By Jacob Bugge
Version 310308,

Note 33

Crop, fodder/food	WRS	WWH	WWB	WBA	RYE	TRI	SBA	SWH	OAT	MCC	MCW	GRO	GCR	CGR	GHP	GRP	CGR0	CONC	
Crop #	22	11	13	10	14	16	1	2	3	5	216	263	260	261	2520	252	2610	9999	Note 1
<NUE/e>	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.05	0.83	1.33	11.68	0.44	0.81	-2.75	1.00	Note 16
N digestibility, food/fodder crops	0.84	0.67	0.68	0.66	0.62	0.65	0.65	0.67	0.64	0.62	0.63	0.78	0.80	0.80	0.66	0.78	0.80	0.87	Note 4
<NUE/e> addition before cereal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04	0.11	29.21	0.00	0.00	-0.81	0.00	Note 34
<NUE/e> addition from straw	0.09	0.07	0.07	0.08	0.11	0.10	0.08	0.05	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	160	309	199	21	132	132	-87		Note 14

The header row of this table ends with Note 1.

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>	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	Note 16
N digestibility, other crop parts	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.83	Note 4
<NUE/e> addition before cereal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Note 34
<NUE/e> addition from straw	0.09	0.07	0.07	0.08	0.11	0.10	0.08	0.05	0.07	0.00	Note 34
Recalculated N norm, kg N/ha	144	157	198	147	117	141	118	118	93	140	Note 14

The header row of this table ends with Note 1.

<NUE/e> amounts from crop res	0.02	0.07	0.06	0.05	0.10	0.09	0.06	0.08	0.06	0.14	0.04	0.04	0.13	1.28	0.15	0.15	-0.30	Note 34
<NUE/e> amounts from N fixation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	7.97	0.00	0.00	-2.70	Note 34

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

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

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

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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						24.6		24.5			1.60	3.29	1.42	2.03	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						13.7		13.7			0.14		0.14		Note 45
1-10	N leach		FIRST YEAR		0.0517		0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED						62.2		61.8			1.55		0.47		Note 45
			TOTAL		0.0671		0.0413	TOTAL N AMOUNTS IN KG AND %						100.5		100.0							Note 45
N2O-N/N in food/beverage/fuel/other																				0.1336		0.0823	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	21	28.2	1.27	2.54	1.13	1.54	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	2.3	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050	Note 49
Year	N	21	1	26.4	25.8	0	100	11	0	1	19.3	21	7.2	1.7	0.0	0.0	1.3	21	5.5	0.26	0.61	0.23	0.39	Note 47
2	Vol/NH3	Cattle	YES	0.6	6.4	NON	100.00	WWH	1.000	YES	10.8	Cattle	0.67				0.0	Cattle	0.4	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	1.3	10.8	Dairy	2				1.3	Liquid	0.0	0.27	0.0010	0.08	0.0050	Note 49
Year	N	21	1	5.2	5.0	0	100	11	0	1	3.8	21	1.4	0.3	0.0	0.0	0.3	21	1.1	0.05	0.12	0.05	0.08	Note 47
3	Vol/NH3	Cattle	YES	0.1	1.3	NON	100.00	WWH	1.000	YES	2.1	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.3	2.1	Dairy	2				0.3	Liquid	0.0	0.05	0.0010	0.02	0.0050	Note 49
Year	N	21	1	1.0	1.0	0	100	1	0	1	0.7	21	0.3	0.1	0.0	0.0	0.1	21	0.2	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.1	0.4	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.2	0.2	0	100	10	0	1	0.1	21	0.1	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	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	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	11	0	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
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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	11	0	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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	1	0	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	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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.27	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.29	2.03	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	3.29	2.03	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.88	Total including natural	4.17	2.91	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL AND CATTLE DAIRY Note 43
AND CONTINUING WITH SEPARATED CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							24.3	24.1				1.89	3.58	1.41	2.02	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					14.3	14.2				0.14		0.14		Note 45
1-10 N leach			FIRST YEAR		0.0567		0.0313		TOTAL N AMOUNTS IN KG AND % LEACHED					62.0	61.7				1.55		0.46		Note 45
			TOTAL		0.0730		0.0411		TOTAL N AMOUNTS IN KG AND %					100.5	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1476		0.0831	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	22	28.2	1.53	2.78	1.14	1.54 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.4	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050 Note 49
Year	N	22	1	27.2	24.9	0	100	11	0	1	18.7	21	6.5	1.5	0.0	0.0	1.3	22	4.9	0.30	0.66	0.23	0.40 Note 47
2	Vol/NH3	Cattle	YES	2.3	6.2	NON	100.00	WWH	1.000	YES	10.9	Cattle	0.67				0.0	Cattle	0.2	0.09	0.0125	0.09	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	1.3	10.9	Dairy	2				1.3	Sep	0.0	0.27	0.0105	0.08	0.0050 Note 49
Year	N	22	1	4.8	4.4	0	100	11	0	1	3.3	21	1.1	0.3	0.0	0.0	0.2	22	0.9	0.05	0.12	0.04	0.07 Note 47
3	Vol/NH3	Cattle	YES	0.4	1.1	NON	100.00	WWH	1.000	YES	1.9	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.2	1.9	Dairy	2				0.2	Sep	0.0	0.05	0.0105	0.01	0.0050 Note 49
Year	N	22	1	0.8	0.8	0	100	1	0	1	0.6	21	0.2	0.0	0.0	0.0	0.0	22	0.2	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Cattle	YES	0.1	0.2	NON	100.00	SBA	1.000	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	0.653	0.0	0.3	Dairy	2				0.0	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.1	0.1	0	100	10	0	1	0.1	21	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.1	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	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	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Dairy	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.24	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.58	2.02	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.58	2.02	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.13	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.86	Total including natural	4.44	2.87	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL AND CATTLE DAIRY Note 43
AND CONTINUING WITH CATTLE DEEP LITTER TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							23.1	22.1				2.08	3.81	1.34	2.01	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							20.4	19.5				0.20		0.20		Note 45
1-10 N leach			FIRST YEAR		0.0619	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED							61.2	58.5				1.53		0.46		Note 45
			TOTAL		0.0777	0.0409	TOTAL N AMOUNTS IN KG AND %							104.7	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1650		0.0869	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	23	28.2	1.78	3.03	1.13	1.54	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.7	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050	Note 49
Year	N	23	1	30.7	21.5	0	100	11	0	1	16.1	21	3.9	0.9	0.0	0.0	1.1	23	3.0	0.27	0.70	0.19	0.42	Note 47
2	Vol/NH3	Cattle	YES	9.2	5.4	NON	100.00	WWH	1.000	YES	11.1	Cattle	0.67				0.0	Cattle	0.2	0.15	0.0125	0.15	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	1.1	11.1	Dairy	2				1.1	Deep	0.0	0.28	0.0200	0.08	0.0050	Note 49
Year	N	23	1	3.2	2.3	0	100	11	0	1	1.7	21	0.4	0.1	0.0	0.0	0.1	23	0.3	0.03	0.07	0.02	0.04	Note 47
3	Vol/NH3	Cattle	YES	1.0	0.6	NON	100.00	WWH	1.000	YES	1.2	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.1	1.2	Dairy	2				0.1	Deep	0.0	0.03	0.0200	0.01	0.0050	Note 49
Year	N	23	1	0.3	0.2	0	100	1	0	1	0.2	21	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.01	0.00	0.00	Note 47
4	Vol/NH3	Cattle	YES	0.1	0.1	NON	100.00	SBA	1.000	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	0.760	0.0	0.1	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	229	1	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	WRB	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	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	1	0	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	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	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	1.13	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
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	3.81	2.01	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.81	2.01	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.78	Total including natural	4.60	2.79	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL AND CATTLE DAIRY Note 43
AND CONTINUING WITH MANURE FROM GRAZING CATTLE TO PRODUCE WINTER WHEAT FOR CATTLE DAIRY Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Amounts Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Fodder: Uses #21-61 Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 1996 Total	N2O-N emission IPCC 2006 Each	N2O-N emission IPCC 2006 Total	Note 44
Total	N		RATIO OF N2O-N TO N IN FIRST CROP					TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED						24.3		24.3	2.31	4.13	1.98	2.56	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						4.5		4.5	0.04		0.04		Note 45
1-10	N leach		FIRST YEAR		0.0622		0.0398	TOTAL N AMOUNTS IN KG AND % LEACHED						71.2		71.2	1.78		0.53		Note 45
			TOTAL		0.0842		0.0523	TOTAL N AMOUNTS IN KG AND %						100.0		100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.1697		0.1054	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	21	40.0	11.8	0.0	0.0	9.0	24	28.2	1.81	3.05	1.57	1.95	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Dairy	2				1.9	Graz	0.0	1.22	0.0200	0.37	0.0200	Note 49
Year	N	24	1	28.2	28.2	0	100	11	0	1	26.2	21	5.1	1.2	0.0	0.0	1.8	24	3.9	0.43	0.93	0.36	0.53	Note 47
2	Vol/NH3	Cattle	YES	0.0	2.0	NON	100.00	WWH	1.000	YES	19.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	1.8	19.3	Dairy	2				1.8	Graz	0.0	0.48	0.0200	0.15	0.0200	Note 49
Year	N	24	1	3.9	3.9	0	100	11	0	1	3.6	21	0.7	0.2	0.0	0.0	0.2	24	0.5	0.06	0.13	0.05	0.07	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	YES	2.7	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.2	2.7	Dairy	2				0.2	Graz	0.0	0.07	0.0200	0.02	0.0200	Note 49
Year	N	24	1	0.5	0.5	0	100	1	0	1	0.5	21	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.4	Dairy	2				0.0	Graz	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.1	0.1	0	100	10	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	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	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	1	0	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	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	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.14	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.13	2.56	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.13	2.56	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.79	Total including natural	4.92	3.36	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL AND CATTLE BEEF Note 43
AND CONTINUING WITH LIQUID CATTLE MANURE TO PRODUCE WINTER WHEAT FOR CATTLE BEEF Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP				TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED							23.2	23.1				1.62	3.34	1.45	2.06	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.4	14.3				0.14		0.14		Note 45
1-10 N leach			FIRST YEAR		0.0517		0.0316				TOTAL N AMOUNTS IN KG AND % LEACHED			62.9	62.6				1.57		0.47		Note 45
			TOTAL		0.0680		0.0421				TOTAL N AMOUNTS IN KG AND %			100.5	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1439		0.0890	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	21	29.6	1.27	2.54	1.14	1.55	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	2.4	0.05	0.0125	0.05	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050	Note 49
Year	N	21	1	27.7	27.0	0	100	11	0	1	20.3	22	7.6	1.6	0.0	0.0	1.4	21	6.0	0.28	0.64	0.25	0.41	Note 47
2	Vol/NH3	Cattle	YES	0.6	6.8	NON	100.00	WWH	1.000	YES	11.3	Cattle	0.67				0.0	Cattle	0.5	0.08	0.0125	0.08	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	1.4	11.3	Beef	2				1.4	Liquid	0.0	0.28	0.0010	0.08	0.0050	Note 49
Year	N	21	1	5.6	5.5	0	100	11	0	1	4.1	22	1.5	0.3	0.0	0.0	0.3	21	1.2	0.06	0.13	0.05	0.08	Note 47
3	Vol/NH3	Cattle	YES	0.1	1.4	NON	100.00	WWH	1.000	YES	2.3	Cattle	0.67				0.0	Cattle	0.1	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.3	2.3	Beef	2				0.3	Liquid	0.0	0.06	0.0010	0.02	0.0050	Note 49
Year	N	21	1	1.1	1.1	0	100	1	0	1	0.8	22	0.3	0.1	0.0	0.0	0.1	21	0.2	0.01	0.03	0.01	0.02	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	SBA	1.000	YES	0.5	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.1	0.5	Beef	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.2	0.2	0	100	10	0	1	0.2	22	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.00	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.1	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	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	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	11	0	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
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	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	11	0	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	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	1	0	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	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	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Beef	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89	1.29	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
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	3.34	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	3.34	2.06	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.89	Total including natural	4.23	2.96	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											22.8	22.7	1.93	3.64	1.43	2.05 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									15.0	14.9	0.15		0.15	Note 45
1-10 N leach			FIRST YEAR		0.0570		0.0315		TOTAL N AMOUNTS IN KG AND % LEACHED									62.8	62.4	1.57		0.47	Note 45
			TOTAL		0.0743		0.0419		TOTAL N AMOUNTS IN KG AND %									100.5	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1596		0.0899 Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	22	29.6	1.54	2.80	1.14	1.54 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.5	0.04	0.0125	0.04	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050 Note 49
Year	N	22	1	28.6	26.1	0	100	11	0	1	19.6	22	6.8	1.4	0.0	0.0	1.3	22	5.4	0.32	0.69	0.24	0.42 Note 47
2	Vol/NH3	Cattle	YES	2.4	6.5	NON	100.00	WWH	1.000	YES	11.5	Cattle	0.67				0.0	Cattle	0.3	0.09	0.0125	0.09	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	1.3	11.5	Beef	2				1.3	Sep	0.0	0.29	0.0105	0.09	0.0050 Note 49
Year	N	22	1	5.2	4.8	0	100	11	0	1	3.6	22	1.2	0.3	0.0	0.0	0.2	22	1.0	0.06	0.13	0.04	0.08 Note 47
3	Vol/NH3	Cattle	YES	0.4	1.2	NON	100.00	WWH	1.000	YES	2.1	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.2	2.1	Beef	2				0.2	Sep	0.0	0.05	0.0105	0.02	0.0050 Note 49
Year	N	22	1	0.9	0.9	0	100	1	0	1	0.6	22	0.2	0.0	0.0	0.0	0.1	22	0.2	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Cattle	YES	0.1	0.2	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.1	0.4	Beef	2				0.0	Sep	0.0	0.01	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.2	0.2	0	100	10	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.1	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	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	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	11	0	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
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	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	22	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016		ORG	1.00	1.000	0.653	0.0	0.0	Beef	2				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.25	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.64	2.05	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.64	2.05	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.87	Total including natural	4.51	2.92	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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							21.7	20.7				2.12	3.88	1.36	2.04	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							21.4	20.4				0.21		0.21		Note 45
1-10 N leach			FIRST YEAR		0.0624	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED							61.9	59.0				1.55		0.46		Note 45
			TOTAL		0.0792	0.0416	TOTAL N AMOUNTS IN KG AND %							105.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1789		0.0940	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	23	29.6	1.80	3.06	1.14	1.55	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	1.8	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050	Note 49
Year	N	23	1	32.2	22.6	0	100	11	0	1	16.9	22	4.1	0.8	0.0	0.0	1.2	23	3.2	0.29	0.73	0.20	0.44	Note 47
2	Vol/NH3	Cattle	YES	9.7	5.6	NON	100.00	WWH	1.000	YES	11.7	Cattle	0.67				0.0	Cattle	0.2	0.16	0.0125	0.16	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	1.2	11.7	Beef	2				1.1	Deep	0.0	0.29	0.0200	0.09	0.0050	Note 49
Year	N	23	1	3.5	2.5	0	100	11	0	1	1.8	22	0.4	0.1	0.0	0.0	0.1	23	0.4	0.03	0.08	0.02	0.05	Note 47
3	Vol/NH3	Cattle	YES	1.1	0.6	NON	100.00	WWH	1.000	YES	1.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.1	1.3	Beef	2				0.1	Deep	0.0	0.03	0.0200	0.01	0.0050	Note 49
Year	N	23	1	0.4	0.3	0	100	1	0	1	0.2	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.1	0.1	NON	100.00	SBA	1.000	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	0.760	0.0	0.1	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	229	1	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	WRB	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	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	1	0	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	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	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	23	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.159		ORG	1.00	1.000	0.760	0.0	0.0	Beef	2				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.14	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.88	2.04	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.88	2.04	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.79	Total including natural	4.67	2.83	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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	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							23.0	23.0				2.36	4.22	2.04	2.63	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	0.0628	0.0404		TOTAL N AMOUNTS IN KG AND % LEACHED							72.4	72.4				1.81		0.54		Note 45
			TOTAL	0.0861	0.0536		TOTAL N AMOUNTS IN KG AND %							100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1839		0.1145	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	22	40.0	10.4	0.0	0.0	9.0	24	29.6	1.84	3.08	1.59	1.98	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Cattle	0.84				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Beef	2				1.9	Graz	0.0	1.22	0.0200	0.37	0.0200	Note 49
Year	N	24	1	29.6	29.6	0	100	11	0	1	27.5	22	5.3	1.1	0.0	0.0	1.9	24	4.2	0.45	0.98	0.38	0.56	Note 47
2	Vol/NH3	Cattle	YES	0.0	2.1	NON	100.00	WWH	1.000	YES	20.3	Cattle	0.67				0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	1.9	20.3	Beef	2				1.9	Graz	0.0	0.51	0.0200	0.15	0.0200	Note 49
Year	N	24	1	4.2	4.2	0	100	11	0	1	3.9	22	0.8	0.2	0.0	0.0	0.3	24	0.6	0.06	0.14	0.05	0.08	Note 47
3	Vol/NH3	Cattle	YES	0.0	0.3	NON	100.00	WWH	1.000	YES	2.9	Cattle	0.67				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.3	2.9	Beef	2				0.3	Graz	0.0	0.07	0.0200	0.02	0.0200	Note 49
Year	N	24	1	0.6	0.6	0	100	1	0	1	0.6	22	0.1	0.0	0.0	0.0	0.0	24	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.4	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	10	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	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	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	1	0	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	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	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	24	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Beef	2				0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.22	2.63	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	4.22	2.63	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	5.02	3.43	Note 51

