

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

Year Fertilizer/manure Fertilizer/manure Or- Nnorm Crop Crop Straw Straw Fuel/ Fuel/
Store Amounts Store Amounts ganic propor # use & use other
Name 1/0 Store Field 1/0 tion, % Name 1/0 leach leach #9 #8 #9

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED									
	ACCORDING TO					IPCC 1996					TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									
	FIRST YEAR					IPCC 2006					TOTAL N AMOUNTS IN KG AND % LEACHED									
	TOTAL					0.0786					TOTAL N AMOUNTS IN KG AND %									

N2O-N/N in food/beverage/fuel/other

Year	N	1	0	100.0	100.0	0	100	109	0	0	97.8	21	40.0	11.8	0.0	0.0	0.0	0.0	22	28.2	1.66	3.14	1.27
1	Vol/NH3	N	NO	0.0	0.0	2.2 NON	100.00 WBB	1.000	NO	1.000	57.8 Cattle	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.04	0.0125	0.04
	N leach			1.022	1.000	ORG	1.00 1.000	0.591	0.0	0.591	57.8 Dairy	2	2	0.0	0.0	0.0	12.6 Sep	0.0	0.0	0.0	1.45	0.0105	0.43
Year	N	22	0	27.2	0.0	27.2	0 100 11	11	0	0	20.4	21	7.1	1.7	0.0	0.0	0.0	0.0	22	5.4	0.34	0.75	0.26
2	Vol/NH3	Cattle	NO	0.0	0.0	6.8 NON	100.00 WWH	1.000	NO	1.000	13.3 Cattle	0.67	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.07	0.0125	0.07
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	13.3 Dairy	2	2	0.0	0.0	0.0	2.8 Sep	0.0	0.0	0.0	0.33	0.0105	0.10
Year	N	22	0	5.2	0.0	5.2	0 100 11	11	0	0	3.9	21	1.4	0.3	0.0	0.0	0.0	0.0	22	1.0	0.07	0.14	0.05
3	Vol/NH3	Cattle	NO	0.0	0.0	1.3 NON	100.00 WWH	1.000	NO	1.000	2.6 Cattle	0.67	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.01	0.0125	0.01
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	2.6 Dairy	2	2	0.0	0.0	0.0	0.5 Sep	0.0	0.0	0.0	0.06	0.0105	0.02
Year	N	22	0	1.0	0.0	1.0	0 100 11	11	0	0	0.8	21	0.3	0.1	0.0	0.0	0.0	0.0	22	0.2	0.01	0.03	0.01
4	Vol/NH3	Cattle	NO	0.0	0.0	0.3 NON	100.00 WWH	1.000	NO	1.000	0.5 Cattle	0.67	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.5 Dairy	2	2	0.0	0.0	0.0	0.1 Sep	0.0	0.0	0.0	0.01	0.0105	0.00
Year	N	22	0	0.2	0.0	0.2	0 100 1	1	0	0	0.1	21	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.01	0.00
5	Vol/NH3	Cattle	NO	0.0	0.0	0.0 NON	100.00 SBA	1.000	NO	1.000	0.1 Cattle	0.65	0.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.1 Dairy	2	2	0.0	0.0	0.0	0.0 Sep	0.0	0.0	0.0	0.00	0.0105	0.00
Year	N	22	0	0.0	0.0	0.0	0 100 109	109	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00
6	Vol/NH3	Cattle	NO	0.0	0.0	0.0 NON	100.00 WBB	1.000	NO	1.000	0.0 Cattle	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.0 Dairy	2	2	0.0	0.0	0.0	0.0 Sep	0.0	0.0	0.0	0.00	0.0105	0.00
Year	N	22	0	0.0	0.0	0.0	0 100 11	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00
7	Vol/NH3	Cattle	NO	0.0	0.0	0.0 NON	100.00 WWH	1.000	NO	1.000	0.0 Cattle	0.67	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.0 Dairy	2	2	0.0	0.0	0.0	0.0 Sep	0.0	0.0	0.0	0.00	0.0105	0.00
Year	N	22	0	0.0	0.0	0.0	0 100 11	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00
8	Vol/NH3	Cattle	NO	0.0	0.0	0.0 NON	100.00 WWH	1.000	NO	1.000	0.0 Cattle	0.67	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.0 Dairy	2	2	0.0	0.0	0.0	0.0 Sep	0.0	0.0	0.0	0.00	0.0105	0.00
Year	N	22	0	0.0	0.0	0.0	0 100 11	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00
9	Vol/NH3	Cattle	NO	0.0	0.0	0.0 NON	100.00 WWH	1.000	NO	1.000	0.0 Cattle	0.67	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.0 Dairy	2	2	0.0	0.0	0.0	0.0 Sep	0.0	0.0	0.0	0.00	0.0105	0.00
Year	N	22	0	0.0	0.0	0.0	0 100 1	1	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00
10	Vol/NH3	Cattle	NO	0.0	0.0	0.0 NON	100.00 SBA	1.000	NO	1.000	0.0 Cattle	0.65	0.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00
	N leach	Sep		1.016	1.016	ORG	1.00 1.000	0.653	0.0	0.653	0.0 Dairy	2	2	0.0	0.0	0.0	0.0 Sep	0.0	0.0	0.0	0.00	0.0105	0.00

Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.15 0.03 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.86 1.27 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00
Total IPCC and non IPCC N2O 4.07
2.28 Note 51
2.28 Note 51
3.14 Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN STARTING WITH N FERTILIZER TO PRODUCE TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND CATTLE DAIRY
AND CONTINUING WITH CATTLE DEEP LITTER AND CONTINUING WITH CATTLE DEEP LITTER WINTER WHEAT FOR CATTLE DAIRY

Year Fertilizer/manure Fertilizer/manure Or- Nnorm Crop Crop Straw Straw Cereal Cereal Fuel/ Fuel/
Store Amounts Store Amounts ganic propor # use & use & benefit bev other
Name 1/0 Store Field 1/0 1/0 Name 1/0 leach leach 1/0 1/0 Name Fed #72 #8 #9 #9

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	12.7
Year N NH3	ACCORDING TO IPCC 1996 IPCC 2006										13.2	12.6
1-10 N leach	FIRST YEAR 0.0849 0.0435										78.4	74.7
	TOTAL 0.1120 0.0582										105.0	100.0

N2O-N/N in food/beverage/fuel/other 0.3359 0.1746 Note 46

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	21	40.0	11.8	0.0	0.0	0.0	0.0	23	28.2	1.91	3.39	1.27	1.74
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Cattle	0.84						Cattle	1.7	0.04	0.0125	0.04	Note 48
	N leach			1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	Dairy	2					12.6	Deep	0.0	1.45	0.0200	0.43	Note 49
Year 2	N	23	0	30.7	30.7	0	100	11	0	0	23.0	21	5.5	1.3	0.0	0.0	0.0	0.0	23	4.2	0.41	0.92	0.29	Note 47
	Vol/NH3	Cattle	NO	0.0	7.7	NON	100.00	WWH	1.000	NO	17.5	Cattle	0.67						Cattle	0.3	0.08	0.0125	0.08	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	17.5	Dairy	2					3.1	Deep	0.0	0.44	0.0200	0.13	Note 49
Year 3	N	23	0	4.6	4.6	0	100	11	0	0	3.5	21	0.8	0.2	0.0	0.0	0.0	0.0	23	0.6	0.06	0.14	0.04	Note 47
	Vol/NH3	Cattle	NO	0.0	1.2	NON	100.00	WWH	1.000	NO	2.6	Cattle	0.67						Cattle	0.0	0.01	0.0125	0.01	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	2.6	Dairy	2					0.5	Deep	0.0	0.07	0.0200	0.02	Note 49
Year 4	N	23	0	0.7	0.7	0	100	11	0	0	0.5	21	0.1	0.0	0.0	0.0	0.0	0.0	23	0.1	0.01	0.02	0.01	Note 47
	Vol/NH3	Cattle	NO	0.0	0.2	NON	100.00	WWH	1.000	NO	0.4	Cattle	0.67						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.4	Dairy	2					0.1	Deep	0.0	0.01	0.0200	0.00	Note 49
Year 5	N	23	0	0.1	0.1	0	100	1	0	0	0.1	21	0.0	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.1	Cattle	0.65						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.1	Dairy	2					0.0	Deep	0.0	0.00	0.0200	0.00	Note 49
Year 6	N	23	0	0.0	0.0	0	100	109	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBB	1.000	NO	0.0	Cattle	0.84						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2					0.0	Deep	0.0	0.00	0.0200	0.00	Note 49
Year 7	N	23	0	0.0	0.0	0	100	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2					0.0	Deep	0.0	0.00	0.0200	0.00	Note 49
Year 8	N	23	0	0.0	0.0	0	100	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2					0.0	Deep	0.0	0.00	0.0200	0.00	Note 49
Year 9	N	23	0	0.0	0.0	0	100	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2					0.0	Deep	0.0	0.00	0.0200	0.00	Note 49
Year 10	N	23	0	0.0	0.0	0	100	1	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Cattle	0.65						Cattle	0.0	0.00	0.0125	0.00	Note 48
	N leach	Deep	0.600	1.159	0.600	ORG	1.00	1.000	0.760	0.0	0.0	Dairy	2					0.0	Deep	0.0	0.00	0.0200	0.00	Note 49

Year Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.11 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.82 1.20 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00

Total IPCC and non IPCC N2O 4.48
2.33 Note 51
2.33 Note 51
3.14 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
LIQUID CATTLE MANURE

