1	0	1	0.4	61	0.1	0.0	0.0	0.0	0.0	63	0.1	0.01	0.01	0.00	0.01 Note 47
5	Vol/NH3	Goat	YES	0.1	0.1	NON	100.00	SBA	1.000	YES	0.2	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	0.642	0.0	0.2	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.1	0.1	0	100	109	0	1	0.1	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
6	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.0	Goat	0.84				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.642	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
8	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.614	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.642	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	0.68	0.17	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.32	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	4.69	2.60	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.69	2.60	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.17	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.90	Total including natural	5.58	3.50	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											26.5	26.5	3.71	5.44	2.57	3.14	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											7.3	7.3	0.07		0.07		Note 45
1-10	N leach		FIRST YEAR		0.0436	0.0259	TOTAL N AMOUNTS IN KG AND % LEACHED											66.2	66.2	1.65		0.50		Note 45
			TOTAL		0.0768	0.0443	TOTAL N AMOUNTS IN KG AND %											100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.2053		0.1185	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	61	59.6	5.7	0.0	0.0	11.3	64	53.9	2.39	3.09	1.61	1.83	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Goat	0.84				0.0	Goat	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.391	11.3	26.9	Milk/meat	6				7.5	Graz	0.0	0.67	0.0200	0.20	0.0100	Note 49
Year	N	64	1	53.9	53.9	0	100	11	0	1	50.1	61	15.6	1.5	0.0	0.0	5.5	64	14.1	0.98	1.74	0.71	0.96	Note 47
2	Vol/NH3	Goat	YES	0.0	3.8	NON	100.00	WWH	1.000	YES	29.0	Goat	0.67				0.0	Goat	0.0	0.04	0.0125	0.04	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	5.5	29.0	Milk/meat	6				5.4	Graz	0.0	0.72	0.0200	0.22	0.0100	Note 49
Year	N	64	1	14.1	14.1	0	100	11	0	1	13.1	61	4.1	0.4	0.0	0.0	1.4	64	3.7	0.26	0.45	0.19	0.25	Note 47
3	Vol/NH3	Goat	YES	0.0	1.0	NON	100.00	WWH	1.000	YES	7.6	Goat	0.67				0.0	Goat	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	1.4	7.6	Milk/meat	6				1.4	Graz	0.0	0.19	0.0200	0.06	0.0100	Note 49
Year	N	64	1	3.7	3.7	0	100	11	0	1	3.4	61	1.1	0.1	0.0	0.0	0.4	64	1.0	0.07	0.12	0.05	0.07	Note 47
4	Vol/NH3	Goat	YES	0.0	0.3	NON	100.00	WWH	1.000	YES	2.0	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	0.689	0.4	2.0	Milk/meat	6				0.4	Graz	0.0	0.05	0.0200	0.01	0.0100	Note 49
Year	N	64	1	1.0	1.0	0	100	1	0	1	0.9	61	0.3	0.0	0.0	0.0	0.1	64	0.2	0.02	0.03	0.01	0.02	Note 47
5	Vol/NH3	Goat	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.5	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.711	0.1	0.5	Milk/meat	6				0.1	Graz	0.0	0.01	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.2	0.2	0	100	109	0	1	0.2	61	0.1	0.0	0.0	0.0	0.0	64	0.1	0.00	0.01	0.00	0.00	Note 47
6	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WBB	1.000	YES	0.1	Goat	0.84				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.712	0.0	0.1	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.1	0.1	0	100	11	0	1	0.1	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.689	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	1	0.0	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.711	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	0.68	0.16	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.32	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	5.44	3.14	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	5.44	3.14	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.16	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.90	Total including natural	6.34	4.04	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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												27.6	27.5	2.25	3.66	1.95	2.56 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							26.9	26.8	0.27		0.27	Note 45
1-10 N leach			FIRST YEAR		0.0284		0.0183				TOTAL N AMOUNTS IN KG AND % LEACHED							45.9	45.7	1.15		0.34	Note 45
			TOTAL		0.0517		0.0362				TOTAL N AMOUNTS IN KG AND %							100.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1327		0.0928	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	71	0.0	0.0	59.6	0.0	11.3	71	59.6	1.32	2.01	1.07	1.30 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	N crop	0.84				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	0.391	11.3	26.9	high N	71				7.5	High	0.0	0.67	0.0000	0.20	0.0000 Note 49
Year	N	71	1	59.6	59.6	0	100	11	0	1	44.7	21	26.8	6.3	0.0	0.0	4.9	21	20.5	0.64	1.13	0.60	0.86 Note 47
2	Vol/NH3	Green	YES	0.0	14.9	NON	100.00	WWH	1.000	YES	12.9	Cattle	0.67				0.0	Cattle	1.6	0.17	0.0125	0.17	0.0100 Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.400	4.9	12.9	Dairy	2				4.8	Liquid	0.0	0.32	0.0010	0.10	0.0050 Note 49
Year	N	21	1	19.2	18.7	0	100	11	0	1	14.1	21	8.4	2.0	0.0	0.0	1.6	21	6.4	0.20	0.36	0.19	0.28 Note 47
3	Vol/NH3	Cattle	YES	0.4	4.7	NON	100.00	WWH	1.000	YES	4.1	Cattle	0.67				0.0	Cattle	0.5	0.06	0.0125	0.06	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	1.6	4.1	Dairy	2				1.5	Liquid	0.0	0.10	0.0010	0.03	0.0050 Note 49