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N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											29.8	29.8	1.50	3.07	1.30	1.86 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							12.4	12.4	0.12		0.12	Note 45
1-10 N leach			FIRST YEAR		0.0518		0.0310				TOTAL N AMOUNTS IN KG AND % LEACHED							57.8	57.8	1.45		0.43	Note 45
			TOTAL		0.0625		0.0380				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1029		0.0625	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	31	23.3	1.27	2.54	1.10	1.52 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Pig	0.84				0.0	Pig	3.3	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050 Note 49
Year	N	31	1	20.0	19.5	0	100	11	0	1	14.6	32	5.8	2.4	0.0	0.0	1.0	31	3.4	0.20	0.45	0.17	0.29 Note 47
2	Vol/NH3	Pig	YES	0.5	4.9	NON	100.00	WWH	1.000	YES	7.8	Pig	0.67				0.0	Pig	0.5	0.06	0.0125	0.06	0.0100 Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	1.0	7.8	Pork	3				1.0	Liquid	0.0	0.19	0.0010	0.06	0.0050 Note 49
Year	N	31	1	2.9	2.8	0	100	11	0	1	2.1	32	0.9	0.4	0.0	0.0	0.1	31	0.5	0.03	0.07	0.03	0.04 Note 47
3	Vol/NH3	Pig	YES	0.1	0.7	NON	100.00	WWH	1.000	YES	1.1	Pig	0.67				0.0	Pig	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.1	1.1	Pork	3				0.1	Liquid	0.0	0.03	0.0010	0.01	0.0050 Note 49
Year	N	31	1	0.4	0.4	0	100	1	0	1	0.3	32	0.1	0.1	0.0	0.0	0.0	31	0.1	0.00	0.01	0.00	0.01 Note 47
4	Vol/NH3	Pig	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.2	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.2	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	31	1	0.1	0.1	0	100	10	0	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
5	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	31	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WRB	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	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	31	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	31	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	31	1	0.0	0.0	0	100	1	0	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	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	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	31	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	Pork	3				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.21	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O	Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.07	1.86 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.07	1.86 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.84	Total including natural	3.90	2.70 Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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						28.5	28.4	1.64	3.20	1.25	1.83	Note 45	
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						15.8	15.7	0.16		0.16		Note 45	
1-10 N leach			FIRST YEAR		0.0556		0.0311	TOTAL N AMOUNTS IN KG AND % LEACHED						56.2	56.0	1.41		0.42		Note 45	
			TOTAL		0.0653		0.0372	TOTAL N AMOUNTS IN KG AND %						100.5	100.0					Note 45	
N2O-N/N in food/beverage/fuel/other																			0.1124		0.0641	Note 46	
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	32	23.3	1.45	2.73	1.10	1.53 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Pig	0.84				0.0	Pig	4.2	0.06	0.0125	0.06	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050 Note 49
Year	N	32	1	19.5	15.4	0	100	11	0	1	11.5	32	4.0	1.7	0.0	0.0	0.8	32	2.3	0.17	0.43	0.13	0.27 Note 47
2	Vol/NH3	Pig	YES	4.2	3.8	NON	100.00	WWH	1.000	YES	6.7	Pig	0.67				0.0	Pig	0.4	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.8	6.7	Pork	3				0.8	Sep	0.0	0.17	0.0105	0.05	0.0050 Note 49
Year	N	32	1	2.0	1.5	0	100	11	0	1	1.2	32	0.4	0.2	0.0	0.0	0.1	32	0.2	0.02	0.04	0.01	0.03 Note 47
3	Vol/NH3	Pig	YES	0.4	0.4	NON	100.00	WWH	1.000	YES	0.7	Pig	0.67				0.0	Pig	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.1	0.7	Pork	3				0.1	Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year	N	32	1	0.2	0.2	0	100	1	0	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
4	Vol/NH3	Pig	YES	0.0	0.0	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	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.1	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.0	0.0	0	100	10	0	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
5	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.0	0.0	0	100	229	1	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	WRB	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	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year	N	32	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.024		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.13	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.20	1.83	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.20	1.83	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.79	Total including natural	3.99	2.61	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											27.8	27.2	1.75	3.31	1.20	1.81 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									20.2	19.8	0.20		0.20	Note 45
1-10 N leach			FIRST YEAR		0.0590		0.0313		TOTAL N AMOUNTS IN KG AND % LEACHED									54.4	53.1	1.36		0.41	Note 45
			TOTAL		0.0676		0.0369		TOTAL N AMOUNTS IN KG AND %									102.4	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																					0.1191		0.0651 Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	33	23.3	1.59	2.89	1.09	1.53 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Pig	0.84				0.0	Pig	5.8	0.08	0.0125	0.08	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	33	1	19.7	11.8	0	100	11	0	1	8.9	32	3.1	1.3	0.0	0.0	0.6	33	1.8	0.14	0.39	0.10	0.25 Note 47
2	Vol/NH3	Pig	YES	7.9	3.0	NON	100.00	WWH	1.000	YES	5.2	Pig	0.67				0.0	Pig	0.4	0.11	0.0125	0.11	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.6	5.2	Pork	3				0.6	Deep	0.0	0.13	0.0200	0.04	0.0050 Note 49
Year	N	33	1	1.5	0.9	0	100	11	0	1	0.7	32	0.2	0.1	0.0	0.0	0.0	33	0.1	0.01	0.03	0.01	0.02 Note 47
3	Vol/NH3	Pig	YES	0.6	0.2	NON	100.00	WWH	1.000	YES	0.4	Pig	0.67				0.0	Pig	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.4	Pork	3				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.1	0.1	0	100	1	0	1	0.1	32	0.0	0.0	0.0	0.0	0.0	33	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	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	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.0	0.0	0	100	229	1	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	WRB	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	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	33	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.867	1.127		ORG	1.00	1.000	0.653	0.0	0.0	Pork	3				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.10	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.31	1.81	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	3.31	1.81	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	Total including natural	4.08	2.57	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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							30.5	30.5	2.13	3.81	1.83	2.36	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							4.1	4.1	0.04		0.04		Note 45
1-10 N leach			FIRST YEAR		0.0602	0.0378	TOTAL N AMOUNTS IN KG AND % LEACHED							65.4	65.4	1.63		0.49		Note 45
			TOTAL		0.0777	0.0481	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																	0.1249		0.0773	Note 46
Year N	1	1	100.0	100.0	0	100	229	1	1	97.8	32	40.0	16.7	0.0	0.0	9.0	34	23.3	1.71	2.95	1.47	1.85	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Pig	0.84				0.0	Pig	0.0	0.02	0.0125	0.02	0.0100	Note 48
N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Pork	3				1.9	Root	0.0	1.22	0.0200	0.37	0.0200	Note 49
Year N	34	1	23.3	23.3	0	100	11	0	1	21.7	32	6.1	2.5	0.0	0.0	1.5	34	3.5	0.36	0.73	0.31	0.43	Note 47
2 Vol/NH3	Pig	YES	0.0	1.6	NON	100.00	WWH	1.000	YES	14.1	Pig	0.67				0.0	Pig	0.0	0.02	0.0125	0.02	0.0100	Note 48
N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	1.5	14.1	Pork	3				1.5	Root	0.0	0.35	0.0200	0.11	0.0200	Note 49
Year N	34	1	3.5	3.5	0	100	11	0	1	3.3	32	0.9	0.4	0.0	0.0	0.2	34	0.5	0.05	0.11	0.05	0.06	Note 47
3 Vol/NH3	Pig	YES	0.0	0.2	NON	100.00	WWH	1.000	YES	2.1	Pig	0.67				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.2	2.1	Pork	3				0.2	Root	0.0	0.05	0.0200	0.02	0.0200	Note 49
Year N	34	1	0.5	0.5	0	100	1	0	1	0.5	32	0.1	0.1	0.0	0.0	0.0	34	0.1	0.01	0.02	0.01	0.01	Note 47
4 Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.3	Pig	0.65				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.3	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	10	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
5 Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	1	0.0	0.0	0	100	229	1	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
6 Vol/NH3	Pig	YES	0.0	0.0	NON	100.00	WRB	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	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	1	0.0	0.0	0	100	11	0	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	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	1	0.0	0.0	0	100	11	0	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	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	1	0.0	0.0	0	100	1	0	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	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	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Pig	0.66				0.0	Pig	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach	Root	0.699	1.000		ORG	1.00	1.000	0.720	0.0	0.0	Pork	3				0.0	Root	0.0	0.00	0.0200	0.00	0.0200	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.17	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.81	2.36	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.81	2.36	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	4.62	3.17	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											33.0	33.0	1.46	2.99	1.26	1.79	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							9.7	9.7	0.10		0.10		Note 45
1-10 N leach			FIRST YEAR		0.0515		0.0305				TOTAL N AMOUNTS IN KG AND % LEACHED							57.3	57.3	1.43		0.43		Note 45
			TOTAL		0.0610		0.0364				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0905		0.0541	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	41	19.6	1.26	2.52	1.09	1.50	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	2.0	0.04	0.0125	0.04	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050	Note 49
Year	N	41	1	17.6	17.3	0	100	11	0	1	13.0	42	4.5	2.3	0.0	0.0	0.9	41	2.2	0.17	0.41	0.15	0.26	Note 47
2	Vol/NH3	Poultry	YES	0.4	4.3	NON	100.00	WWH	1.000	YES	7.6	Poultry	0.67				0.0	Poultry	0.2	0.05	0.0125	0.05	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.9	7.6	Meat	4				0.9	Liquid	0.0	0.19	0.0010	0.06	0.0050	Note 49
Year	N	41	1	2.0	1.9	0	100	11	0	1	1.5	42	0.5	0.3	0.0	0.0	0.1	41	0.2	0.02	0.05	0.02	0.03	Note 47
3	Vol/NH3	Poultry	YES	0.0	0.5	NON	100.00	WWH	1.000	YES	0.9	Poultry	0.67				0.0	Poultry	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.1	0.9	Meat	4				0.1	Liquid	0.0	0.02	0.0010	0.01	0.0050	Note 49
Year	N	41	1	0.2	0.2	0	100	1	0	1	0.2	42	0.1	0.0	0.0	0.0	0.0	41	0.0	0.00	0.01	0.00	0.00	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.1	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.1	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	10	0	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
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	229	1	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	WRB	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	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		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	2.99	1.79	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	2.99	1.79	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	3.79	2.58	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											31.9	31.9	1.55	3.05	1.19	1.74	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							13.3	13.3	0.13		0.13		Note 45
1-10 N leach			FIRST YEAR		0.0549		0.0308				TOTAL N AMOUNTS IN KG AND % LEACHED							54.7	54.7	1.37		0.41		Note 45
			TOTAL		0.0622		0.0354				TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.0955		0.0543	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	42	19.6	1.40	2.69	1.07	1.51	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	4.9	0.07	0.0125	0.07	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050	Note 49
Year	N	42	1	14.7	12.5	0	100	11	0	1	9.4	42	3.2	1.7	0.0	0.0	0.6	42	1.6	0.14	0.33	0.11	0.21	Note 47
2	Vol/NH3	Poultry	YES	2.2	3.1	NON	100.00	WWH	1.000	YES	5.5	Poultry	0.67				0.0	Poultry	0.4	0.06	0.0125	0.06	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.6	5.5	Meat	4				0.6	Sep	0.0	0.14	0.0105	0.04	0.0050	Note 49
Year	N	42	1	1.2	1.0	0	100	11	0	1	0.8	42	0.3	0.1	0.0	0.0	0.1	42	0.1	0.01	0.03	0.01	0.02	Note 47
3	Vol/NH3	Poultry	YES	0.2	0.3	NON	100.00	WWH	1.000	YES	0.4	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.1	0.4	Meat	4				0.1	Sep	0.0	0.01	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.1	0.1	0	100	1	0	1	0.1	42	0.0	0.0	0.0	0.0	0.0	42	0.0	0.00	0.00	0.00	0.00	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	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	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	229	1	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	WRB	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	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Meat	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	1.11	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.05	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	0.00	Total anthropogenic	3.05	1.74	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	Total including natural	3.82	2.50	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											30.9	30.9	1.59	3.10	1.15	1.70 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.2	15.1	0.15		0.15	Note 45
1-10 N leach			FIRST YEAR		0.0571		0.0311				TOTAL N AMOUNTS IN KG AND % LEACHED							54.1	54.0	1.35		0.41	Note 45
			TOTAL		0.0632		0.0347				TOTAL N AMOUNTS IN KG AND %							100.2	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1002		0.0551	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	43	19.6	1.48	2.80	1.06	1.53 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	7.8	0.10	0.0125	0.10	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	43	1	11.9	9.8	0	100	11	0	1	7.4	42	1.8	0.9	0.0	0.0	0.5	43	0.9	0.11	0.29	0.08	0.17 Note 47
2	Vol/NH3	Poultry	YES	2.1	2.5	NON	100.00	WWH	1.000	YES	5.1	Poultry	0.67				0.0	Poultry	0.3	0.05	0.0125	0.05	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.5	5.1	Meat	4				0.5	Deep	0.0	0.13	0.0200	0.04	0.0050 Note 49
Year	N	43	1	0.5	0.4	0	100	11	0	1	0.3	42	0.1	0.0	0.0	0.0	0.0	43	0.0	0.00	0.01	0.00	0.01 Note 47
3	Vol/NH3	Poultry	YES	0.1	0.1	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	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.2	Meat	4				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	1	0	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
4	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	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	229	1	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	WRB	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	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	1	0	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	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	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Meat	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	1.06	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.10	1.70	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	3.10	1.70	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	Total including natural	3.83	2.44	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											32.8	32.8	1.94	3.57	1.65	2.16 Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							3.7	3.7	0.04		0.04	Note 45
1-10 N leach			FIRST YEAR		0.0587		0.0363				TOTAL N AMOUNTS IN KG AND % LEACHED							63.5	63.5	1.59		0.48	Note 45
			TOTAL		0.0727		0.0441				TOTAL N AMOUNTS IN KG AND %							100.0	100.0				Note 45
N2O-N/N in food/beverage/fuel/other																				0.1088		0.0659	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	42	40.0	20.4	0.0	0.0	9.0	44	19.6	1.64	2.88	1.39	1.78 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Meat	4				1.9	Scrap	0.0	1.22	0.0200	0.37	0.0200 Note 49
Year	N	44	1	19.6	19.6	0	100	11	0	1	18.2	42	3.5	1.8	0.0	0.0	1.3	44	1.7	0.28	0.63	0.23	0.35 Note 47
2	Vol/NH3	Poultry	YES	0.0	1.4	NON	100.00	WWH	1.000	YES	13.4	Poultry	0.67				0.0	Poultry	0.0	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	1.3	13.4	Meat	4				1.2	Scrap	0.0	0.34	0.0200	0.10	0.0200 Note 49
Year	N	44	1	1.7	1.7	0	100	11	0	1	1.6	42	0.3	0.2	0.0	0.0	0.1	44	0.2	0.02	0.06	0.02	0.03 Note 47
3	Vol/NH3	Poultry	YES	0.0	0.1	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	0.806	0.1	1.2	Meat	4				0.1	Scrap	0.0	0.03	0.0200	0.01	0.0200 Note 49
Year	N	44	1	0.2	0.2	0	100	1	0	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
4	Vol/NH3	Poultry	YES	0.0	0.0	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	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.0	0.0	0	100	10	0	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
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.0	0.0	0	100	229	1	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	WRB	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	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.0	0.0	0	100	1	0	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	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	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49
Year	N	44	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Meat	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	1.09	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.57	2.16	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.57	2.16	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.76	Total including natural	4.33	2.92	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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						22.4	22.4	1.60	3.32	1.43	2.05	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						14.6	14.6	0.15		0.15		Note 45
1-10 N leach			FIRST YEAR		0.0519	0.0317		TOTAL N AMOUNTS IN KG AND % LEACHED						63.0	63.0	1.57		0.47		Note 45
			TOTAL		0.0678	0.0418		TOTAL N AMOUNTS IN KG AND %						100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.1484		0.0915	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	41	30.4	1.27	2.54	1.14	1.56 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	3.0	0.05	0.0125	0.05	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Liquid	0.0	1.22	0.0010	0.37	0.0050 Note 49
Year	N	41	1	27.3	26.8	0	100	11	0	1	20.1	43	7.0	1.7	0.0	0.0	1.4	41	5.3	0.27	0.64	0.24	0.41 Note 47
2	Vol/NH3	Poultry	YES	0.5	6.7	NON	100.00	WWH	1.000	YES	11.7	Poultry	0.67				0.0	Poultry	0.5	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	1.4	11.7	Eggs	4				1.4	Liquid	0.0	0.29	0.0010	0.09	0.0050 Note 49
Year	N	41	1	4.8	4.7	0	100	11	0	1	3.5	43	1.2	0.3	0.0	0.0	0.2	41	0.9	0.05	0.11	0.04	0.07 Note 47
3	Vol/NH3	Poultry	YES	0.1	1.2	NON	100.00	WWH	1.000	YES	2.0	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.2	2.0	Eggs	4				0.2	Liquid	0.0	0.05	0.0010	0.02	0.0050 Note 49
Year	N	41	1	0.8	0.8	0	100	1	0	1	0.6	43	0.2	0.1	0.0	0.0	0.0	41	0.2	0.01	0.02	0.01	0.01 Note 47
4	Vol/NH3	Poultry	YES	0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.4	Eggs	4				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.1	0.1	0	100	10	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	41	0.0	0.00	0.00	0.00	0.00 Note 47
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.1	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WRB	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	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49
Year	N	41	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Liquid	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.25	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.32	2.05	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.32	2.05	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.87	Total including natural	4.19	2.92	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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								21.2	21.2	1.74	3.41	1.31	1.95	Note 45
Year	N NH3							ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3								20.3	20.3	0.20		0.20		Note 45
1-10	N leach							FIRST YEAR	0.0571	0.0322	TOTAL N AMOUNTS IN KG AND % LEACHED								58.5	58.5	1.46		0.44		Note 45
								TOTAL	0.0694	0.0398	TOTAL N AMOUNTS IN KG AND %								100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.1605		0.0921	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	42	30.4	1.48	2.80	1.12	1.58	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	7.6	0.10	0.0125	0.10	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Sep	0.0	1.22	0.0105	0.37	0.0050	Note 49
Year	N	42	1	22.8	19.4	0	100	11	0	1	14.5	43	5.0	1.2	0.0	0.0	1.0	42	3.8	0.22	0.53	0.17	0.33	Note 47
2	Vol/NH3	Poultry	YES	3.4	4.8	NON	100.00	WWH	1.000	YES	8.5	Poultry	0.67				0.0	Poultry	1.0	0.09	0.0125	0.09	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	1.0	8.5	Eggs	4				1.0	Sep	0.0	0.21	0.0105	0.06	0.0050	Note 49
Year	N	42	1	2.9	2.4	0	100	11	0	1	1.8	43	0.6	0.2	0.0	0.0	0.1	42	0.5	0.03	0.07	0.02	0.04	Note 47
3	Vol/NH3	Poultry	YES	0.4	0.6	NON	100.00	WWH	1.000	YES	1.1	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.1	1.1	Eggs	4				0.1	Sep	0.0	0.03	0.0105	0.01	0.0050	Note 49
Year	N	42	1	0.4	0.3	0	100	1	0	1	0.2	43	0.1	0.0	0.0	0.0	0.0	42	0.1	0.00	0.01	0.00	0.01	Note 47
4	Vol/NH3	Poultry	YES	0.1	0.1	NON	100.00	SBA	1.000	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	0.653	0.0	0.1	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	10	0	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
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	229	1	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	WRB	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	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	11	0	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	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	1	0	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	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	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49
Year	N	42	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Sep	0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.0	Eggs	4				0.0	Sep	0.0	0.00	0.0105	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.17	Note 50