TO PRODUCE
TO PRODUCE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

CATTLE BEEF
CATTLE BEEF

Note 43
Note 43

Year

Fertilizer/manure
#

Store
1/0

Amounts
Store

Field
1/0

Or-
ganic
1/0

Nhorm
proportion,
%

Crop
#

Straw
used
1/0

Cereal
benefit
1/0

Fodder:
Uses #21-61
Fed

N crop
#71/
#72

Food
#8

Fuel/
bev
#9

Manure
handling
#

Final
N a-
mounts

N2O-N emission
IPCC 1996

N2O-N emission
Each

Total

Note 44
Note 44
Note 44

Total N	RATIO OF N2O-N TO N IN FIRST CROP															12.4	12.4	1.79	3.78	1.61	2.31	Note 45
Year N NH3	ACCORDING TO IPCC 1996															13.9	13.8	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR															74.2	73.8	1.85		0.56		Note 45
	TOTAL															100.5	100.0					Note 45

N2O-N/N in food/beverage/fuel/other

0.3039

0.1856

Note 46

Year N	1	0	100.0	100.0	0	100	109	0	0	97.8	22	40.0	10.4	0.0	0.0	0.0	0.0	0.0	1.41	2.90	1.27	1.75	Note 47
1 Vol/NH3 N	NO		0.0	0.0	2.2	NON	100.00	WBB	1.000	NO		0.84						0.0	0.05	0.0125	0.05	0.0100	Note 48
N leach		1.022	1.000		ORG	1.00	1.000		0.591	0.0		2					12.6	0.0	1.45	0.0010	0.43	0.0050	Note 49
Year N	21	0	27.7	0	100	11		0	0	20.7	22	7.7	1.6	0.0	0.0	0.0	0.0	0.0	1.30	0.70	0.27	0.44	Note 47
2 Vol/NH3 Cattle	NO		0.0		6.9	NON	100.00	WWH	1.000	NO		0.67					0.0	0.0	0.07	0.0125	0.07	0.0100	Note 48
N leach	Liquid	0.933	1.016		ORG	1.00	1.000		0.627	0.0		2					2.8	0.0	0.32	0.0010	0.10	0.0050	Note 49
Year N	21	0	5.7	0	100	11		0	0	4.3	22	1.6	0.3	0.0	0.0	0.0	0.0	0.0	1.3	0.15	0.06	0.09	Note 47
3 Vol/NH3 Cattle	NO		0.0		1.4	NON	100.00	WWH	1.000	NO		0.67					0.0	0.0	0.02	0.0125	0.02	0.0100	Note 48
N leach	Liquid	0.933	1.016		ORG	1.00	1.000		0.627	0.0		2					0.6	0.0	0.07	0.0010	0.02	0.0050	Note 49
Year N	21	0	1.2	0	100	11		0	0	0.9	22	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.03	0.03	0.01	0.02	Note 47
4 Vol/NH3 Cattle	NO		0.0		0.3	NON	100.00	WWH	1.000	NO		0.67					0.0	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		2					0.1	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.2	0	100	1		0	0	0.2	22	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.01	0.00	0.00	Note 47
5 Vol/NH3 Cattle	NO		0.0		0.1	NON	100.00	SBA	1.000	NO		0.65					0.0	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		2					0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.1	0	100	109		0	0	0.0	22	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 Cattle	NO		0.0		0.0	NON	100.00	WBB	1.000	NO		0.84					0.0	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		2					0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.0	0	100	11		0	0	0.0	22	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 Cattle	NO		0.0		0.0	NON	100.00	WWH	1.000	NO		0.67					0.0	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		2					0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.0	0	100	11		0	0	0.0	22	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 Cattle	NO		0.0		0.0	NON	100.00	WWH	1.000	NO		0.67					0.0	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		2					0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.0	0	100	11		0	0	0.0	22	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 Cattle	NO		0.0		0.0	NON	100.00	WWH	1.000	NO		0.67					0.0	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		2					0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.0	0	100	1		0	0	0.0	22	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 Cattle	NO		0.0		0.0	NON	100.00	SBA	1.000	NO		0.65					0.0	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		2					0.0	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

Year 10

Total

Total/year 1

Area with crop, ha

0.68

0.16

0.03

0.01

0.00

0.00

0.00

0.00

0.00

0.00

0.88

1.30

Note 50

Possible additional non IPCC N2O-N emissions

N residues emissions, ratio of N2O-N to N:

Increased soil N emissions, kg N2O-N/ha:

Natural background emissions, kg N2O-N/ha:

Value

0.0000

0.00

1.00

Kind of source

Total IPCC and non IPCC N2O

3.78

3.78

4.66

Note 51

2.31

2.31

3.19

Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN STARTING WITH N FERTILIZER TO PRODUCE TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND CATTLE BEEF
AND CONTINUING WITH CATTLE DEEP LITTER CATTLE DEEP LITTER WINTER WHEAT FOR CATTLE BEEF

Year Fertilizer/manure Fertilizer/manure Or- Nnorm Crop Crop Straw Straw Cereal Cereal Fuel/ Fuel/
Store Amounts Store Amounts ganic propor # use & use other
Name 1/0 Store 1/0 Field 1/0 tion, % Name # leach leach benefit #71/ bevs other
Name 1/0 Store 1/0 Field 1/0 tion, % Name # leach leach benefit #72 #8 #9

Total N	RATIO OF N2O-N TO N IN FIRST CROP TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED									
Year N NH3	ACCORDING TO IPCC 1996 IPCC 2006									
1-10 N leach	FIRST YEAR 0.0855 0.0437									
	TOTAL 0.1143 0.0593									

N2O-N/N in food/beverage/fuel/other

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	22	40.0	10.4	0.0	0.0	0.0	23	29.6	1.94	3.42	1.27	1.75
	Vol/NH3	N	NO	2.2	NON	100.00	WBB	1.000	NO	57.8	Cattle	0.84						0.0	Cattle	1.8	0.04	0.0125	0.04
	N leach		1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	Beef	2					12.6	Deep	0.0	1.45	0.0200	0.43	
Year 2	N	23	0	32.2	32.2	0	100	11	0	0	24.2	22	5.8	1.2	0.0	0.0	0.0	23	4.6	0.43	0.97	0.30	
	Vol/NH3	Cattle	NO	8.1	NON	100.00	WWH	1.000	NO	18.4	Cattle	0.67						0.0	Cattle	0.3	0.08	0.0125	0.08
	N leach	Deep	0.600	1.159	ORG	1.00	1.000	0.760	0.0	18.4	Beef	2						3.3	Deep	0.0	0.46	0.0200	0.14
Year 3	N	23	0	5.0	5.0	0	100	11	0	0	3.8	22	0.9	0.2	0.0	0.0	0.0	23	0.7	0.07	0.15	0.05	
	Vol/NH3	Cattle	NO	1.3	NON	100.00	WWH	1.000	NO	2.9	Cattle	0.67						0.0	Cattle	0.0	0.01	0.0125	0.01
	N leach	Deep	0.600	1.159	ORG	1.00	1.000	0.760	0.0	2.9	Beef	2						0.5	Deep	0.0	0.07	0.0200	0.02
Year 4	N	23	0	0.8	0.8	0	100	11	0	0	0.6	22	0.1	0.0	0.0	0.0	0.0	23	0.1	0.01	0.02	0.01	
	Vol/NH3	Cattle	NO	0.2	NON	100.00	WWH	1.000	NO	0.4	Cattle	0.67						0.0	Cattle	0.0	0.00	0.0125	0.00
	N leach	Deep	0.600	1.159	ORG	1.00	1.000	0.760	0.0	0.4	Beef	2						0.1	Deep	0.0	0.01	0.0200	0.00
Year 5	N	23	0	0.1	0.1	0	100	1	0	0	0.1	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	
	Vol/NH3	Cattle	NO	0.0	NON	100.00	SBA	1.000	NO	0.1	Cattle	0.65						0.0	Cattle	0.0	0.00	0.0125	0.00
	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
Year 6	N	23	0	0.0	0.0	0	100	109	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	
	Vol/NH3	Cattle	NO	0.0	NON	100.00	WBB	1.000	NO	0.0	Cattle	0.84						0.0	Cattle	0.0	0.00	0.0125	0.00
	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
Year 7	N	23	0	0.0	0.0	0	100	11	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	
	Vol/NH3	Cattle	NO	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67						0.0	Cattle	0.0	0.00	0.0125	0.00
	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
Year 8	N	23	0	0.0	0.0	0	100	11	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	
	Vol/NH3	Cattle	NO	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67						0.0	Cattle	0.0	0.00	0.0125	0.00
	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
Year 9	N	23	0	0.0	0.0	0	100	11	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	
	Vol/NH3	Cattle	NO	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67						0.0	Cattle	0.0	0.00	0.0125	0.00
	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
Year 10	N	23	0	0.0	0.0	0	100	1	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	23	0.0	0.00	0.00	0.00	
	Vol/NH3	Cattle	NO	0.0	NON	100.00	SBA	1.000	NO	0.0	Cattle	0.65						0.0	Cattle	0.0	0.00	0.0125	0.00
	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

Year Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.12 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.82 1.21 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00
Kind of source
Total IPCC and non IPCC N2O
4.57
2.37 Note 51
4.57
2.37 Note 51
5.40
3.19 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
MANURE FROM ROOTING PIGS