Year	N	21	1	6.0	5.9	0	100	11	0	1	4.4	21	2.7	0.6	0.0	0.0	0.5	21	2.0	0.06	0.11	0.06	0.09 Note 47
4	Vol/NH3	Cattle	YES	0.1	1.5	NON	100.00	WWH	1.000	YES	1.3	Cattle	0.67				0.0	Cattle	0.2	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	0.5	1.3	Dairy	2				0.5	Liquid	0.0	0.03	0.0010	0.01	0.0050 Note 49
Year	N	21	1	1.9	1.9	0	100	1	0	1	1.4	21	0.8	0.2	0.0	0.0	0.2	21	0.6	0.02	0.04	0.02	0.03 Note 47
5	Vol/NH3	Cattle	YES	0.0	0.5	NON	100.00	SBA	1.000	YES	0.5	Cattle	0.65				0.0	Cattle	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.443	0.2	0.5	Dairy	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	21	1	0.6	0.5	0	100	109	0	1	0.4	71	0.0	0.0	0.2	0.0	0.0	71	0.2	0.01	0.01	0.00	0.01 Note 47
6	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	N crop	0.84				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	0.444	0.0	0.1	high N	71				0.0	High	0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	71	1	0.2	0.2	0	100	11	0	1	0.2	21	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.00	0.00	0.00 Note 47
7	Vol/NH3	Green	YES	0.0	0.1	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.400	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	0.1	0.1	0	100	11	0	1	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
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00 Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.443	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	0.68	0.35	0.11	0.03	0.01	0.00	0.00	0.00	0.00	0.00	1.19	1.75	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	3.66	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	3.66	2.56	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.35	0.11	0.03	0.01	0.00	0.00	0.00	0.00	0.00	Total including natural	4.85	3.75	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											22.7	22.7	2.11	3.71	1.79	2.43	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									22.7	22.7	0.23		0.23		Note 45
1-10 N leach			FIRST YEAR		0.0284		0.0183		TOTAL N AMOUNTS IN KG AND % LEACHED									54.8	54.7	1.37		0.41		Note 45
			TOTAL		0.0524		0.0343		TOTAL N AMOUNTS IN KG AND %									100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.1634		0.1069	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	72	0.0	0.0	59.6	0.0	11.3	72	59.6	1.32	2.01	1.07	1.30	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	N crop	0.84				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	0.391	11.3	26.9	low N	72				7.5	Low	0.0	0.67	0.0000	0.20	0.0000	Note 49
Year	N	72	1	59.6	59.6	0	100	11	0	1	44.7	21	15.3	3.6	0.0	0.0	4.9	21	11.7	0.63	1.40	0.56	0.90	Note 47
2	Vol/NH3	Green	YES	0.0	14.9	NON	100.00	WWH	1.000	YES	24.4	Cattle	0.67				0.0	Cattle	0.9	0.16	0.0125	0.16	0.0100	Note 48
	N leach	Low	0.533	1.000		ORG	1.00	1.000	0.657	4.9	24.4	Dairy	2				4.8	Liquid	0.0	0.61	0.0010	0.18	0.0050	Note 49
Year	N	21	1	11.0	10.7	0	100	11	0	1	8.0	21	4.8	1.1	0.0	0.0	0.9	21	3.7	0.11	0.20	0.11	0.16	Note 47
3	Vol/NH3	Cattle	YES	0.2	2.7	NON	100.00	WWH	1.000	YES	2.3	Cattle	0.67				0.0	Cattle	0.3	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	0.9	2.3	Dairy	2				0.9	Liquid	0.0	0.06	0.0010	0.02	0.0050	Note 49
Year	N	21	1	3.4	3.4	0	100	11	0	1	2.5	21	1.5	0.4	0.0	0.0	0.3	21	1.2	0.04	0.06	0.03	0.05	Note 47
4	Vol/NH3	Cattle	YES	0.1	0.8	NON	100.00	WWH	1.000	YES	0.7	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	0.400	0.3	0.7	Dairy	2				0.3	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	21	1	1.1	1.1	0	100	1	0	1	0.8	21	0.4	0.1	0.0	0.0	0.1	21	0.3	0.01	0.02	0.01	0.02	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	SBA	1.000	YES	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	0.443	0.1	0.3	Dairy	2				0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.3	0.3	0	100	109	0	1	0.2	72	0.0	0.0	0.1	0.0	0.0	72	0.1	0.00	0.01	0.00	0.00	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBB	1.000	YES	0.1	N crop	0.84				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	0.444	0.0	0.1	low N	72				0.0	Low	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	72	1	0.1	0.1	0	100	11	0	1	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
7	Vol/NH3	Green	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.1	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	0.657	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	11	0	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	0.0	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.400	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	1	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.0	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.443	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	0.68	0.20	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.97	1.43	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	2.43	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	2.43	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.20	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.97 Total including natural	4.68	3.40	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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							70.9	70.9	1.32	2.01	1.07	1.30	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		0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED							26.9	26.9	0.67		0.20		Note 45