Possible additional non IPCC N2O-N emissions	Value												Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.41	1.95	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.41	1.95	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	Total including natural	4.22	2.77	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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						20.2	20.2	1.80	3.46	1.23	1.89	Note 45
Year N NH3			ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3						22.8	22.7	0.23		0.23		Note 45
1-10 N leach			FIRST YEAR		0.0606	0.0327		TOTAL N AMOUNTS IN KG AND % LEACHED						57.2	57.1	1.43		0.43		Note 45
			TOTAL		0.0705	0.0385		TOTAL N AMOUNTS IN KG AND %						100.3	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.1709		0.0934	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	43	30.4	1.61	2.97	1.09	1.60 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	12.1	0.14	0.0125	0.14	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	43	1	18.5	15.2	0	100	11	0	1	11.4	43	2.7	0.7	0.0	0.0	0.8	43	2.1	0.18	0.45	0.13	0.27 Note 47
2	Vol/NH3	Poultry	YES	3.2	3.8	NON	100.00	WWH	1.000	YES	7.9	Poultry	0.67				0.0	Poultry	0.8	0.08	0.0125	0.08	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.8	7.9	Eggs	4				0.8	Deep	0.0	0.20	0.0200	0.06	0.0050 Note 49
Year	N	43	1	1.3	1.0	0	100	11	0	1	0.8	43	0.2	0.0	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	0.5	Poultry	0.67				0.0	Poultry	0.1	0.01	0.0125	0.01	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.1	0.5	Eggs	4				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.1	0.1	0	100	1	0	1	0.1	43	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00 Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	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	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	229	1	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	WRB	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	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	1	0	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	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	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	43	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.013		ORG	1.00	1.000	0.760	0.0	0.0	Eggs	4				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.09	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.46	1.89	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.46	1.89	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Total including natural	4.21	2.64	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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			22.5	22.5				2.39	4.25	2.06	2.65	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.7	4.7				0.05		0.05		Note 45
1-10 N leach			FIRST YEAR		0.0631		0.0407				TOTAL N AMOUNTS IN KG AND % LEACHED			72.9	72.9				1.82		0.55		Note 45
			TOTAL		0.0867		0.0541				TOTAL N AMOUNTS IN KG AND %			100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.1894		0.1181	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	43	40.0	9.6	0.0	0.0	9.0	44	30.4	1.85	3.09	1.61	2.00	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Poultry	0.84				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Eggs	4				1.9	Scrap	0.0	1.22	0.0200	0.37	0.0200	Note 49
Year	N	44	1	30.4	30.4	0	100	11	0	1	28.2	43	5.5	1.3	0.0	0.0	1.9	44	4.1	0.46	1.00	0.39	0.57	Note 47
2	Vol/NH3	Poultry	YES	0.0	2.1	NON	100.00	WWH	1.000	YES	20.8	Poultry	0.67				0.0	Poultry	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	1.9	20.8	Eggs	4				1.9	Scrap	0.0	0.52	0.0200	0.16	0.0200	Note 49
Year	N	44	1	4.1	4.1	0	100	11	0	1	3.9	43	0.7	0.2	0.0	0.0	0.3	44	0.6	0.06	0.14	0.05	0.08	Note 47
3	Vol/NH3	Poultry	YES	0.0	0.3	NON	100.00	WWH	1.000	YES	2.8	Poultry	0.67				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.3	2.8	Eggs	4				0.3	Scrap	0.0	0.07	0.0200	0.02	0.0200	Note 49
Year	N	44	1	0.6	0.6	0	100	1	0	1	0.5	43	0.1	0.0	0.0	0.0	0.0	44	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	0.4	Poultry	0.65				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.4	Eggs	4				0.0	Scrap	0.0	0.01	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.1	0.1	0	100	10	0	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
5	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Poultry	YES	0.0	0.0	NON	100.00	WRB	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	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.0	0.0	0	100	1	0	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	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	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49
Year	N	44	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Poultry	0.66				0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Eggs	4				0.0	Scrap	0.0	0.00	0.0200	0.00	0.0200	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.15	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.25	2.65	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	4.25	2.65	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.80	Total including natural	5.05	3.45	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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			19.1	18.0				2.55	4.59	1.65	2.32	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006					TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			8.7	8.2				0.09		0.09		Note 45
1-10 N leach			FIRST YEAR		0.0637		0.0323					TOTAL N AMOUNTS IN KG AND % LEACHED			78.2	73.8				1.95		0.59		Note 45
			TOTAL		0.0935		0.0473					TOTAL N AMOUNTS IN KG AND %			105.9	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																					0.2399		0.1213	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	51	40.0	5.7	0.0	0.0	9.0	53	34.3	1.83	3.12	1.15	1.59	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Sheep	0.84				0.0	Sheep	5.1	0.07	0.0125	0.07	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/mutt	5				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050	Note 49
Year	N	53	1	33.9	33.9	0	100	11	0	1	33.9	51	8.1	1.2	0.0	0.0	2.3	53	7.0	0.57	1.17	0.40	0.58	Note 47
2	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	23.4	Sheep	0.67				0.0	Sheep	1.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	2.3	23.4	Milk/mutt	5				2.3	Deep	0.0	0.59	0.0200	0.18	0.0050	Note 49
Year	N	53	1	6.9	6.9	0	100	11	0	1	6.9	51	1.7	0.2	0.0	0.0	0.5	53	1.4	0.12	0.24	0.08	0.12	Note 47
3	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WWH	1.000	YES	4.8	Sheep	0.67				0.0	Sheep	0.2	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.5	4.8	Milk/mutt	5				0.5	Deep	0.0	0.12	0.0200	0.04	0.0050	Note 49
Year	N	53	1	1.4	1.4	0	100	1	0	1	1.4	51	0.3	0.0	0.0	0.0	0.1	53	0.3	0.02	0.05	0.02	0.02	Note 47
4	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	SBA	1.000	YES	1.0	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.1	1.0	Milk/mutt	5				0.1	Deep	0.0	0.02	0.0200	0.01	0.0050	Note 49
Year	N	53	1	0.3	0.3	0	100	10	0	1	0.3	51	0.1	0.0	0.0	0.0	0.0	53	0.1	0.00	0.01	0.00	0.00	Note 47
5	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.2	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.2	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	53	1	0.1	0.1	0	100	229	1	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
6	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WRB	1.000	YES	0.0	Sheep	0.84				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	53	1	0.0	0.0	0	100	11	0	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
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	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	53	1	0.0	0.0	0	100	11	0	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
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	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	53	1	0.0	0.0	0	100	1	0	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	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	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year	N	53	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/mutt	5				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.23	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.59	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	4.59	2.32	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.85 Total including natural	5.44	3.17	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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										18.4	18.4	2.56	4.53	1.41	2.04	Note 45
Year	N NH3		ACCORDING TO		IPCC 1996	IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										5.0	5.0	0.05		0.05		Note 45
1-10	N leach		FIRST YEAR		0.0647	0.0283		TOTAL N AMOUNTS IN KG AND % LEACHED										76.6	76.6	1.91		0.57		Note 45
			TOTAL		0.0923	0.0415		TOTAL N AMOUNTS IN KG AND %										100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.2465		0.1108	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	51	40.0	5.7	0.0	0.0	9.0	54	34.3	1.93	3.17	1.00	1.39	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Sheep	0.84				0.0	Sheep	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/mutt	5				1.9	Graz	0.0	1.22	0.0200	0.37	0.0000	Note 49
Year	N	54	1	34.3	34.3	0	100	11	0	1	31.9	51	6.2	0.9	0.0	0.0	2.2	54	5.3	0.53	1.14	0.35	0.55	Note 47
2	Vol/NH3	Sheep	YES	0.0	2.4	NON	100.00	WWH	1.000	YES	23.5	Sheep	0.67				0.0	Sheep	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	2.2	23.5	Milk/mutt	5				2.1	Graz	0.0	0.59	0.0200	0.18	0.0000	Note 49
Year	N	54	1	5.3	5.3	0	100	11	0	1	4.9	51	1.0	0.1	0.0	0.0	0.3	54	0.8	0.08	0.18	0.05	0.08	Note 47
3	Vol/NH3	Sheep	YES	0.0	0.4	NON	100.00	WWH	1.000	YES	3.6	Sheep	0.67				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.3	3.6	Milk/mutt	5				0.3	Graz	0.0	0.09	0.0200	0.03	0.0000	Note 49
Year	N	54	1	0.8	0.8	0	100	1	0	1	0.8	51	0.1	0.0	0.0	0.0	0.1	54	0.1	0.01	0.03	0.01	0.01	Note 47
4	Vol/NH3	Sheep	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.6	Sheep	0.65				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.1	0.6	Milk/mutt	5				0.0	Graz	0.0	0.01	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.1	0.1	0	100	10	0	1	0.1	51	0.0	0.0	0.0	0.0	0.0	54	0.0	0.00	0.00	0.00	0.00	Note 47
5	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Sheep	YES	0.0	0.0	NON	100.00	WRB	1.000	YES	0.0	Sheep	0.84				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.0	0.0	0	100	1	0	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	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	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49
Year	N	54	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Sheep	0.66				0.0	Sheep	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/mutt	5				0.0	Graz	0.0	0.00	0.0200	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.18	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.53	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	4.53	2.04	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	5.34	2.85	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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									15.3	14.5	2.31	4.22	1.47	2.20	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									23.5	22.2	0.23		0.23		Note 45
1-10 N leach			FIRST YEAR		0.0643		0.0326	TOTAL N AMOUNTS IN KG AND % LEACHED									67.0	63.3	1.67		0.50		Note 45
			TOTAL		0.0860		0.0449	TOTAL N AMOUNTS IN KG AND %									105.8	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2756		0.1439	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	61	40.0	3.8	0.0	0.0	9.0	63	36.2	1.86	3.16	1.15	1.60 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Goat	0.84				0.0	Goat	5.4	0.08	0.0125	0.08	0.0100 Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/meat	6				1.9	Deep	0.0	1.22	0.0200	0.37	0.0050 Note 49