TO PRODUCE
TO PRODUCE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

PIG PORK
PIG PORK

Note 43
Note 43

Year

Fertilizer/manure
#

Store
1/0

Store
Amounts
1/0

Field
1/0

Or-
ganic
1/0

Nhorm
proportion,
% Name

Crop
#

Straw
used
1/0

Crop
leach

Use
#

Fodder:
Uses #21-61
Fed

N crop
#71/
Food

Fuel/
bev
#8

other
#9

Manure
handling
Name

Final
N a-
mounts

N2O-N emission
IPCC 1996

N2O-N emission
Each

Total

Note 44
Note 44
Note 44

Total N	RATIO OF N2O-N TO N IN FIRST CROP														TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED				19.7	2.29	4.24	1.98	2.60	Note 45
Year N NH3	ACCORDING TO														TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				4.1	0.04		0.04		Note 45
1-10 N leach	FIRST YEAR														TOTAL N AMOUNTS IN KG AND % LEACHED				76.2	1.90		0.57		Note 45
	TOTAL														TOTAL N AMOUNTS IN KG AND %				100.0					Note 45

N2O-N/N in food/beverage/fuel/other

0.2150

0.1317

Note 46

Year N	1	0	100.0	100.0	0	100	109	0	0	97.8	32	40.0	16.7	0.0	0.0	0.0	0.0	0.0	34	23.3	1.85	3.31	1.60	2.06	Note 47
1	Vol/NH3	N	NO	2.2	NON	100.00	WBB	1.000	NO	57.8	Pig	0.84							0.0	Pig	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	Pork	3							12.6	Root	1.45	0.0200	0.43	0.0200	Note 49
Year N	34	0	23.3	23.3	0	100	11	0	0	21.7	32	6.1	2.5	0.0	0.0	0.0	0.0	0.0	34	3.5	0.38	0.78	0.32	0.46	Note 47
2	Vol/NH3	Pig	NO	1.6	NON	100.00	WWH	1.000	NO	15.6	Pig	0.67							0.0	Pig	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Root	0.699	1.000	ORG	1.00	1.000	0.720	0.0	15.6	Pork	3							2.9	Root	0.39	0.0200	0.12	0.0200	Note 49
Year N	34	0	3.5	3.5	0	100	11	0	0	3.3	32	0.9	0.4	0.0	0.0	0.0	0.0	0.0	34	0.5	0.06	0.12	0.05	0.07	Note 47
3	Vol/NH3	Pig	NO	0.2	NON	100.00	WWH	1.000	NO	2.4	Pig	0.67							0.0	Pig	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Root	0.699	1.000	ORG	1.00	1.000	0.720	0.0	2.4	Pork	3							0.4	Root	0.06	0.0200	0.02	0.0200	Note 49
Year N	34	0	0.5	0.5	0	100	11	0	0	0.5	32	0.1	0.1	0.0	0.0	0.0	0.0	0.0	34	0.1	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Pig	NO	0.0	NON	100.00	WWH	1.000	NO	0.4	Pig	0.67							0.0	Pig	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Root	0.699	1.000	ORG	1.00	1.000	0.720	0.0	0.4	Pork	3							0.1	Root	0.01	0.0200	0.00	0.0200	Note 49
Year N	34	0	0.1	0.1	0	100	1	0	0	0.1	32	0.0	0.0	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	NO	0.0	NON	100.00	SBA	1.000	NO	0.1	Pig	0.65							0.0	Pig	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Root	0.699	1.000	ORG	1.00	1.000	0.720	0.0	0.1	Pork	3							0.0	Root	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	0	0.0	0.0	0	100	109	0	0	0.0	32	0.0	0.0	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	NO	0.0	NON	100.00	WBB	1.000	NO	0.0	Pig	0.84							0.0	Pig	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	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	0	0.0	0.0	0	100	11	0	0	0.0	32	0.0	0.0	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	NO	0.0	NON	100.00	WWH	1.000	NO	0.0	Pig	0.67							0.0	Pig	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	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	0	0.0	0.0	0	100	11	0	0	0.0	32	0.0	0.0	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	NO	0.0	NON	100.00	WWH	1.000	NO	0.0	Pig	0.67							0.0	Pig	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	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	0	0.0	0.0	0	100	11	0	0	0.0	32	0.0	0.0	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	NO	0.0	NON	100.00	WWH	1.000	NO	0.0	Pig	0.67							0.0	Pig	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	0.00	0.0200	0.00	0.0200	Note 49
Year N	34	0	0.0	0.0	0	100	1	0	0	0.0	32	0.0	0.0	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	NO	0.0	NON	100.00	SBA	1.000	NO	0.0	Pig	0.65							0.0	Pig	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	0.00	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

Year 10

Total

Total/year 1

Area with crop, ha

0.68

0.10

0.02

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.80

1.18

Note 50

Possible additional non IPCC N2O-N emissions

N residues emissions, ratio of N2O-N to N:

Increased soil N emissions, kg N2O-N/ha:

Natural background emissions, kg N2O-N/ha:

Value

0.0000

0.00

1.00

Kind of source

Total IPCC and non IPCC N2O

4.24

4.24

5.04

Note 51

2.60

2.60

3.40

Note 51

Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN CONTINUING WITH SEPARATED POULTRY MANURE TO PRODUCE TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR POULTRY MEAT POULTRY MEAT

Year Fertilizer/manure # Store Amounts Store 1/0 Field Name 1/0 Or-ganic 1/0 Nnorm propor tion, % Crop # Name 1/0 Straw used 1/0 Crop leach use & 1/0 Use # Name Fodder: Uses #21-61 Fed Food #72 N crop #71/ bev #8 Fuel/ other #9 Manure handling N a- IPCC 1996 N2O-N emission N2O-N emission

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										22.6	22.6
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										11.7	11.7
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										65.8	65.8
	TOTAL										TOTAL N AMOUNTS IN KG AND %										100.0	100.0

N2O-N/N in food/beverage/fuel/other

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	0.0	196	1.53	3.05	1.21	1.71 Note 47
	Vol/NH3	N	NO	0.0	2.2 NON	100.00	WBB	1.000	NO	57.8 Poultry	57.8 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	0.0	57.8 Meat	4						12.6 Sep	0.0	1.45	0.0105	0.43	0.0050 Note 49
Year 2	N	42	0	14.7	14.7	0	100	11	0	0	11.0	42	3.8	1.9	0.0	0.0	0.0	0.0	1.9	0.17	0.39	0.14	0.23 Note 47
	Vol/NH3	Poultry	NO	0.0	3.7 NON	100.00	WWH	1.000	NO	7.2 Poultry	7.2 Poultry	0.67						0.0 Poultry	0.5	0.04	0.0125	0.04	0.0100 Note 48
	N leach	Sep	0.867	1.000	ORG	1.00	1.000		0.653	0.0	7.2 Meat	4						1.5 Sep	0.0	0.18	0.0105	0.05	0.0050 Note 49
Year 3	N	42	0	1.4	1.4	0	100	11	0	0	1.1	42	0.4	0.2	0.0	0.0	0.0	0.0	0.2	0.02	0.04	0.01	0.02 Note 47
	Vol/NH3	Poultry	NO	0.0	0.4 NON	100.00	WWH	1.000	NO	0.7 Poultry	0.7 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	0.7 Meat	4						0.1 Sep	0.0	0.02	0.0105	0.01	0.0050 Note 49
Year 4	N	42	0	0.1	0.1	0	100	11	0	0	0.1	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.1 Poultry	0.1 Poultry	0.67						0.0 Poultry	0.0	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.000	ORG	1.00	1.000		0.653	0.0	0.1 Meat	4						0.0 Sep	0.0	0.00	0.0105	0.00	0.0050 Note 49
Year 5	N	42	0	0.0	0.0	0	100	1	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	SBA	1.000	NO	0.0 Poultry	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 6	N	42	0	0.0	0.0	0	100	109	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WBB	1.000	NO	0.0 Poultry	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 7	N	42	0	0.0	0.0	0	100	11	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.0 Poultry	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 8	N	42	0	0.0	0.0	0	100	11	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.0 Poultry	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 9	N	42	0	0.0	0.0	0	100	11	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.0 Poultry	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 10	N	42	0	0.0	0.0	0	100	1	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	SBA	1.000	NO	0.0 Poultry	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 Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.08 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.77 1.13 Note 50

Possible additional non IPCC N2O-N emissions Value 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 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 3.48 Total IPCC and non IPCC N2O Note 51 Increased soil N emissions, kg N2O-N/ha: 0.00 3.48 1.97 Note 51 Natural background emissions, kg N2O-N/ha: 1.00 0.68 0.08 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.77 Total including natural 4.25 2.74 Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN STARTING WITH N FERTILIZER TO PRODUCE TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND POULTRY MEAT POULTRY MEAT AND CONTINUING WITH POULTRY DEEP LITTER POULTRY MEAT POULTRY MEAT

Year Fertilizer/manure # Store Amounts Name 1/0 Store Field 1/0 Or-ganic 1/0 Nnorm propor tion, % Name Crop use & leach Straw used 1/0 Cereal benefit 1/0 N crop #71/ bever #72 #8 Fuel/ other #9 Manure handling N a- # Name mounts Final N2O-N emission IPCC 1996 IPCC 2006 N2O-N emission Each Total Each Total Total

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										21.6	21.5
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										13.6	13.6
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										65.0	64.9
	TOTAL										TOTAL N AMOUNTS IN KG AND %										100.2	100.0