			TOTAL		0.0284	0.0183	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.0284		0.0183	Note 46
Year N		1	1	100.0	100.0	0	100	109	0	1	97.8	8	0.0	0.0	0.0	59.6	11.3	0	0.0	1.32	2.01	1.07	1.30 Note 47
1 Vol/NH3	N	YES		0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Food/	0.84				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	0.391	11.3	26.9	beverage	8					7.5		0.0	0.67	0.0000	0.20	0.0000 Note 49
Year N		0	1	0.0	0.0	0	100	11	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
2 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
3 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
4 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
5 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.403	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	109	0	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
6 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.84				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	0.404	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
7 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
8 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
9 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	8	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00 Note 47
10 Vol/NH3	None	YES		0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Food/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100 Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.403	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	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	1.00	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.01	1.30	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.01	1.30	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	Total including natural	2.69	1.98	Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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							70.9	70.9			1.32	2.01	1.07	1.30	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		0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED							26.9	26.9			0.67		0.20		Note 45
			TOTAL		0.0284	0.0183	TOTAL N AMOUNTS IN KG AND %							100.0	100.0							Note 45
N2O-N/N in food/beverage/fuel/other																			0.0284		0.0183	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	9	0.0	0.0	0.0	0.0	70.9	0	0.0	1.32	2.01	1.07	1.30	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Fuel/	0.84				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	0.391	11.3	26.9	other	9				7.5		0.0	0.67	0.0000	0.20	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
2	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
3	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.403	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	109	0	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.84				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	0.404	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
7	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
8	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
9	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.67				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.357	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	1	0.0	9	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	None	YES	0.0	0.0	NON	100.00	NO	1.000	YES	0.0	Fuel/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.403	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	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	1.00	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.01	1.30	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.01	1.30	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	Total including natural	2.69	1.98	Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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	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							70.9	70.9				1.32	2.01	1.07	1.30	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		0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED							26.9	26.9				0.67		0.20		Note 45
			TOTAL		0.0284	0.0183	TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1786		0.1151	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	-1	0.0	0.0	0.0	0.0	11.3	0	0.0	1.32	2.01	1.07	1.30	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Waste	0.84				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	0.391	11.3	26.9	moved	0				7.5		0.0	0.67	0.0000	0.20	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.403	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	109	0	1	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	YES	0.0	Waste	0.84				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	0.404	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	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.403	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	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	1.00	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	2.01	1.30	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.01	1.30	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	Total including natural	2.69	1.98	Note 51