Year	N	63	1	35.7	30.4	0	100	11	0	1	22.8	61	5.5	0.5	0.0	0.0	1.6	63	4.9	0.39	0.92	0.27	0.52 Note 47
2	Vol/NH3	Goat	YES	5.4	7.6	NON	100.00	WWH	1.000	YES	15.7	Goat	0.67				0.0	Goat	0.7	0.14	0.0125	0.14	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	1.6	15.7	Milk/meat	6				1.5	Deep	0.0	0.39	0.0200	0.12	0.0050 Note 49
Year	N	63	1	4.9	4.1	0	100	11	0	1	3.1	61	0.7	0.1	0.0	0.0	0.2	63	0.7	0.05	0.13	0.04	0.07 Note 47
3	Vol/NH3	Goat	YES	0.7	1.0	NON	100.00	WWH	1.000	YES	2.2	Goat	0.67				0.0	Goat	0.1	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.2	2.2	Milk/meat	6				0.2	Deep	0.0	0.05	0.0200	0.02	0.0050 Note 49
Year	N	63	1	0.7	0.6	0	100	1	0	1	0.4	61	0.1	0.0	0.0	0.0	0.0	63	0.1	0.01	0.02	0.00	0.01 Note 47
4	Vol/NH3	Goat	YES	0.1	0.1	NON	100.00	SBA	1.000	YES	0.3	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.3	Milk/meat	6				0.0	Deep	0.0	0.01	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.1	0.1	0	100	10	0	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
5	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.0	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WRB	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	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.0	0.0	0	100	11	0	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	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.0	0.0	0	100	1	0	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	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	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49
Year	N	63	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Deep	0.600	1.162		ORG	1.00	1.000	0.760	0.0	0.0	Milk/meat	6				0.0	Deep	0.0	0.00	0.0200	0.00	0.0050 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.19	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.22	2.20	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.22	2.20	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.83	Total including natural	5.04	3.03	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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							16.4				16.4	2.65	4.66	1.87	2.51	Note 45
Year	N NH3		ACCORDING TO	IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							5.2				5.2	0.05		0.05		Note 45
1-10	N leach		FIRST YEAR	0.0655		0.0357	TOTAL N AMOUNTS IN KG AND % LEACHED							78.4				78.4	1.96		0.59		Note 45
			TOTAL	0.0950		0.0511	TOTAL N AMOUNTS IN KG AND %							100.0				100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2839		0.1530	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	61	40.0	3.8	0.0	0.0	9.0	64	36.2	1.97	3.21	1.36	1.75	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	Goat	0.84				0.0	Goat	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000		ORG	1.00	1.000	0.591	9.0	48.8	Milk/meat	6				1.9	Graz	0.0	1.22	0.0200	0.37	0.0100	Note 49
Year	N	64	1	36.2	36.2	0	100	11	0	1	33.6	61	6.5	0.6	0.0	0.0	2.3	64	5.9	0.57	1.21	0.42	0.63	Note 47
2	Vol/NH3	Goat	YES	0.0	2.5	NON	100.00	WWH	1.000	YES	24.8	Goat	0.67				0.0	Goat	0.0	0.03	0.0125	0.03	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	2.3	24.8	Milk/meat	6				2.3	Graz	0.0	0.62	0.0200	0.19	0.0100	Note 49
Year	N	64	1	5.9	5.9	0	100	11	0	1	5.5	61	1.1	0.1	0.0	0.0	0.4	64	1.0	0.09	0.20	0.07	0.10	Note 47
3	Vol/NH3	Goat	YES	0.0	0.4	NON	100.00	WWH	1.000	YES	4.0	Goat	0.67				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.4	4.0	Milk/meat	6				0.4	Graz	0.0	0.10	0.0200	0.03	0.0100	Note 49
Year	N	64	1	1.0	1.0	0	100	1	0	1	0.9	61	0.2	0.0	0.0	0.0	0.1	64	0.2	0.01	0.03	0.01	0.02	Note 47
4	Vol/NH3	Goat	YES	0.0	0.1	NON	100.00	SBA	1.000	YES	0.6	Goat	0.65				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.1	0.6	Milk/meat	6				0.1	Graz	0.0	0.02	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.2	0.2	0	100	10	0	1	0.1	61	0.0	0.0	0.0	0.0	0.0	64	0.0	0.00	0.01	0.00	0.00	Note 47
5	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.1	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.0	0.0	0	100	229	1	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
6	Vol/NH3	Goat	YES	0.0	0.0	NON	100.00	WRB	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	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.0	0.0	0	100	11	0	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
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	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.0	0.0	0	100	11	0	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	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.0	0.0	0	100	1	0	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	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	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49
Year	N	64	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Goat	0.66				0.0	Goat	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000		ORG	1.00	1.000	0.806	0.0	0.0	Milk/meat	6				0.0	Graz	0.0	0.00	0.0200	0.00	0.0100	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.19	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	4.66	2.51	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	4.66	2.51	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.82	Total including natural	5.48	3.33	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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											14.9	14.9	1.75	3.65	1.45	2.13	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006				TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3							15.7	15.7	0.16		0.16		Note 45
1-10 N leach			FIRST YEAR		0.0507		0.0283				TOTAL N AMOUNTS IN KG AND % LEACHED							69.6	69.4	1.74		0.52		Note 45
			TOTAL		0.0744		0.0435				TOTAL N AMOUNTS IN KG AND %							100.2	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																					0.2450		0.1432	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	71	0.0	0.0	40.0	0.0	9.0	71	40.0	1.25	2.49	1.00	1.39	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	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	0.591	9.0	48.8	high N	71				1.9	High	0.0	1.22	0.0000	0.37	0.0000	Note 49
Year	N	71	1	40.0	40.0	0	100	11	0	1	30.0	21	11.2	2.6	0.0	0.0	2.1	21	8.6	0.41	0.93	0.36	0.60	Note 47
2	Vol/NH3	Green	YES	0.0	10.0	NON	100.00	WWH	1.000	YES	16.7	Cattle	0.67				0.0	Cattle	0.7	0.11	0.0125	0.11	0.0100	Note 48
	N leach	High	0.933	1.000		ORG	1.00	1.000	0.627	2.1	16.7	Dairy	2				2.0	Liquid	0.0	0.42	0.0010	0.13	0.0050	Note 49
Year	N	21	1	8.0	7.8	0	100	11	0	1	5.9	21	2.2	0.5	0.0	0.0	0.4	21	1.7	0.08	0.18	0.07	0.12	Note 47
3	Vol/NH3	Cattle	YES	0.2	2.0	NON	100.00	WWH	1.000	YES	3.3	Cattle	0.67				0.0	Cattle	0.1	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.4	3.3	Dairy	2				0.4	Liquid	0.0	0.08	0.0010	0.02	0.0050	Note 49
Year	N	21	1	1.6	1.5	0	100	1	0	1	1.1	21	0.4	0.1	0.0	0.0	0.1	21	0.3	0.02	0.04	0.01	0.02	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.4	NON	100.00	SBA	1.000	YES	0.6	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.1	0.6	Dairy	2				0.1	Liquid	0.0	0.02	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.3	0.3	0	100	10	0	1	0.2	21	0.1	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.00	Note 47
5	Vol/NH3	Cattle	YES	0.0	0.1	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.1	0.1	0	100	229	1	1	0.0	71	0.0	0.0	0.0	0.0	0.0	71	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	1.000	YES	0.0	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	0.627	0.0	0.0	high N	71				0.0	High	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	71	1	0.0	0.0	0	100	11	0	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
7	Vol/NH3	Green	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	High	0.933	1.000		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	11	0	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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	1	0	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	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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.23	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.99	1.42	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.65	2.13	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.65	2.13	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.23	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	Total including natural	4.63	3.12	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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									13.3	13.3	1.71	3.66	1.40	2.09	Note 45
Year N NH3			ACCORDING TO		IPCC 1996		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									14.2	14.2	0.14		0.14		Note 45
1-10 N leach			FIRST YEAR		0.0507		0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED									72.6	72.6	1.82		0.54		Note 45
			TOTAL		0.0747		0.0425	TOTAL N AMOUNTS IN KG AND %									100.1	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																				0.2762		0.1572	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	72	0.0	0.0	40.0	0.0	9.0	72	40.0	1.25	2.49	1.00	1.39	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	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	0.591	9.0	48.8	low N	72				1.9	Low	0.0	1.22	0.0000	0.37	0.0000	Note 49
Year	N	72	1	40.0	40.0	0	100	11	0	1	30.0	21	6.4	1.5	0.0	0.0	2.1	21	4.9	0.40	1.05	0.35	0.61	Note 47
2	Vol/NH3	Green	YES	0.0	10.0	NON	100.00	WWH	1.000	YES	21.5	Cattle	0.67				0.0	Cattle	0.4	0.10	0.0125	0.10	0.0100	Note 48
	N leach	Low	0.533	1.000		ORG	1.00	1.000	0.787	2.1	21.5	Dairy	2				2.0	Liquid	0.0	0.54	0.0010	0.16	0.0050	Note 49
Year	N	21	1	4.6	4.5	0	100	11	0	1	3.4	21	1.3	0.3	0.0	0.0	0.2	21	1.0	0.05	0.11	0.04	0.07	Note 47
3	Vol/NH3	Cattle	YES	0.1	1.1	NON	100.00	WWH	1.000	YES	1.9	Cattle	0.67				0.0	Cattle	0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.2	1.9	Dairy	2				0.2	Liquid	0.0	0.05	0.0010	0.01	0.0050	Note 49
Year	N	21	1	0.9	0.9	0	100	1	0	1	0.7	21	0.2	0.1	0.0	0.0	0.1	21	0.2	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Cattle	YES	0.0	0.2	NON	100.00	SBA	1.000	YES	0.4	Cattle	0.65				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.1	0.4	Dairy	2				0.0	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.2	0.2	0	100	10	0	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
5	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WBA	1.000	YES	0.1	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.1	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	229	1	1	0.0	72	0.0	0.0	0.0	0.0	0.0	72	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	YES	0.0	0.0	NON	100.00	WRB	1.000	YES	0.0	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	0.627	0.0	0.0	low N	72				0.0	Low	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	72	1	0.0	0.0	0	100	11	0	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
7	Vol/NH3	Green	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	Low	0.533	1.000		ORG	1.00	1.000	0.787	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	11	0	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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	1	0	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	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	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year	N	21	1	0.0	0.0	0	100	10	0	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	WBA	1.000	YES	0.0	Cattle	0.66				0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid	0.933	1.016		ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2				0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.24	Note 50