N2O-N/N in food/beverage/fuel/other

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	43	19.6	1.62	3.16	1.19	1.73	
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Poultry	0.84				0.0	Poultry	7.8	0.10	0.0125	0.10	0.0100	
	N leach			1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	Meat	4				12.6	Deep	0.0	1.45	0.0200	0.43	0.0050	
Year 2	N	43	0	11.9	0	100	11		0	0	8.9	42	2.1	1.1	0.0	0.0	0.0	43	1.1	0.14	0.34	0.11	0.19	
	Vol/NH3	Poultry	NO	0.0	3.0	NON	100.00	WWH	1.000	NO	6.8	Poultry	0.67					0.0	Poultry	0.4	0.03	0.0125	0.03	0.0100
	N leach	Deep	0.600	1.013	1.000	ORG	1.00	1.000	0.760	0.0	6.8	Meat	4				1.2	Deep	0.0	0.17	0.0200	0.05	0.0050	
Year 3	N	43	0	0.6	0	100	11		0	0	0.5	42	0.1	0.1	0.0	0.0	0.0	43	0.1	0.01	0.02	0.01	0.01	
	Vol/NH3	Poultry	NO	0.0	0.2	NON	100.00	WWH	1.000	NO	0.4	Poultry	0.67					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	ORG	1.00	1.000	0.760	0.0	0.4	Meat	4				0.1	Deep	0.0	0.01	0.0200	0.00	0.0050	
Year 4	N	43	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	
Year 5	N	43	0	0.0	0	100	1		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	
Year 6	N	43	0	0.0	0	100	109		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBB	1.000	NO	0.0	Poultry	0.84					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	
Year 7	N	43	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	
Year 8	N	43	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	
Year 9	N	43	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	
Year 10	N	43	0	0.0	0	100	1		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100
	N leach	Deep	0.600	1.013	1.000	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	

Year Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.73 1.07 Note 50

Possible additional non IPCC N2O-N emissions Value Kind of source Total IPCC and non IPCC N2O Note 51
N residues emissions, ratio of N2O-N to N: 0.0000 0.00 Current crops 3.52 1.93 Note 51
Increased soil N emissions, kg N2O-N/ha: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Total anthropogenic 3.52 1.93 Note 51
Natural background emissions, kg N2O-N/ha: 1.00 0.68 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.73 Total including natural 4.25 2.66 Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN STARTING WITH N FERTILIZER
AND CONTINUING WITH MANURE FROM SCRAPING POULTRY TO PRODUCE TO PRODUCE
POULTRY MEAT POULTRY MEAT

Year Fertilizer/manure Fertilizer/manure
Store Store
Name 1/0 Store Field 1/0

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED									
	IPCC 1996					IPCC 2006					TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3					Final				
	0.0810					0.0496					3.7					N a-				
	0.0995					0.0598					TOTAL N AMOUNTS IN KG AND % LEACHED					73.9				
Year 1-10	N leach					N leach					TOTAL N AMOUNTS IN KG AND %					100.0				

N2O-N/N in food/beverage/fuel/other 0.1778 0.1069 Note 46

Year	N	1	0	100.0	100.0	0	100	109	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	0.0	0.0	19.6
1	Vol/NH3	N	NO	0.0	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Poultry	0.84	0.0	0.0	0.0	0.0	0.0	0.0
	N leach			1.022	1.000		ORG	1.00	1.000	0.591	0.0	57.8	Meat	4				12.6	Scrap	0.0
Year	N	44	0	19.6	0	100	11		0	0	18.2	42	3.5	1.8	0.0	0.0	0.0	0.0	44	1.7
2	Vol/NH3	Poultry	NO	0.0	0.0	1.4	NON	100.00	WWH	1.000	NO	14.7	Poultry	0.67					0.0	0.0
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	14.7	Meat	4					2.5	Scrap	0.0
Year	N	44	0	1.7	0	100	11		0	0	1.6	42	0.3	0.2	0.0	0.0	0.0	0.0	44	0.2
3	Vol/NH3	Poultry	NO	0.0	0.0	0.1	NON	100.00	WWH	1.000	NO	1.3	Poultry	0.67					0.0	0.0
	N leach	Scrap	0.484	1.000		ORG	1.00	1.000	0.806	0.0	1.3	Meat	4					0.2	Scrap	0.0
Year	N	44	0	0.2	0	100	11		0	0	0.1	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
4	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.1	Poultry	0.67					0.0	0.0
	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
Year	N	44	0	0.0	0	100	1		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
5	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65					0.0	0.0
	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
Year	N	44	0	0.0	0	100	109		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
6	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	WBB	1.000	NO	0.0	Poultry	0.84					0.0	0.0
	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
Year	N	44	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
7	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	0.0
	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
Year	N	44	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
8	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	0.0
	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
Year	N	44	0	0.0	0	100	11		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
9	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67					0.0	0.0
	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
Year	N	44	0	0.0	0	100	1		0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	0.0	44	0.0
10	Vol/NH3	Poultry	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65					0.0	0.0
	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

Year Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.06 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.75 1.10 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00

Total IPCC and non IPCC N2O 3.98
Kind of source
Current crops 2.39
Total anthropogenic 2.39
Total including natural 3.14

Note 51
Note 51
Note 51
Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN CONTINUING WITH LIQUID POULTRY MANURE TO PRODUCE TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR POULTRY EGGS POULTRY EGGS

Year	Fertilizer/manure #	Store 1/0	Store	Field	Or-ganic 1/0	Nnorm propor tion, %	Crop #	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use #	Fodder: Uses #21-61	N crop #71/	Food #72	Fuel/ bev #8	Fuel/ other #9	Manure handling N a-	Final	N2O-N emission IPCC 1996	N2O-N emission IPCC 2006	Total	Total	Total	Total							
Total N Year N NH3 1-10 N leach	RATIO OF N2O-N TO N IN FIRST CROP																						11.7		11.7						
	ACCORDING TO IPCC 1996																						IPCC 2006		TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		11.7		11.7		
	FIRST YEAR																						0.0726		0.0440		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		14.2		14.2
	TOTAL																						0.0940		0.0573		TOTAL N AMOUNTS IN KG AND % LEACHED		74.1		74.1
																		100.0	100.0	1.77	1.59	3.76	2.29	Note 45							
																			0.14	0.14			Note 45								
																			1.85	0.56			Note 45								
																								Note 45							

N2O-N/N in food/beverage/fuel/other 0.3209 0.1954 Note 46

Year	N	1	0	100.0	100.0	0	100	109	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	0.0	0.0	1.41	2.90	1.27	1.76	Note 47
1	Vol/NH3	N	NO	0.0	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Poultry	0.84	0.0	0.0	0.0	0.0	0.0	0.05	0.0125	0.05	0.0100	Note 48
	N leach			1.022	1.000		ORG	1.00	1.000	0.591	0.0	57.8	Eggs	4				12.6	Liquid	1.45	0.0010	0.43	0.0050	Note 49
Year	N	41	0	27.3	0	100	11	11	0	0	20.5	43	7.1	1.7	0.0	0.0	0.0	0.0	0.0	0.30	0.70	0.26	0.44	Note 47
2	Vol/NH3	Poultry	NO	0.0	0.0	6.8	NON	100.00	WWH	1.000	NO	13.4	Poultry	0.67	0.0	0.0	0.0	0.0	0.0	0.07	0.0125	0.07	0.0100	Note 48
	N leach	Liquid		0.867	1.000		ORG	1.00	1.000	0.653	0.0	13.4	Eggs	4				2.8	Liquid	0.33	0.0010	0.10	0.0050	Note 49
Year	N	41	0	4.9	0	100	11	11	0	0	3.6	43	1.3	0.3	0.0	0.0	0.0	0.0	0.0	0.05	0.13	0.05	0.08	Note 47
3	Vol/NH3	Poultry	NO	0.0	0.0	1.2	NON	100.00	WWH	1.000	NO	2.4	Poultry	0.67	0.0	0.0	0.0	0.0	0.0	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid		0.867	1.000		ORG	1.00	1.000	0.653	0.0	2.4	Eggs	4				0.5	Liquid	0.06	0.0010	0.02	0.0050	Note 49
Year	N	41	0	0.9	0	100	11	11	0	0	0.6	43	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.01	0.02	0.01	0.01	Note 47
4	Vol/NH3	Poultry	NO	0.0	0.0	0.2	NON	100.00	WWH	1.000	NO	0.4	Poultry	0.67	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid		0.867	1.000		ORG	1.00	1.000	0.653	0.0	0.4	Eggs	4				0.1	Liquid	0.01	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.2	0	100	1	1	0	0	0.1	43	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	Poultry	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0.1	Poultry	0.65	0.0	0.0	0.0	0.0	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	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0	100	109	109	0	0	0.0	43	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	Poultry	NO	0.0	0.0	0.0	NON	100.00	WBB	1.000	NO	0.0	Poultry	0.84	0.0	0.0	0.0	0.0	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	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0.0	0	100	11	0	0.0	43	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	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67	0.0	0.0	0.0	0.0	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	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0.0	0	100	11	0	0.0	43	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	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67	0.0	0.0	0.0	0.0	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	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0.0	0	100	11	0	0.0	43	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	Poultry	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67	0.0	0.0	0.0	0.0	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	0.00	0.0010	0.00	0.0050	Note 49
Year	N	41	0	0.0	0.0	0.0	0	100	1	0	0.0	43	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	Poultry	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65	0.0	0.0	0.0	0.0	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	0.00	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 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.15 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.86 1.26 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00
Kind of source
Total IPCC and non IPCC N2O 3.76
2.29 Note 51
2.29 Note 51
3.15 Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN STARTING WITH N FERTILIZER
AND CONTINUING WITH MANURE FROM SCRAPING POULTRY TO PRODUCE TO PRODUCE
POULTRY EGGS POULTRY EGGS