C2 N CHAIN CALCULATIONS SHEET C: N CHAINS BASED UPON DANISH VALUES CALCULATIONS By Jacob Bugge Available at www.ppo.bugge.com C2

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER BARLEY 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											11.3	11.3	1.32	3.50	1.07	1.74	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		0.0494		0.0246				TOTAL N AMOUNTS IN KG AND % LEACHED							86.5	86.5	2.16		0.65		Note 45
			TOTAL		0.0494		0.0246				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.3109		0.1548	Note 46
Year	N	1	1	100.0	100.0	0	100	109	0	1	97.8	0	0.0	0.0	0.0	0.0	11.3	0	59.6	1.32	3.50	1.07	1.74	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WBB	1.000	YES	26.9	Waste	0.84				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	0.391	11.3	26.9	in field	0				7.5		59.6	2.16	0.0000	0.65	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.403	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	109	0	1	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	YES	0.0	Waste	0.84				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	0.404	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	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.357	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	1	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	YES	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	0.403	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	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	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	3.50	1.74	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.50	1.74	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	Total including natural	4.18	2.42	Note 51

SUMMARY CATTLE DAIRY

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			39.42	39.07	1.95	3.16	1.83	2.35	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			22.35	22.15	0.22		0.22		Note 45
1-10 N leach	FIRST YEAR	0.0294	0.0215	TOTAL N AMOUNTS IN KG AND % LEACHED			39.13	38.79	0.98		0.29		Note 45
	TOTAL	0.0445	0.0331	TOTAL N AMOUNTS IN KG AND %			100.90	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0801		0.0595	Note 46
							Total/year 1						
Area with crop, ha							1.01	1.48					Note 50
Natural background emissions, kg N2O-N/ha:							1.01			4.16		3.35	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			38.22	37.88	2.44	3.66	1.79	2.32	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			22.83	22.63	0.23		0.23		Note 45
1-10 N leach	FIRST YEAR	0.0346	0.0214	TOTAL N AMOUNTS IN KG AND % LEACHED			39.84	39.49	1.00		0.30		Note 45
	TOTAL	0.0517	0.0327	TOTAL N AMOUNTS IN KG AND %			100.89	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0958		0.0606	Note 46
							Total/year 1						
Area with crop, ha							0.96	1.41					Note 50
Natural background emissions, kg N2O-N/ha:							0.96			4.62		3.28	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			34.67	32.24	2.67	4.02	1.64	2.26	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			31.38	29.18	0.31		0.31		Note 45
1-10 N leach	FIRST YEAR	0.0399	0.0214	TOTAL N AMOUNTS IN KG AND % LEACHED			41.50	38.58	1.04		0.31		Note 45
	TOTAL	0.0567	0.0319	TOTAL N AMOUNTS IN KG AND %			107.55	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1159		0.0653	Note 46
							Total/year 1						
Area with crop, ha							0.82	1.21					Note 50
Natural background emissions, kg N2O-N/ha:							0.82			4.84		3.09	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			38.07	38.07	3.09	4.55	2.72	3.20	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			5.97	5.97	0.06		0.06		Note 45
1-10 N leach	FIRST YEAR	0.0402	0.0301	TOTAL N AMOUNTS IN KG AND % LEACHED			55.96	55.96	1.40		0.42		Note 45
	TOTAL	0.0642	0.0451	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1195		0.0840	Note 46
							Total/year 1						
Area with crop, ha							0.84	1.24					Note 50
Natural background emissions, kg N2O-N/ha:							0.84			5.39		4.04	Note 51