Possible additional non IPCC N2O-N emissions	Value											Kind of source	Total IPCC and non IPCC N2O		Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Current crops	3.66	2.09	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.66	2.09	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.13	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.86 Total including natural	4.52	2.95	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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							49.0	49.0	1.25	2.49	1.00	1.39	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		0.0507	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED							48.8	48.8	1.22		0.37		Note 45
			TOTAL		0.0507	0.0283	TOTAL N AMOUNTS IN KG AND %							100.0	100.0					Note 45
N2O-N/N in food/beverage/fuel/other																			0.0507		0.0283	Note 46
Year N	1	1	100.0	100.0	0	100	229	1	1	97.8	8	0.0	0.0	0.0	40.0	9.0	0	0.0	1.25	2.49	1.00	1.39	Note 47
1 Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	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	0.591	9.0	48.8	beverage	8				1.9		0.0	1.22	0.0000	0.37	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	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	1	0	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/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	10	0	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/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	229	1	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	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	1	0	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/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year N	0	1	0.0	0.0	0	100	10	0	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/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	beverage	8				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	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	2.49	1.39	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	2.49	1.39	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	Total including natural	3.18	2.08	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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							49.0	49.0				1.25	2.49	1.00	1.39	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		0.0507		0.0283		TOTAL N AMOUNTS IN KG AND % LEACHED					48.8	48.8				1.22		0.37		Note 45
			TOTAL		0.0507		0.0283		TOTAL N AMOUNTS IN KG AND %					100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.0507		0.0283	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	9	0.0	0.0	0.0	0.0	49.0	0	0.0	1.25	2.49	1.00	1.39	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	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	0.591	9.0	48.8	other	9				1.9		0.0	1.22	0.0000	0.37	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	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	1	0	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/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	10	0	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/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	229	1	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	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	1	0	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/	0.65				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	10	0	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/	0.66				0.0	NONE	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	other	9				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	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	2.49	1.39	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	2.49	1.39	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	Total including natural	3.18	2.08	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL AND WASTE DUMPED ELSEWHERE WITHOUT LEACHING Note 43
AND CONTINUING WITH NO MANURE TO PRODUCE NOTHING FOR WASTE, DUMPED ELSEWHERE Note 43