Year Fertilizer/manure # Store Amounts Name 1/0 Store Field 1/0 Or-ganic 1/0 Nnorm propor tion, % Crop # Straw used 1/0 Crop use & leach Fuel/ other #8 #9 N crop #71/ #72 Food Fed Fodder: Uses #21-61 Manure Final N2O-N emission IPCC 1996 IPCC 2006 N2O-N emission IPCC 2006 Total Each Total Each Total

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										11.2	11.2
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										4.7	4.7
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										84.2	84.2
	TOTAL										TOTAL N AMOUNTS IN KG AND %										100.0	100.0

N2O-N/N in food/beverage/fuel/other

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	0.0	1.99	3.45	1.74	2.20 Note 47
	Vol/NH3	N	NO	0.0	2.2 NON	100.00	WBB	1.000	NO	57.8 Poultry	0.84							0.0 Poultry	0.02	0.0125	0.02	0.0100 Note 48
	N leach		1.022	1.000	ORG	1.00	1.000		0.591	0.0	57.8 Eggs	4					12.6 Scrap	1.45	0.0200	0.43	0.0200 Note 49	
Year 2	N	44	0	30.4	0	100	11		0	0	28.2	43	5.5	1.3	0.0	0.0	0.0	0.0	0.48	1.07	0.41	0.61 Note 47
	Vol/NH3	Poultry	NO	0.0	2.1 NON	100.00	WWH	1.000	NO	22.8 Poultry	0.67							0.0 Poultry	0.02	0.0125	0.02	0.0100 Note 48
	N leach	Scrap	0.484	1.000	ORG	1.00	1.000		0.806	0.0	22.8 Eggs	4					3.8 Scrap	0.57	0.0200	0.17	0.0200 Note 49	
Year 3	N	44	0	4.1	0	100	11		0	0	3.9	43	0.7	0.2	0.0	0.0	0.0	0.0	0.07	0.15	0.06	0.08 Note 47
	Vol/NH3	Poultry	NO	0.0	0.3 NON	100.00	WWH	1.000	NO	3.1 Poultry	0.67							0.0 Poultry	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000	ORG	1.00	1.000		0.806	0.0	3.1 Eggs	4					0.5 Scrap	0.08	0.0200	0.02	0.0200 Note 49	
Year 4	N	44	0	0.6	0	100	11		0	0	0.5	43	0.1	0.0	0.0	0.0	0.0	0.0	0.01	0.02	0.01	0.01 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.4 Poultry	0.67							0.0 Poultry	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Scrap	0.484	1.000	ORG	1.00	1.000		0.806	0.0	0.4 Eggs	4					0.1 Scrap	0.01	0.0200	0.00	0.0200 Note 49	
Year 5	N	44	0	0.1	0	100	1		0	0	0.1	43	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	SBA	1.000	NO	0.1 Poultry	0.65							0.0 Poultry	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	0.00	0.0200	0.00	0.0200 Note 49	
Year 6	N	44	0	0.0	0	100	109		0	0	0.0	43	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WBB	1.000	NO	0.0 Poultry	0.84							0.0 Poultry	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	0.00	0.0200	0.00	0.0200 Note 49	
Year 7	N	44	0	0.0	0	100	11		0	0	0.0	43	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.0 Poultry	0.67							0.0 Poultry	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	0.00	0.0200	0.00	0.0200 Note 49	
Year 8	N	44	0	0.0	0	100	11		0	0	0.0	43	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.0 Poultry	0.67							0.0 Poultry	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	0.00	0.0200	0.00	0.0200 Note 49	
Year 9	N	44	0	0.0	0	100	11		0	0	0.0	43	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	WWH	1.000	NO	0.0 Poultry	0.67							0.0 Poultry	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	0.00	0.0200	0.00	0.0200 Note 49	
Year 10	N	44	0	0.0	0	100	1		0	0	0.0	43	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Poultry	NO	0.0	0.0 NON	100.00	SBA	1.000	NO	0.0 Poultry	0.65							0.0 Poultry	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	0.00	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 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.09 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.79 1.16 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00
Total IPCC and non IPCC N2O 4.70
Kind of source
Current crops 2.90 Note 51
Total anthropogenic 4.70
Total including natural 5.49
3.69 Note 51

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND FUEL/ N2O-N emission
AND CONTINUING WITH GOAT DEEP LITTER TO PRODUCE WINTER WHEAT FOR other #9 IPCC 1996
GOAT MILK/MEAT GOAT MILK/MEAT

Year Fertilizer/manure Or- Nnorm Crop Cereal Straw Crop Use Fodder: N crop Food/ Fuel/ N2O-N emission
Store Amounts ganic propor # benefit used use & # Uses #21-61 #71/ bev other IPCC 2006
Name 1/0 Store Field 1/0 Name 1/0 leach 1/0 Name Fed Fed #72 #8 #9 Each Total Each Total

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED									
	IPCC 1996					IPCC 2006					TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3									
	FIRST YEAR					0.0450					TOTAL N AMOUNTS IN KG AND % LEACHED									
	TOTAL					0.0625					TOTAL N AMOUNTS IN KG AND %									

N2O-N/N in food/beverage/fuel/other

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	61	40.0	3.8	0.0	0.0	0.0	0.0	36.2	1.99	3.52	1.29	1.80	Note 47
	Vol/NH3	N	NO	0.0	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Goat	0.84					0.0	Goat	0.08	0.0100	Note 48	
	N leach			1.022	1.000		ORG	1.00	1.000	0.591	0.0	57.8	Milk/meat	6				12.6	Deep	0.43	0.0050	Note 49		
Year 2	N	63	0	35.7	0	35.7	0	100	11	0	0	26.8	61	6.4	0.6	0.0	0.0	0.0	63	1.09	0.34	0.59	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	8.9	NON	100.00	WWH	1.000	NO	20.4	Goat	0.67					0.0	Goat	0.10	0.0100	Note 48	
	N leach	Deep	0.600	1.162			ORG	1.00	1.000	0.760	0.0	20.4	Milk/meat	6					3.6	Deep	0.15	0.0050	Note 49	
Year 3	N	63	0	5.7	0	5.7	0	100	11	0	0	4.3	61	1.0	0.1	0.0	0.0	0.0	63	0.17	0.05	0.09	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	1.4	NON	100.00	WWH	1.000	NO	3.3	Goat	0.67					0.0	Goat	0.02	0.0100	Note 48	
	N leach	Deep	0.600	1.162			ORG	1.00	1.000	0.760	0.0	3.3	Milk/meat	6					0.6	Deep	0.02	0.0050	Note 49	
Year 4	N	63	0	0.9	0	0.9	0	100	11	0	0	0.7	61	0.2	0.0	0.0	0.0	0.0	63	0.03	0.01	0.02	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.2	NON	100.00	WWH	1.000	NO	0.5	Goat	0.67					0.0	Goat	0.00	0.0100	Note 48	
	N leach	Deep	0.600	1.162			ORG	1.00	1.000	0.760	0.0	0.5	Milk/meat	6					0.1	Deep	0.00	0.0050	Note 49	
Year 5	N	63	0	0.1	0	0.1	0	100	1	0	0	0.1	61	0.0	0.0	0.0	0.0	0.0	63	0.00	0.00	0.00	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0.1	Goat	0.65					0.0	Goat	0.00	0.0100	Note 48	
	N leach	Deep	0.600	1.162			ORG	1.00	1.000	0.760	0.0	0.1	Milk/meat	6					0.0	Deep	0.00	0.0050	Note 49	
Year 6	N	63	0	0.0	0	0.0	0	100	109	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.00	0.00	0.00	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.0	NON	100.00	WBB	1.000	NO	0.0	Goat	0.84					0.0	Goat	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	0.00	0.0050	Note 49	
Year 7	N	63	0	0.0	0	0.0	0	100	11	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.00	0.00	0.00	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Goat	0.67					0.0	Goat	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	0.00	0.0050	Note 49	
Year 8	N	63	0	0.0	0	0.0	0	100	11	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.00	0.00	0.00	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Goat	0.67					0.0	Goat	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	0.00	0.0050	Note 49	
Year 9	N	63	0	0.0	0	0.0	0	100	11	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.00	0.00	0.00	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Goat	0.67					0.0	Goat	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	0.00	0.0050	Note 49	
Year 10	N	63	0	0.0	0	0.0	0	100	1	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	63	0.00	0.00	0.00	Note 47	
	Vol/NH3	Goat	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Goat	0.65					0.0	Goat	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	0.00	0.0050	Note 49	

Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.13 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.84 1.23 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00
Total IPCC and non IPCC N2O 4.81
2.50 Note 51
2.50 Note 51
3.34 Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN STARTING WITH N FERTILIZER
AND CONTINUING WITH GREEN MANURE HIGH N TO PRODUCE TO PRODUCE
WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR CATTLE DAIRY

Year Fertilizer/manure # Store Amounts Field 1/0 Or-ganic 1/0 Nnorm propor tion, % Crop use & leach Straw used 1/0 Cereal benefit 1/0 N crop Food/ #71/ bevs other #72 #8 Fuel/ #9 N2O-N emission IPCC 1996 N2O-N emission IPCC 2006