SUMMARY CATTLE BEEF

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			37.30	36.95	2.00	3.23	1.88	2.42	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			23.70	23.47	0.24		0.24		Note 45
1-10 N leach	FIRST YEAR	0.0295	0.0216	TOTAL N AMOUNTS IN KG AND % LEACHED			39.96	39.58	1.00		0.30		Note 45
	TOTAL	0.0456	0.0341	TOTAL N AMOUNTS IN KG AND %			100.96	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0867		0.0648	Note 46
							Total/year 1						
Area with crop, ha						1.03	1.51						Note 50
Natural background emissions, kg N2O-N/ha:						1.03				4.26		3.45	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			36.10	35.76	2.51	3.77	1.84	2.38	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			24.17	23.94	0.24		0.24		Note 45
1-10 N leach	FIRST YEAR	0.0349	0.0216	TOTAL N AMOUNTS IN KG AND % LEACHED			40.68	40.30	1.02		0.31		Note 45
	TOTAL	0.0532	0.0336	TOTAL N AMOUNTS IN KG AND %			100.95	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1043		0.0660	Note 46
							Total/year 1						
Area with crop, ha						0.98	1.44						Note 50
Natural background emissions, kg N2O-N/ha:						0.82				4.75		3.36	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			32.60	30.19	2.74	4.13	1.67	2.32	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			33.05	30.61	0.33		0.33		Note 45
1-10 N leach	FIRST YEAR	0.0405	0.0216	TOTAL N AMOUNTS IN KG AND % LEACHED			42.33	39.20	1.06		0.32		Note 45
	TOTAL	0.0583	0.0327	TOTAL N AMOUNTS IN KG AND %			107.98	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1268		0.0711	Note 46
							Total/year 1						
Area with crop, ha						0.83	1.22						Note 50
Natural background emissions, kg N2O-N/ha:						0.83				4.97		3.15	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			36.09	36.09	3.20	4.70	2.82	3.31	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			6.20	6.20	0.06		0.06		Note 45
1-10 N leach	FIRST YEAR	0.0408	0.0307	TOTAL N AMOUNTS IN KG AND % LEACHED			57.71	57.71	1.44		0.43		Note 45
	TOTAL	0.0663	0.0468	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1303		0.0918	Note 46
							Total/year 1						
Area with crop, ha						0.85	1.25						Note 50
Natural background emissions, kg N2O-N/ha:						0.85				5.55		4.17	Note 51

SUMMARY PIG PORK

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			46.96	46.96	1.75	2.79	1.59	2.04 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			19.08	19.08	0.19		0.19	Note 45
1-10 N leach	FIRST YEAR	0.0295	0.0211	TOTAL N AMOUNTS IN KG AND % LEACHED			33.97	33.97	0.85		0.25	Note 45
	TOTAL	0.0394	0.0287	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0594		0.0433 Note 46
							Total/year 1					
Area with crop, ha						0.92	1.35					Note 50
Natural background emissions, kg N2O-N/ha:						0.92				3.71		2.95 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			43.20	42.85	1.96	3.04	1.47	1.97 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			23.88	23.69	0.24		0.24	Note 45
1-10 N leach	FIRST YEAR	0.0335	0.0212	TOTAL N AMOUNTS IN KG AND % LEACHED			33.74	33.46	0.84		0.25	Note 45
	TOTAL	0.0429	0.0277	TOTAL N AMOUNTS IN KG AND %			100.81	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0703		0.0455 Note 46
							Total/year 1					
Area with crop, ha						0.83	1.22					Note 50
Natural background emissions, kg N2O-N/ha:						0.83				3.87		2.79 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			41.34	39.84	2.12	3.22	1.39	1.94 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			30.49	29.38	0.30		0.30	Note 45
1-10 N leach	FIRST YEAR	0.0370	0.0213	TOTAL N AMOUNTS IN KG AND % LEACHED			31.94	30.78	0.80		0.24	Note 45
	TOTAL	0.0455	0.0273	TOTAL N AMOUNTS IN KG AND %			103.77	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0779		0.0468 Note 46
							Total/year 1					
Area with crop, ha						0.79	1.16					Note 50
Natural background emissions, kg N2O-N/ha:						0.79				4.01		2.72 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			48.88	48.88	2.82	4.02	2.47	2.87 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			5.41	5.41	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0382	0.0281	TOTAL N AMOUNTS IN KG AND % LEACHED			45.71	45.71	1.14		0.34	Note 45
	TOTAL	0.0567	0.0405	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0822		0.0587 Note 46
							Total/year 1					
Area with crop, ha						0.88	1.29					Note 50
Natural background emissions, kg N2O-N/ha:						0.88				4.90		3.75 Note 51