Year	Fertlizer/manure # Name	Store 1/0	Amounts Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop # Name	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use # Name	Fodder: Uses #21-61 Fed	Food	N crop #71/ #72	Food/ bev #8	Fuel/ other #9	Manure handling # Name	Final N a-mounts	N2O-N emission IPCC 1996 Each	Total	N2O-N emission IPCC 2006 Each	Total	Note 44 Note 44 Note 44
Total N			RATIO OF N2O-N TO N IN FIRST CROP					TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED						49.0	49.0				1.25	2.49	1.00	1.39	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		0.0507		0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED						48.8	48.8				1.22		0.37		Note 45
			TOTAL		0.0507		0.0283	TOTAL N AMOUNTS IN KG AND %						100.0	100.0								Note 45
N2O-N/N in food/beverage/fuel/other																				0.2750		0.1536	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	-1	0.0	0.0	0.0	0.0	9.0	0	0.0	1.25	2.49	1.00	1.39	Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	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	0.591	9.0	48.8	moved	0				1.9		0.0	1.22	0.0000	0.37	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	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	1	0	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	0.65				0.0	None	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	10	0	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	0.66				0.0	None	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	229	1	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	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	1	0	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	0.65				0.0	None	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	1	0.0	0.0	0	100	10	0	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	0.66				0.0	None	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	moved	0				0.0		0.0	0.00	0.0000	0.00	0.0000	Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	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	2.49	1.39	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	2.49	1.39	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	Total including natural	3.18	2.08	Note 51