Total N Year 1-10 N leach	RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO FIRST YEAR TOTAL										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3 TOTAL N AMOUNTS IN KG AND % LEACHED TOTAL N AMOUNTS IN KG AND %										3.3 3.3	
	IPCC 1996										IPCC 2006										15.6 15.5	
	0.0712										0.0398										81.3 81.2	
	0.1028										0.0597										100.2 100.0	

N2O-N/N in food/beverage/fuel/other 1.2487 0.7257 Note 46

Year	N	1	0	100.0	100.0	0	100	109	0	0	97.8	71	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	71	40.0	1.38	2.85	1.14	1.59
1	Vol/NH3	N	NO	0.0	0.0	2.2	NON	100.00	WBB	1.000	NO	0	0	0.84	57.8	N crop	0.0	0.0	0.0	0.0	0.0	Green	0.0	0.02	0.0125	0.0100
	N leach			1.022	1.000		ORG	1.00	1.000	0.591	0.0			71	57.8	high N					12.6	High	0.0	1.45	0.0000	0.0000
Year	N	71	0	40.0	0	40.0	0	100	11	0	0	21	11.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0	21	8.6	0.43	1.01	0.39	0.64
2	Vol/NH3	Green	NO	0.0	0.0	10.0	NON	100.00	WWH	1.000	NO	0	0	0.67	18.8	Cattle					0.0	Cattle	0.7	0.11	0.0125	0.0100
	N leach	High		0.933	1.000		ORG	1.00	1.000	0.627	0.0			2	18.8	Dairy					4.1	Liquid	0.0	0.47	0.0010	0.0050
Year	N	21	0	8.0	0	8.0	0	100	11	0	0	21	2.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	21	1.7	0.09	0.20	0.08	0.13
3	Vol/NH3	Cattle	NO	0.0	0.0	2.0	NON	100.00	WWH	1.000	NO	0	0	0.67	3.8	Cattle					0.0	Cattle	0.1	0.02	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			2	3.8	Dairy					0.8	Liquid	0.0	0.09	0.0010	0.0050
Year	N	21	0	1.6	0	1.6	0	100	11	0	0	21	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	21	0.3	0.02	0.04	0.02	0.03
4	Vol/NH3	Cattle	NO	0.0	0.0	0.4	NON	100.00	WWH	1.000	NO	0	0	0.67	0.8	Cattle					0.0	Cattle	0.0	0.00	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			2	0.8	Dairy					0.2	Liquid	0.0	0.02	0.0010	0.0050
Year	N	21	0	0.3	0	0.3	0	100	1	0	0	21	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21	0.1	0.00	0.01	0.00	0.01
5	Vol/NH3	Cattle	NO	0.0	0.0	0.1	NON	100.00	SBA	1.000	NO	0	0	0.65	0.2	Cattle					0.0	Cattle	0.0	0.00	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			2	0.2	Dairy					0.0	Liquid	0.0	0.00	0.0010	0.0050
Year	N	21	0	0.1	0	0.1	0	100	109	0	0	71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71	0.0	0.00	0.00	0.00	0.00
6	Vol/NH3	Cattle	NO	0.0	0.0	0.0	NON	100.00	WBB	1.000	NO	0	0	0.84	0.0	N crop					0.0	Green	0.0	0.00	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			71	0.0	high N					0.0	High	0.0	0.00	0.0000	0.0000
Year	N	71	0	0.0	0	0.0	0	100	11	0	0	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00
7	Vol/NH3	Green	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0	0	0.67	0.0	Cattle					0.0	Cattle	0.0	0.00	0.0125	0.0100
	N leach	High		0.933	1.000		ORG	1.00	1.000	0.627	0.0			2	0.0	Dairy					0.0	Liquid	0.0	0.00	0.0010	0.0050
Year	N	21	0	0.0	0.0	0.0	0	100	11	0	0	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00
8	Vol/NH3	Cattle	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0	0	0.67	0.0	Cattle					0.0	Cattle	0.0	0.00	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			2	0.0	Dairy					0.0	Liquid	0.0	0.00	0.0010	0.0050
Year	N	21	0	0.0	0	0.0	0	100	11	0	0	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00
9	Vol/NH3	Cattle	NO	0.0	0.0	0.0	NON	100.00	WWH	1.000	NO	0	0	0.67	0.0	Cattle					0.0	Cattle	0.0	0.00	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			2	0.0	Dairy					0.0	Liquid	0.0	0.00	0.0010	0.0050
Year	N	21	0	0.0	0.0	0.0	0	100	1	0	0	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00
10	Vol/NH3	Cattle	NO	0.0	0.0	0.0	NON	100.00	SBA	1.000	NO	0	0	0.65	0.0	Cattle					0.0	Cattle	0.0	0.00	0.0125	0.0100
	N leach	Liquid		0.933	1.016		ORG	1.00	1.000	0.627	0.0			2	0.0	Dairy					0.0	Liquid	0.0	0.00	0.0010	0.0050

Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.23 0.05 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.97 1.43 Note 50

Possible additional non IPCC N2O-N emissions Value
N residues emissions, ratio of N2O-N to N: 0.0000
Increased soil N emissions, kg N2O-N/ha: 0.00
Natural background emissions, kg N2O-N/ha: 1.00
Kind of source
Total IPCC and non IPCC N2O
4.11
2.39 Note 51
4.11
2.39 Note 51
5.08
3.36 Note 51

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

Year Fertilizer/manure # Store Amounts Field Name 1/0 Or-ganic 1/0 Nnorm propor tion, % Name # Crop use & leach Straw used 1/0 Cereal benefit 1/0 N crop #71/ bever #72 #8 Fuel/ other #9 N2O-N emission IPCC 1996 N2O-N emission IPCC 2006 Total Total Note 44 Note 44 Note 44

Total N	RATIO OF N2O-N TO N IN FIRST CROP										1.9	1.9
Year N NH3	ACCORDING TO IPCC 1996										14.1	14.1
1-10 N leach	FIRST YEAR										84.1	84.0
	TOTAL										100.1	100.0

N2O-N/N in food/beverage/fuel/other 2.1885 1.2425 Note 46

Year 1	N	1	0	100.0	100.0	0	100	109	0	0	97.8	72	0.0	0.0	40.0	0.0	0.0	72	40.0	1.38	2.85	1.14	1.59	Note 47
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	N crop	0.84			0.0	Green			0.02	0.0125	0.02	0.0100	Note 48
	N leach			1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	low N	72	12.6	Low	0.0			0.0	1.45	0.0000	0.43	0.0000	Note 49
Year 2	N	72	0	40.0	40.0	0	100	11	0	0	30.0	21	6.4	1.5	0.0	0.0	0.0	21	4.9	0.43	1.12	0.37	0.65	Note 47
	Vol/NH3	Green	NO	0.0	10.0	NON	100.00	WWH	1.000	NO	23.6	Cattle	0.67			0.0	Cattle		0.4	0.10	0.0125	0.10	0.0100	Note 48
	N leach	Low		0.533	1.000	ORG	1.00	1.000	0.787	0.0	23.6	Dairy	2	0.3	0.0	0.0	4.1	Liquid	0.0	0.59	0.0010	0.18	0.0050	Note 49
Year 3	N	21	0	4.6	4.6	0	100	11	0	0	3.4	21	1.3	0.0	0.0	0.0	0.0	21	1.0	0.05	0.12	0.04	0.07	Note 47
	Vol/NH3	Cattle	NO	0.0	1.1	NON	100.00	WWH	1.000	NO	2.1	Cattle	0.67			0.0	Cattle		0.1	0.01	0.0125	0.01	0.0100	Note 48
	N leach	Liquid		0.933	1.016	ORG	1.00	1.000	0.627	0.0	2.1	Dairy	2	0.0	0.0	0.0	0.5	Liquid	0.0	0.05	0.0010	0.02	0.0050	Note 49
Year 4	N	21	0	0.9	0.9	0	100	11	0	0	0.7	21	0.3	0.1	0.0	0.0	0.0	21	0.2	0.01	0.02	0.01	0.01	Note 47
	Vol/NH3	Cattle	NO	0.0	0.2	NON	100.00	WWH	1.000	NO	0.4	Cattle	0.67			0.0	Cattle		0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.4	Dairy	2	0.0	0.0	0.0	0.1	Liquid	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year 5	N	21	0	0.2	0.2	0	100	1	0	0	0.1	21	0.1	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.1	Cattle	0.65			0.0	Cattle		0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.1	Dairy	2	0.0	0.0	0.0	0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year 6	N	21	0	0.0	0.0	0	100	109	0	0	0.0	72	0.0	0.0	0.0	0.0	0.0	72	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBB	1.000	NO	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	0.0	0.0	0.0	Low	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year 7	N	72	0	0.0	0.0	0	100	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Green	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67			0.0	Cattle		0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Low		0.533	1.000	ORG	1.00	1.000	0.787	0.0	0.0	Dairy	2	0.0	0.0	0.0	0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year 8	N	21	0	0.0	0.0	0	100	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67			0.0	Cattle		0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2	0.0	0.0	0.0	0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year 9	N	21	0	0.0	0.0	0	100	11	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67			0.0	Cattle		0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2	0.0	0.0	0.0	0.0	Liquid	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year 10	N	21	0	0.0	0.0	0	100	1	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Cattle	0.65			0.0	Cattle		0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Liquid		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2	0.0	0.0	0.0	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 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.13 0.03 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.85 1.24 Note 50