SUMMARY POULTRY MEAT

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				50.96	50.96	1.68	2.69	1.50	1.90	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				14.26	14.26	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0292	0.0206	TOTAL N AMOUNTS IN KG AND % LEACHED				34.78	34.78	0.87		0.26		Note 45
	TOTAL	0.0379	0.0269	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.0527		0.0374	Note 46
								Total/year 1						
Area with crop, ha								0.85	1.25					Note 50
Natural background emissions, kg N2O-N/ha:								0.85			3.54		2.75	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				48.00	48.00	1.80	2.81	1.38	1.82	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				19.73	19.73	0.20		0.20		Note 45
1-10 N leach	FIRST YEAR	0.0327	0.0209	TOTAL N AMOUNTS IN KG AND % LEACHED				32.27	32.27	0.81		0.24		Note 45
	TOTAL	0.0396	0.0257	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.0585		0.0379	Note 46
								Total/year 1						
Area with crop, ha								0.80	1.17					Note 50
Natural background emissions, kg N2O-N/ha:								0.80			3.60		2.62	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				45.29	45.18	1.86	2.90	1.30	1.77	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				22.06	22.01	0.22		0.22		Note 45
1-10 N leach	FIRST YEAR	0.0350	0.0212	TOTAL N AMOUNTS IN KG AND % LEACHED				32.89	32.81	0.82		0.25		Note 45
	TOTAL	0.0409	0.0249	TOTAL N AMOUNTS IN KG AND %				100.25	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.0640		0.0390	Note 46
								Total/year 1						
Area with crop, ha								0.74	1.09					Note 50
Natural background emissions, kg N2O-N/ha:								0.74			3.64		2.51	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				50.18	50.18	2.44	3.61	2.11	2.50	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				4.58	4.58	0.05		0.05		Note 45
1-10 N leach	FIRST YEAR	0.0366	0.0265	TOTAL N AMOUNTS IN KG AND % LEACHED				45.24	45.24	1.13		0.34		Note 45
	TOTAL	0.0510	0.0352	TOTAL N AMOUNTS IN KG AND %				100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other											0.0720		0.0498	Note 46
Area with crop, ha	Total/year 1							0.78	1.15					Note 50
Natural background emissions, kg N2O-N/ha:								0.78			4.40		3.28	Note 51