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

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE WINTER RAPESEED FOR PPO/BIODIESEL 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						9.0	9.0		1.25	3.49	1.00	1.69	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		0.0711	0.0344		TOTAL N AMOUNTS IN KG AND % LEACHED						88.8	88.8		2.22		0.67		Note 45
			TOTAL		0.0711	0.0344		TOTAL N AMOUNTS IN KG AND %						100.0	100.0						Note 45
N2O-N/N in food/beverage/fuel/other																			0.3856		0.1868	Note 46
Year	N	1	1	100.0	100.0	0	100	229	1	1	97.8	0	0.0	0.0	0.0	0.0	9.0	0	40.0	1.25	3.49	1.00	1.69 Note 47
1	Vol/NH3	N	YES	0.0	2.2	NON	100.00	WRB	1.000	YES	48.8	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	0.591	9.0	48.8	in field	0				1.9		40.0	2.22	0.0000	0.67	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	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	1	0	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	0.65				0.0	None	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	10	0	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	0.66				0.0	None	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	229	1	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	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	11	0	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	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	1	0	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	0.65				0.0	None	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49
Year	N	0	1	0.0	0.0	0	100	10	0	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	0.66				0.0	None	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach		1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0		0.0	0.00	0.0000	0.00	0.0000 Note 49

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year10	Total	Total/year 1	
Area with crop, ha	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	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	3.49	1.69	Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Total anthropogenic	3.49	1.69	Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	Total including natural	4.18	2.38	Note 51

SUMMARY CATTLE DAIRY

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			24.62	24.50	1.60	3.29	1.42	2.03	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.74	13.67	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0517	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED			62.16	61.84	1.55		0.47		Note 45
	TOTAL	0.0671	0.0413	TOTAL N AMOUNTS IN KG AND %			100.52	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1336		0.0823	Note 46
							Total/year 1						
Area with crop, ha							0.88	1.27					Note 50
Natural background emissions, kg N2O-N/ha:							0.88			4.17		2.91	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			24.26	24.14	1.89	3.58	1.41	2.02	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.27	14.19	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0567	0.0313	TOTAL N AMOUNTS IN KG AND % LEACHED			61.99	61.67	1.55		0.46		Note 45
	TOTAL	0.0730	0.0411	TOTAL N AMOUNTS IN KG AND %			100.52	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1476		0.0831	Note 46
							Total/year 1						
Area with crop, ha							0.86	1.24					Note 50
Natural background emissions, kg N2O-N/ha:							0.86			4.44		2.87	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			23.11	22.07	2.08	3.81	1.34	2.01	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			20.39	19.47	0.20		0.20		Note 45
1-10 N leach	FIRST YEAR	0.0619	0.0314	TOTAL N AMOUNTS IN KG AND % LEACHED			61.21	58.46	1.53		0.46		Note 45
	TOTAL	0.0777	0.0409	TOTAL N AMOUNTS IN KG AND %			104.71	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1650		0.0869	Note 46
							Total/year 1						
Area with crop, ha							0.78	1.13					Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.60		2.79	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			24.33	24.33	2.31	4.13	1.98	2.56	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.49	4.49	0.04		0.04		Note 45
1-10 N leach	FIRST YEAR	0.0622	0.0398	TOTAL N AMOUNTS IN KG AND % LEACHED			71.18	71.18	1.78		0.53		Note 45
	TOTAL	0.0842	0.0523	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.1697		0.1054	Note 46
							Total/year 1						
Area with crop, ha							0.79	1.14					Note 50
Natural background emissions, kg N2O-N/ha:							0.79			4.92		3.36	Note 51

SUMMARY CATTLE BEEF

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			23.18	23.06	1.62	3.34	1.45	2.06 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.42	14.34	0.14		0.14	Note 45
1-10 N leach	FIRST YEAR	0.0517	0.0316	TOTAL N AMOUNTS IN KG AND % LEACHED			62.95	62.60	1.57		0.47	Note 45
	TOTAL	0.0680	0.0421	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1439		0.0890 Note 46
							Total/year 1					
Area with crop, ha							0.89	1.29				Note 50
Natural background emissions, kg N2O-N/ha:							0.89			4.23		2.96 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			22.83	22.71	1.93	3.64	1.43	2.05 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.96	14.88	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0570	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED			62.76	62.41	1.57		0.47	Note 45
	TOTAL	0.0743	0.0419	TOTAL N AMOUNTS IN KG AND %			100.55	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1596		0.0899 Note 46
							Total/year 1					
Area with crop, ha							0.87	1.25				Note 50
Natural background emissions, kg N2O-N/ha:							0.78			4.51		2.92 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			21.71	20.68	2.12	3.88	1.36	2.04 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			21.37	20.36	0.21		0.21	Note 45
1-10 N leach	FIRST YEAR	0.0624	0.0315	TOTAL N AMOUNTS IN KG AND % LEACHED			61.88	58.96	1.55		0.46	Note 45
	TOTAL	0.0792	0.0416	TOTAL N AMOUNTS IN KG AND %			104.96	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1789		0.0940 Note 46
							Total/year 1					
Area with crop, ha							0.79	1.14				Note 50
Natural background emissions, kg N2O-N/ha:							0.79			4.67		2.83 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			22.96	22.96	2.36	4.22	2.04	2.63 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.62	4.62	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0628	0.0404	TOTAL N AMOUNTS IN KG AND % LEACHED			72.43	72.43	1.81		0.54	Note 45
	TOTAL	0.0861	0.0536	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1839		0.1145 Note 46
							Total/year 1					
Area with crop, ha							0.80	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			5.02		3.43 Note 51

SUMMARY PIG PORK

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		29.80	29.80	1.50	3.07	1.30	1.86	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		12.35	12.35	0.12		0.12		Note 45
1-10 N leach	FIRST YEAR	0.0518	0.0310	TOTAL N AMOUNTS IN KG AND % LEACHED		57.84	57.84	1.45		0.43		Note 45
	TOTAL	0.0625	0.0380	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.1029		0.0625	Note 46
							Total/year 1					
Area with crop, ha						0.84	1.21					Note 50
Natural background emissions, kg N2O-N/ha:						0.84			3.90		2.70	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		28.50	28.36	1.64	3.20	1.25	1.83	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		15.77	15.69	0.16		0.16		Note 45
1-10 N leach	FIRST YEAR	0.0556	0.0311	TOTAL N AMOUNTS IN KG AND % LEACHED		56.24	55.95	1.41		0.42		Note 45
	TOTAL	0.0653	0.0372	TOTAL N AMOUNTS IN KG AND %		100.51	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.1124		0.0641	Note 46
							Total/year 1					
Area with crop, ha						0.79	1.13					Note 50
Natural background emissions, kg N2O-N/ha:						0.79			3.99		2.61	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		27.81	27.16	1.75	3.31	1.20	1.81	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		20.23	19.75	0.20		0.20		Note 45
1-10 N leach	FIRST YEAR	0.0590	0.0313	TOTAL N AMOUNTS IN KG AND % LEACHED		54.36	53.09	1.36		0.41		Note 45
	TOTAL	0.0676	0.0369	TOTAL N AMOUNTS IN KG AND %		102.40	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.1191		0.0651	Note 46
							Total/year 1					
Area with crop, ha						0.76	1.10					Note 50
Natural background emissions, kg N2O-N/ha:						0.76			4.08		2.57	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		30.50	30.50	2.13	3.81	1.83	2.36	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		4.12	4.12	0.04		0.04		Note 45
1-10 N leach	FIRST YEAR	0.0602	0.0378	TOTAL N AMOUNTS IN KG AND % LEACHED		65.38	65.38	1.63		0.49		Note 45
	TOTAL	0.0777	0.0481	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.1249		0.0773	Note 46
							Total/year 1					
Area with crop, ha						0.81	1.17					Note 50
Natural background emissions, kg N2O-N/ha:						0.81			4.62		3.17	Note 51

SUMMARY POULTRY MEAT

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			33.03	33.03	1.46	2.99	1.26	1.79 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			9.67	9.67	0.10		0.10	Note 45
1-10 N leach	FIRST YEAR	0.0515	0.0305	TOTAL N AMOUNTS IN KG AND % LEACHED			57.29	57.29	1.43		0.43	Note 45
	TOTAL	0.0610	0.0364	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0905		0.0541 Note 46
							Total/year 1					
Area with crop, ha						0.80	1.15					Note 50
Natural background emissions, kg N2O-N/ha:						0.80				3.79		2.58 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			31.95	31.95	1.55	3.05	1.19	1.74 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			13.33	13.33	0.13		0.13	Note 45
1-10 N leach	FIRST YEAR	0.0549	0.0308	TOTAL N AMOUNTS IN KG AND % LEACHED			54.72	54.72	1.37		0.41	Note 45
	TOTAL	0.0622	0.0354	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.0955		0.0543 Note 46
							Total/year 1					
Area with crop, ha						0.77	1.11					Note 50
Natural background emissions, kg N2O-N/ha:						0.77				3.82		2.50 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			30.92	30.87	1.59	3.10	1.15	1.70 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			15.15	15.13	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0571	0.0311	TOTAL N AMOUNTS IN KG AND % LEACHED			54.09	54.00	1.35		0.41	Note 45
	TOTAL	0.0632	0.0347	TOTAL N AMOUNTS IN KG AND %			100.16	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1002		0.0551 Note 46
							Total/year 1					
Area with crop, ha						0.73	1.06					Note 50
Natural background emissions, kg N2O-N/ha:						0.73				3.83		2.44 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			32.79	32.79	1.94	3.57	1.65	2.16 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			3.70	3.70	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.0587	0.0363	TOTAL N AMOUNTS IN KG AND % LEACHED			63.50	63.50	1.59		0.48	Note 45
	TOTAL	0.0727	0.0441	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1088		0.0659 Note 46
Area with crop, ha	Total/year 1					0.76	1.09					Note 50
Natural background emissions, kg N2O-N/ha:						0.76				4.33		2.92 Note 51