Possible additional non IPCC N2O-N emissions Value N residues emissions, ratio of N2O-N to N: 0.0000 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Current crops 4.12 Total IPCC and non IPCC N2O 2.34 Note 51 Increased soil N emissions, kg N2O-N/ha: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Total anthropogenic 4.12 2.34 Note 51 Natural background emissions, kg N2O-N/ha: 1.00 0.68 0.13 0.03 0.01 0.00 0.00 0.00 0.00 0.00 0.85 Total including natural 4.96 3.18 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
NO MANURE

WINTER BARLEY FOR BIOETHANOL AND
NOTHING FOR

FUEL
FUEL

Note 43
Note 43

Year

Fertilizer/manure
#

Store
Name

1/0

Store
Amounts

Field

Or-
ganic
1/0

Nnorm
proportion, %

Crop
#

Cereal
benefit
1/0

Straw
used
1/0

Fodder:
Use
#

N crop
#71/
#72

Food
#8

Fuel/
beverage
#9

Manure
handling
#

Final
N a-
mounts

N2O-N emission
IPCC 1996

N2O-N emission
Each

Total

Note 44
Note 44
Note 44

RATIO OF N2O-N TO N IN FIRST CROP														
Total N	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED													
Year N NH3	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3													
1-10 N leach	TOTAL N AMOUNTS IN KG AND % LEACHED													
	TOTAL N AMOUNTS IN KG AND %													
	100.0	2.2	57.8	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	0.0712	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398
	0.0712	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398	0.0398

N2O-N/N in food/beverage/fuel/other

0.0712

0.0398

Note 46

Year N	1	0	100.0	100.0	0	100	109	0	0	97.8	9	0.0	0.0	0.0	0.0	40.0	0	0.0	1.38	2.85	1.14	1.59
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Fuel/	0.84	0.0	0.0	0.0	NONE	0.0	0.02	0.0125	0.02	0.0100
	N leach		1.022	1.000	ORG	1.00	1.000		0.591	0.0	57.8	other	9	0.0	0.0	12.6		0.0	1.45	0.0000	0.43	0.0000
Year N	0	0	0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
2	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.67	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
3	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.67	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
4	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.67	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	1	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
5	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.65	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	109	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
6	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.84	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
7	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.67	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
8	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.67	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
9	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.67	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000
Year N	0	0	0	0.0	0.0	0	100	1	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	0.00
10	Vol/NH3	None	NO	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Fuel/	0.65	0.0	0.0	0.0	NONE	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	ORG	1.00	1.000		0.600	0.0	0.0	other	9	0.0	0.0	0.0		0.0	0.00	0.0000	0.00	0.0000

Year

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

Year 7

Year 8

Year 9

Year 10

Total

Total/year 1

Area with crop, ha

0.68

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.68

1.00

Note 50

Possible additional non IPCC N2O-N emissions

Value

0.0000

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

Total IPCC and non IPCC N2O

Note 51

N residues emissions, ratio of N2O-N to N:

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

2.85

1.59

Note 51

Increased soil N emissions, kg N2O-N/ha:

1.00

0.68

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.68

Total anthropogenic

1.59

Note 51

Natural background emissions, kg N2O-N/ha:

1.00

0.68

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.68

Total including natural

2.27

Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
NO MANURE

TO PRODUCE
TO PRODUCE

WINTER BARLEY FOR BIOETHANOL AND
NOTHING FOR

WASTE DUMPED ELSEWHERE WITHOUT LEACHING
WASTE, DUMPED ELSEWHERE

Note 43
Note 43

Year	Fertilizer/manure #	Store 1/0	Amounts Store 1/0	Field	Or- ganic 1/0	Nnorm proportion, %	Crop #	Cereal benefit 1/0	Straw used 1/0	Crop use & leach	Use #	Fodder: Uses #21-61 Fed	N crop #71/ #72	Food #8	Fuel/ bev #9	Manure handling #	Final N a- mounts	N2O-N emission IPCC 1996 Each	N2O-N emission IPCC 2006 Total	Total	Note 44 Note 44 Note 44
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Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										1.38	2.85	1.14	1.59	Note 45
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										0.02	0.02	0.02	0.02	Note 45
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										1.45	0.43	0.43	0.43	Note 45
TOTAL											TOTAL N AMOUNTS IN KG AND %										57.8	57.8	57.8	57.8	Note 45

N2O-N/N in food/beverage/fuel/other

Year	N	1	0	100.0	100.0	0	100	109	0	0	97.8	-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.38	2.85	1.14	1.59	Note 47
1	Vol/NH3	N	NO	0.0	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Waste	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach			1.022	1.000		ORG	1.00	1.000	0.591	0.0	57.8	moved	0					12.6	0.0	1.45	0.0000	0.43	0.0000	Note 49
Year	N	0	0	0.0	0.0	0.0	0	100	11	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	11	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	11	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	1	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.65	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	109	0	0	-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.84	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	11	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	11	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	11	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	0.0	0.0	0.0	0.0	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	0	0.0	0.0	0.0	0	100	1	0	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	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.65	0.0	0.0	0.0	0.0	0.0	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

Area with crop, ha

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	2.85	1.59 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00	2.85	1.59 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68	3.53	2.27 Note 51

N CHAIN STARTING WITH N FERTILIZER AND CONTINUING WITH NO MANURE TO PRODUCE Cereal benefit 1/0 Straw used 1/0 Crop use & leach TO PRODUCE WINTER BARLEY FOR BIOETHANOL AND NOTHING FOR N2O-N emission IPCC 1996 N2O-N emission IPCC 2006 WASTE DUMPED IN FIELD AND LOST TO LEACH WASTE DUMPED IN FIELD

Year Fertilizer/manure # Store Amounts Name 1/0 Store Field Or-ganic 1/0 Nnorm propor tion, % Name Crop use # Name Fuel/ bev #8 other #9 Manure Final handling N a- # Name mounts Each Total

Total N	RATIO OF N2O-N TO N IN FIRST CROP										1.38	3.85	1.14	1.89				
Year N NH3	IPCC 1996										0.02	0.02	0.02	Note 45				
1-10 N leach	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										0.0	0.0	0.0	Note 45				
	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3				2.2	2.2	2.2	Note 45
	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED				97.8	97.8	97.8	Note 45
	TOTAL										TOTAL N AMOUNTS IN KG AND %				100.0	100.0	100.0	Note 45

N2O-N/N in food/beverage/fuel/other

Year N	1	0	100.0	100.0	0	100	109	0	0	97.8	0	0.0	0.0	0.0	40.0	1.38	3.85	1.14	1.89
1	Vol/NH3 N	NO	0.0	0.0	2.2	NON	100.00	WBB	1.000	NO	57.8	Waste	0.84	0.0	None	0.02	0.0125	0.02	Note 47
	N leach	1.022	1.000	1.000	ORG	1.00	1.000		0.591	0.0	57.8	in field	0	12.6	40.0	2.45	0.0000	0.73	Note 48
Year N	0	0	0.0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 49
2	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
3	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
4	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	1	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
5	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.65	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	109	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
6	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.84	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
7	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
8	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	11	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
9	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.67	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49
Year N	0	0	0.0	0.0	0.0	0	100	1	0	0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	Note 47
10	Vol/NH3 None	NO	0.0	0.0	0.0	NON	100.00	NO	1.000	NO	0.0	Waste	0.65	0.0	None	0.00	0.0125	0.00	Note 48
	N leach	1.000	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	Note 49

Year Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7 Year 8 Year 9 Year 10 Total Total/year 1

Area with crop, ha 0.68 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.68 1.00 Note 50

Possible additional non IPCC N2O-N emissions	Value	Kind of source	Total IPCC and non IPCC N2O	Note 51
N residues emissions, ratio of N2O-N to N:	0.0000	0.00 Current crops	3.85	1.89 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00 Total anthropogenic	3.85	1.89 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.68 Total including natural	4.53	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	D						
SUMMARY CATTLE DAIRY												
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER	LIQUID CATTLE MANURE		TO PRODUCE TO PRODUCE	WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR	CATTLE DAIRY CATTLE DAIRY	Note 43 Note 43				
Total N	RATIO OF N2O-N TO N IN FIRST CROP		IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		13.98	13.91	1.76	3.73	1.59	2.27	Note 45
Year N NH3	ACCORDING TO		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		13.26	13.19	0.13		0.13		Note 45
1-10 N leach	FIRST YEAR		0.0724	TOTAL N AMOUNTS IN KG AND % LEACHED		73.28	72.91	1.83		0.55		Note 45
TOTAL			0.0932	TOTAL N AMOUNTS IN KG AND %		100.52	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.2667		0.1623	Note 46
Area with crop, ha		Total/year 1		0.87		1.28						Note 50
Natural background emissions, kg N2O-N/ha:				0.87					4.60		3.14	Note 51
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER	SEPARATED CATTLE MANURE		TO PRODUCE TO PRODUCE	WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR		CATTLE DAIRY CATTLE DAIRY				Note 43 Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP		IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		13.87	13.79	2.09	4.07	1.60	2.28	Note 45
Year N NH3	ACCORDING TO		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		12.36	12.30	0.12		0.12		Note 45
1-10 N leach	FIRST YEAR		0.0786	TOTAL N AMOUNTS IN KG AND % LEACHED		74.30	73.91	1.86		0.56		Note 45
TOTAL			0.1017	TOTAL N AMOUNTS IN KG AND %		100.53	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.2933		0.1642	Note 46
Area with crop, ha		Total/year 1		0.86		1.27						Note 50
Natural background emissions, kg N2O-N/ha:				0.86					4.93		3.14	Note 51
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER	CATTLE DEEP LITTER		TO PRODUCE TO PRODUCE	WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR		CATTLE DAIRY CATTLE DAIRY				Note 43 Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP		IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		13.34	12.71	2.39	4.48	1.61	2.33	Note 45
Year N NH3	ACCORDING TO		IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		13.22	12.60	0.13		0.13		Note 45
1-10 N leach	FIRST YEAR		0.0849	TOTAL N AMOUNTS IN KG AND % LEACHED		78.40	74.69	1.96		0.59		Note 45
TOTAL			0.1120	TOTAL N AMOUNTS IN KG AND %		104.96	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.3359		0.1746	Note 46
Area with crop, ha		Total/year 1		0.82		1.20						Note 50
Natural background emissions, kg N2O-N/ha:				0.82					5.30		3.14	Note 51
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER	MANURE FROM GRAZING CATTLE		TO PRODUCE TO PRODUCE	WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR		CATTLE DAIRY CATTLE DAIRY				Note 43 Note 43
Total N	RATIO OF N2O-N TO N IN FIRST CROP		IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		13.19	13.19	2.47	4.57	2.15	2.81	Note 45
Year N NH3	ACCORDING TO		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		0.0853	TOTAL N AMOUNTS IN KG AND % LEACHED		82.32	82.32	2.06		0.62		Note 45
TOTAL			0.1142	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45
N2O-N/N in food/beverage/fuel/other									0.3463		0.2128	Note 46
Area with crop, ha		Total/year 1		0.78		1.14						Note 50
Natural background emissions, kg N2O-N/ha:				0.78					5.35		3.59	Note 51