SUMMARY POULTRY EGGS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				35.79	35.79	1.95	3.20	1.83	2.37 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				23.45	23.45	0.23		0.23	Note 45
1-10 N leach	FIRST YEAR	0.0296	0.0218	TOTAL N AMOUNTS IN KG AND % LEACHED				40.77	40.77	1.02		0.31	Note 45
	TOTAL	0.0452	0.0334	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.0895		0.0661 Note 46
								Total/year 1					
Area with crop, ha								0.98	1.44				Note 50
Natural background emissions, kg N2O-N/ha:								0.98			4.18		3.35 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				32.26	32.26	2.14	3.36	1.59	2.18 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				31.79	31.79	0.32		0.32	Note 45
1-10 N leach	FIRST YEAR	0.0350	0.0223	TOTAL N AMOUNTS IN KG AND % LEACHED				35.95	35.95	0.90		0.27	Note 45
	TOTAL	0.0473	0.0308	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1040		0.0676 Note 46
								Total/year 1					
Area with crop, ha								0.88	1.29				Note 50
Natural background emissions, kg N2O-N/ha:								0.88			4.23		3.06 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				29.52	29.40	2.19	3.45	1.44	2.06 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				34.31	34.18	0.34		0.34	Note 45
1-10 N leach	FIRST YEAR	0.0386	0.0228	TOTAL N AMOUNTS IN KG AND % LEACHED				36.57	36.42	0.91		0.27	Note 45
	TOTAL	0.0487	0.0291	TOTAL N AMOUNTS IN KG AND %				100.40	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1168		0.0698 Note 46
								Total/year 1					
Area with crop, ha								0.78	1.14				Note 50
Natural background emissions, kg N2O-N/ha:								0.78			4.22		2.83 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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				35.62	35.62	3.22	4.74	2.84	3.34 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				6.26	6.26	0.06		0.06	Note 45
1-10 N leach	FIRST YEAR	0.0412	0.0311	TOTAL N AMOUNTS IN KG AND % LEACHED				58.12	58.12	1.45		0.44	Note 45
	TOTAL	0.0669	0.0471	TOTAL N AMOUNTS IN KG AND %				100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other											0.1330		0.0938 Note 46
								Total/year 1					
Area with crop, ha								0.86	1.26				Note 50
Natural background emissions, kg N2O-N/ha:								0.86			5.59		4.20 Note 51

SUMMARY SHEEP AND GOATS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			32.12	29.08	3.64	5.40	2.24	2.87 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.58	12.30	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0417	0.0224	TOTAL N AMOUNTS IN KG AND % LEACHED			64.75	58.63	1.62		0.49	Note 45
	TOTAL	0.0762	0.0404	TOTAL N AMOUNTS IN KG AND %			110.45	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1681		0.0892 Note 46
							Total/year 1					
Area with crop, ha						0.96	1.41					Note 50
Natural background emissions, kg N2O-N/ha:						0.96				6.36		3.83 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			29.51	29.51	3.55	5.21	1.79	2.34 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			6.96	6.96	0.07		0.07	Note 45
1-10 N leach	FIRST YEAR	0.0428	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED			63.53	63.53	1.59		0.48	Note 45
	TOTAL	0.0735	0.0330	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1766		0.0792 Note 46
							Total/year 1					
Area with crop, ha						0.89	1.30					Note 50
Natural background emissions, kg N2O-N/ha:						0.89				6.10		3.22 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			23.40	21.37	3.09	4.69	1.86	2.60 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			37.27	34.03	0.37		0.37	Note 45
1-10 N leach	FIRST YEAR	0.0425	0.0227	TOTAL N AMOUNTS IN KG AND % LEACHED			48.84	44.60	1.22		0.37	Note 45
	TOTAL	0.0661	0.0367	TOTAL N AMOUNTS IN KG AND %			109.50	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2003		0.1110 Note 46
							Total/year 1					
Area with crop, ha						0.90	1.32					Note 50
Natural background emissions, kg N2O-N/ha:						0.90				5.58		3.50 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			26.51	26.51	3.71	5.44	2.57	3.14 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			7.30	7.30	0.07		0.07	Note 45
1-10 N leach	FIRST YEAR	0.0436	0.0259	TOTAL N AMOUNTS IN KG AND % LEACHED			66.19	66.19	1.65		0.50	Note 45
	TOTAL	0.0768	0.0443	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.2053		0.1185 Note 46
							Total/year 1					
Area with crop, ha						0.90	1.32					Note 50
Natural background emissions, kg N2O-N/ha:						0.90				6.34		4.04 Note 51

SUMMARY N CROP

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			27.61	27.49	2.25	3.66	1.95	2.56	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			26.93	26.81	0.27		0.27		Note 45
1-10 N leach	FIRST YEAR	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED			45.89	45.70	1.15		0.34		Note 45
	TOTAL	0.0517	0.0362	TOTAL N AMOUNTS IN KG AND %			100.43	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1327		0.0928	Note 46
								Total/year 1					
Area with crop, ha							1.19	1.75					Note 50
Natural background emissions, kg N2O-N/ha:							1.19			4.85		3.75	Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	26.81	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	59.60	Note 47
Relative value of green manure, %	44.99	