SUMMARY POULTRY EGGS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			22.39	22.39	1.60	3.32	1.43	2.05 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			14.64	14.64	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0519	0.0317	TOTAL N AMOUNTS IN KG AND % LEACHED			62.96	62.96	1.57		0.47	Note 45
	TOTAL	0.0678	0.0418	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1484		0.0915 Note 46
								Total/year 1				
Area with crop, ha							0.87	1.25				Note 50
Natural background emissions, kg N2O-N/ha:							0.87			4.19		2.92 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			21.21	21.21	1.74	3.41	1.31	1.95 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			20.32	20.32	0.20		0.20	Note 45
1-10 N leach	FIRST YEAR	0.0571	0.0322	TOTAL N AMOUNTS IN KG AND % LEACHED			58.46	58.46	1.46		0.44	Note 45
	TOTAL	0.0694	0.0398	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1605		0.0921 Note 46
								Total/year 1				
Area with crop, ha							0.81	1.17				Note 50
Natural background emissions, kg N2O-N/ha:							0.81			4.22		2.77 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			20.24	20.18	1.80	3.46	1.23	1.89 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			22.79	22.73	0.23		0.23	Note 45
1-10 N leach	FIRST YEAR	0.0606	0.0327	TOTAL N AMOUNTS IN KG AND % LEACHED			57.23	57.08	1.43		0.43	Note 45
	TOTAL	0.0705	0.0385	TOTAL N AMOUNTS IN KG AND %			100.25	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1709		0.0934 Note 46
								Total/year 1				
Area with crop, ha							0.75	1.09				Note 50
Natural background emissions, kg N2O-N/ha:							0.75			4.21		2.64 Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			22.46	22.46	2.39	4.25	2.06	2.65 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			4.66	4.66	0.05		0.05	Note 45
1-10 N leach	FIRST YEAR	0.0631	0.0407	TOTAL N AMOUNTS IN KG AND % LEACHED			72.88	72.88	1.82		0.55	Note 45
	TOTAL	0.0867	0.0541	TOTAL N AMOUNTS IN KG AND %			100.00	100.00				Note 45
N2O-N/N in food/beverage/fuel/other										0.1894		0.1181 Note 46
								Total/year 1				
Area with crop, ha							0.80	1.15				Note 50
Natural background emissions, kg N2O-N/ha:							0.80			5.05		3.45 Note 51

SUMMARY SHEEP AND GOATS

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			19.12	18.04	2.55	4.59	1.65	2.32	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			8.66	8.18	0.09		0.09		Note 45
1-10 N leach	FIRST YEAR	0.0637	0.0323	TOTAL N AMOUNTS IN KG AND % LEACHED			78.15	73.78	1.95		0.59		Note 45
	TOTAL	0.0935	0.0473	TOTAL N AMOUNTS IN KG AND %			105.93	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.2399		0.1213	Note 46
								Total/year 1					
Area with crop, ha							0.85	1.23					Note 50
Natural background emissions, kg N2O-N/ha:							0.85			5.44		3.17	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			18.36	18.36	2.56	4.53	1.41	2.04	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			5.04	5.04	0.05		0.05		Note 45
1-10 N leach	FIRST YEAR	0.0647	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED			76.59	76.59	1.91		0.57		Note 45
	TOTAL	0.0923	0.0415	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.2465		0.1108	Note 46
								Total/year 1					
Area with crop, ha							0.82	1.18					Note 50
Natural background emissions, kg N2O-N/ha:							0.82			5.34		2.85	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			15.31	14.47	2.31	4.22	1.47	2.20	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			23.48	22.20	0.23		0.23		Note 45
1-10 N leach	FIRST YEAR	0.0643	0.0326	TOTAL N AMOUNTS IN KG AND % LEACHED			66.98	63.33	1.67		0.50		Note 45
	TOTAL	0.0860	0.0449	TOTAL N AMOUNTS IN KG AND %			105.77	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.2756		0.1439	Note 46
								Total/year 1					
Area with crop, ha							0.83	1.19					Note 50
Natural background emissions, kg N2O-N/ha:							0.83			5.04		3.03	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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			16.40	16.40	2.65	4.66	1.87	2.51	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3			5.22	5.22	0.05		0.05		Note 45
1-10 N leach	FIRST YEAR	0.0655	0.0357	TOTAL N AMOUNTS IN KG AND % LEACHED			78.38	78.38	1.96		0.59		Note 45
	TOTAL	0.0950	0.0511	TOTAL N AMOUNTS IN KG AND %			100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other										0.2839		0.1530	Note 46
								Total/year 1					
Area with crop, ha							0.82	1.19					Note 50
Natural background emissions, kg N2O-N/ha:							0.82			5.48		3.33	Note 51

SUMMARY N CROP

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		14.89	14.87	1.75	3.65	1.45	2.13	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		15.71	15.68	0.16		0.16		Note 45
1-10 N leach	FIRST YEAR	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED		69.56	69.45	1.74		0.52		Note 45
	TOTAL	0.0744	0.0435	TOTAL N AMOUNTS IN KG AND %		100.16	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.2450		0.1432	Note 46
							Total/year 1					
Area with crop, ha						0.99	1.42					Note 50
Natural background emissions, kg N2O-N/ha:						0.99			4.63		3.12	Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	11.20	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	40.00	Note 47
Relative value of green manure, %	28.00	

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		13.27	13.26	1.71	3.66	1.40	2.09	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		14.20	14.19	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED		72.62	72.55	1.82		0.54		Note 45
	TOTAL	0.0747	0.0425	TOTAL N AMOUNTS IN KG AND %		100.09	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.2762		0.1572	Note 46
							Total/year 1					
Area with crop, ha						0.86	1.24					Note 50
Natural background emissions, kg N2O-N/ha:						0.86			4.52		2.95	Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg	6.40	Note 47
N amount in reference crop year 1 after synthetic N fertilizer, kg	40.00	Note 47
Relative value of green manure, %	16.00	

SUMMARY FOOD, FUEL, AND WASTE

N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		49.04	49.04	1.25	2.49	1.00	1.39	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	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED		48.76	48.76	1.22		0.37		Note 45
	TOTAL	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.0507		0.0283	Note 46
							Total/year 1					
Area with crop, ha						0.69	1.00					Note 50
Natural background emissions, kg N2O-N/ha:						0.69			3.18		2.08	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		49.04	49.04	1.25	2.49	1.00	1.39	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	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED		48.76	48.76	1.22		0.37		Note 45
	TOTAL	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.0507		0.0283	Note 46
							Total/year 1					
Area with crop, ha						0.69	1.00					Note 50
Natural background emissions, kg N2O-N/ha:						0.69			3.18		2.08	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		49.04	49.04	1.25	2.49	1.00	1.39	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	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND % LEACHED		48.76	48.76	1.22		0.37		Note 45
	TOTAL	0.0507	0.0283	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.2750		0.1536	Note 46
							Total/year 1					
Area with crop, ha						0.69	1.00					Note 50
Natural background emissions, kg N2O-N/ha:						0.69			3.18		2.08	Note 51
N CHAIN STARTING WITH	N FERTILIZER			TO PRODUCE	WINTER RAPESEED FOR PPO/BIODIESEL 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		9.04	9.04	1.25	3.49	1.00	1.69	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	0.0711	0.0344	TOTAL N AMOUNTS IN KG AND % LEACHED		88.76	88.76	2.22		0.67		Note 45
	TOTAL	0.0711	0.0344	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.3856		0.1868	Note 46
							Total/year 1					
Area with crop, ha						0.69	1.00					Note 50
Natural background emissions, kg N2O-N/ha:						0.69			4.18		2.38	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	0.0517	0.0628	0.0313	0.0404
TOTAL	0.0671	0.0861	0.0409	0.0536

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.29	4.22	2.01	2.63

	N2O-N/N in food/beverage/fuel/other			
MIN	0.1336	0.0823		
MAX	0.1839	0.1145		

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX				
	0.78	0.89	0.78	1.15	4.17	5.02	2.79	3.43

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	0.0518	0.0602	0.0310	0.0378
TOTAL	0.0625	0.0777	0.0369	0.0481

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
3.07	3.81	1.81	2.36

	N2O-N/N in food/beverage/fuel/other			
MIN	0.1029	0.0625		
MAX	0.1249	0.0773		

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX				
	0.76	0.84	0.76	0.84	3.90	4.62	2.57	3.17

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	0.0515	0.0631	0.0305	0.0407
TOTAL	0.0610	0.0867	0.0347	0.0541

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
2.99	4.25	1.7	2.65

	N2O-N/N in food/beverage/fuel/other			
MIN	0.0905	0.0541		
MAX	0.1894	0.1181		

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX				
	0.73	0.87	0.73	0.87	3.79	5.05	2.44	3.45

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	0.0637	0.0655	0.0283	0.0357
TOTAL	0.0860	0.0950	0.0415	0.0511

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
4.22	4.66	2.04	2.51

	N2O-N/N in food/beverage/fuel/other			
MIN	0.2399	0.1108		
MAX	0.2839	0.1530		

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX				
	0.82	0.85	0.82	0.85	5.04	5.48	2.85	3.33

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	0.0515	0.0655	0.0283	0.0407
TOTAL	0.0610	0.0950	0.0347	0.0541

N2O-N emission IPCC 1996 MIN	N2O-N emission IPCC 1996 MAX	N2O-N emission IPCC 2006 MIN	N2O-N emission IPCC 2006 MAX
2.99	4.66	1.70	2.65

	N2O-N/N in food/beverage/fuel/other			
MIN	0.0905	0.0541		
MAX	0.2839	0.1530		

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:	MIN	MAX	MIN	MAX				
	0.73	0.89	0.73	1.15	3.79	5.48	2.44	3.45