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			22.71	22.66	2.11	3.71	1.79	2.43	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			22.71	22.65	0.23		0.23		Note 45
1-10 N leach	FIRST YEAR	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED			54.83	54.69	1.37		0.41		Note 45
	TOTAL	0.0524	0.0343	TOTAL N AMOUNTS IN KG AND %			100.25	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1634		0.1069	Note 46
								Total/year 1					
Area with crop, ha							0.97	1.43					Note 50
Natural background emissions, kg N2O-N/ha:							0.97			4.68		3.40	Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	15.32	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	59.60	Note 47
Relative value of green manure, %	25.71	

SUMMARY FOOD, FUEL, AND WASTE

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			70.87	70.87	1.32	2.01	1.07	1.30	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	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED			26.93	26.93	0.67		0.20		Note 45
	TOTAL	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0284		0.0183	Note 46
							Total/year 1						
Area with crop, ha						0.68	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.68				2.69		1.98	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			70.87	70.87	1.32	2.01	1.07	1.30	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	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED			26.93	26.93	0.67		0.20		Note 45
	TOTAL	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.0284		0.0183	Note 46
							Total/year 1						
Area with crop, ha						0.68	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.68				2.69		1.98	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			70.87	70.87	1.32	2.01	1.07	1.30	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	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND % LEACHED			26.93	26.93	0.67		0.20		Note 45
	TOTAL	0.0284	0.0183	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1786		0.1151	Note 46
							Total/year 1						
Area with crop, ha						0.68	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.68				2.69		1.98	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER BARLEY 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			11.26	11.26	1.32	3.50	1.07	1.74	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	0.0494	0.0246	TOTAL N AMOUNTS IN KG AND % LEACHED			86.54	86.54	2.16		0.65		Note 45
	TOTAL	0.0494	0.0246	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.3109		0.1548	Note 46
							Total/year 1						
Area with crop, ha						0.68	1.00						Note 50
Natural background emissions, kg N2O-N/ha:						0.68				4.18		2.42	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	0.0294	0.0408	0.0214	0.0307
TOTAL	0.0445	0.0663	0.0319	0.0468

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.16	4.70	2.26	3.31

	MIN	MAX	MIN	MAX
N2O-N/N in food/beverage/fuel/other				
	0.0801	0.1303	0.0595	0.0918

	MIN	MAX	MIN	MAX
Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	0.82	1.03	0.82	1.25
	4.16	5.55	3.09	4.17

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	0.0295	0.0382	0.0211	0.0281
TOTAL	0.0394	0.0567	0.0273	0.0405

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
2.79	4.02	1.94	2.87

	MIN	MAX	MIN	MAX
N2O-N/N in food/beverage/fuel/other				
	0.0594	0.0822	0.0433	0.0587

	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:	0.79	0.92	0.79	0.92
	3.71	4.90	2.72	3.75

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	0.0292	0.0412	0.0206	0.0311
TOTAL	0.0379	0.0669	0.0249	0.0471

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
2.69	4.74	1.77	3.34

	MIN	MAX	MIN	MAX
N2O-N/N in food/beverage/fuel/other				
	0.0527	0.1330	0.0374	0.0938

	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	0.98	0.74	0.98
	3.54	5.59	2.51	4.20

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	0.0417	0.0436	0.0183	0.0259
TOTAL	0.0661	0.0768	0.0330	0.0443

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.69	5.44	2.34	3.14

	MIN	MAX	MIN	MAX
N2O-N/N in food/beverage/fuel/other				
	0.1681	0.2053	0.0792	0.1185

	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:	0.89	0.96	0.89	0.96
	5.58	6.36	3.22	4.04

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	0.0292	0.0436	0.0183	0.0311
TOTAL	0.0379	0.0768	0.0249	0.0471

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
2.69	5.44	1.77	3.34

	MIN	MAX	MIN	MAX
N2O-N/N in food/beverage/fuel/other				
	0.0527	0.2053	0.0374	0.1185

	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	1.03	0.74	1.25
	3.54	6.36	2.51	4.20