SUMMARY CATTLE BEEF

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
LIQUID CATTLE MANURE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

CATTLE BEEF
CATTLE BEEF

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		12.44	12.37	1.79	3.78	1.61	2.31	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		13.91	13.83	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0724	TOTAL N AMOUNTS IN KG AND % LEACHED		74.20	73.79	1.85		0.56		Note 45
TOTAL		0.0945	TOTAL N AMOUNTS IN KG AND %		100.55	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1		0.3039	0.1856	Note 46
Natural background emissions, kg N2O-N/ha:	0.88	1.30			Note 50
	0.88		4.66	3.19	Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
SEPARATED CATTLE MANURE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

CATTLE BEEF
CATTLE BEEF

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		12.34	12.27	2.13	4.14	1.62	2.32	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		12.96	12.89	0.13		0.13		Note 45
1-10 N leach	FIRST YEAR	0.0789	TOTAL N AMOUNTS IN KG AND % LEACHED		75.27	74.85	1.88		0.56		Note 45
TOTAL		0.1035	TOTAL N AMOUNTS IN KG AND %		100.56	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1		0.3356	0.1879	Note 46
Natural background emissions, kg N2O-N/ha:	0.87	1.28			Note 50
	0.82		5.01	3.19	Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
CATTLE DEEP LITTER

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

CATTLE BEEF
CATTLE BEEF

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		11.84	11.25	2.45	4.57	1.64	2.37	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		13.84	13.15	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0855	TOTAL N AMOUNTS IN KG AND % LEACHED		79.55	75.60	1.99		0.60		Note 45
TOTAL		0.1143	TOTAL N AMOUNTS IN KG AND %		105.24	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1		0.3863	0.2002	Note 46
Natural background emissions, kg N2O-N/ha:	0.82	1.21			Note 50
	0.82		5.40	3.19	Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
MANURE FROM GRAZING CATTLE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

CATTLE BEEF
CATTLE BEEF

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		11.70	11.70	2.53	4.66	2.20	2.88	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		4.62	4.62	0.05		0.05		Note 45
1-10 N leach	FIRST YEAR	0.0860	TOTAL N AMOUNTS IN KG AND % LEACHED		83.68	83.68	2.09		0.63		Note 45
TOTAL		0.1166	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1		0.3986	0.2457	Note 46
Natural background emissions, kg N2O-N/ha:	0.78	1.15			Note 50
	0.78		5.45	3.66	Note 51

SUMMARY PIG PORK

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID PIG MANURE

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	19.67	19.67	1.65	3.48	1.46	2.09
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	11.92	11.92	0.12		0.12	Note 45
1-10 N leach	FIRST YEAR	0.0725	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED	68.40	68.40	1.71		0.51	Note 45
	TOTAL	0.0871	0.0523	TOTAL N AMOUNTS IN KG AND %	100.00	100.00				Note 45

N2O-N/N in food/beverage/fuel/other							0.1771		0.1064	Note 46
Area with crop, ha					Total/year 1					
Natural background emissions, kg N2O-N/ha:					0.83	1.22				Note 50
					0.83			4.31		2.92 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED PIG MANURE

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	19.15	19.05	1.85	3.69	1.44	2.08
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	12.60	12.53	0.13		0.13	Note 45
1-10 N leach	FIRST YEAR	0.0772	0.0432	TOTAL N AMOUNTS IN KG AND % LEACHED	68.77	68.41	1.72		0.52	Note 45
	TOTAL	0.0923	0.0521	TOTAL N AMOUNTS IN KG AND %	100.52	100.00				Note 45

N2O-N/N in food/beverage/fuel/other							0.1928		0.1088	Note 46
Area with crop, ha					Total/year 1					
Natural background emissions, kg N2O-N/ha:					0.80	1.18				Note 50
					0.80			4.50		2.88 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER PIG DEEP LITTER

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	19.17	18.70	2.02	3.89	1.43	2.10
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	14.51	14.15	0.15		0.15	Note 45
1-10 N leach	FIRST YEAR	0.0814	0.0434	TOTAL N AMOUNTS IN KG AND % LEACHED	68.86	67.15	1.72		0.52	Note 45
	TOTAL	0.0972	0.0524	TOTAL N AMOUNTS IN KG AND %	102.54	100.00				Note 45

N2O-N/N in food/beverage/fuel/other							0.2028		0.1093	Note 46
Area with crop, ha					Total/year 1					
Natural background emissions, kg N2O-N/ha:					0.80	1.18				Note 50
					0.80			4.69		2.90 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM ROOTING PIGS

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	19.70	19.70	2.29	4.24	1.98	2.60
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	0.0828	0.0514	TOTAL N AMOUNTS IN KG AND % LEACHED	76.18	76.18	1.90		0.57	Note 45
	TOTAL	0.1059	0.0649	TOTAL N AMOUNTS IN KG AND %	100.00	100.00				Note 45

N2O-N/N in food/beverage/fuel/other							0.2150		0.1317	Note 46
Area with crop, ha					Total/year 1					
Natural background emissions, kg N2O-N/ha:					0.80	1.18				Note 50
					0.80			5.04		3.40 Note 51

SUMMARY POULTRY MEAT

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID POULTRY MANURE

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY MEAT POULTRY MEAT

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	23.04	23.04	1.61	3.40	1.41	2.01	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	9.39	9.39	0.09	0.09	0.09	0.09	Note 45
1-10 N leach	FIRST YEAR	0.0721	0.0425	TOTAL N AMOUNTS IN KG AND % LEACHED	67.56	67.56	1.69	1.69	0.51	0.51	Note 45
TOTAL	TOTAL	0.0849	0.0503	TOTAL N AMOUNTS IN KG AND %	100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha				Total/year 1	0.1474	0.0873	Note 46
Natural background emissions, kg N2O-N/ha:				0.79	1.16		
				0.79	4.18		Note 50
						2.80	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED POULTRY MANURE

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY MEAT POULTRY MEAT

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	22.56	22.56	1.72	3.48	1.36	1.97	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	11.68	11.68	0.12	0.12	0.12	0.12	Note 45
1-10 N leach	FIRST YEAR	0.0763	0.0428	TOTAL N AMOUNTS IN KG AND % LEACHED	65.76	65.76	1.64	1.64	0.49	0.49	Note 45
TOTAL	TOTAL	0.0871	0.0492	TOTAL N AMOUNTS IN KG AND %	100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha				Total/year 1	0.1545	0.0873	Note 46
Natural background emissions, kg N2O-N/ha:				0.77	1.13		
				0.77	4.25		Note 50
						2.74	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER POULTRY DEEP LITTER

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY MEAT POULTRY MEAT

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	21.56	21.52	1.76	3.52	1.31	1.93	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	13.63	13.61	0.14	0.14	0.14	0.14	Note 45
1-10 N leach	FIRST YEAR	0.0790	0.0432	TOTAL N AMOUNTS IN KG AND % LEACHED	64.97	64.87	1.62	1.62	0.49	0.49	Note 45
TOTAL	TOTAL	0.0881	0.0483	TOTAL N AMOUNTS IN KG AND %	100.16	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha				Total/year 1	0.1635	0.0896	Note 46
Natural background emissions, kg N2O-N/ha:				0.73	1.07		
				0.73	4.25		Note 50
						2.66	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM SCRAPING POULTRY

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY MEAT POULTRY MEAT

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	22.37	22.37	2.09	3.98	1.80	2.39	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	0.04	0.04	Note 45
1-10 N leach	FIRST YEAR	0.0810	0.0496	TOTAL N AMOUNTS IN KG AND % LEACHED	73.92	73.92	1.85	1.85	0.55	0.55	Note 45
TOTAL	TOTAL	0.0995	0.0598	TOTAL N AMOUNTS IN KG AND %	100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha				Total/year 1	0.1778	0.1069	Note 46
Natural background emissions, kg N2O-N/ha:				0.75	1.10		
				0.75	4.72		Note 50
						3.14	Note 51

SUMMARY POULTRY EGGS

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID POULTRY MANURE

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS

POULTRY EGGS

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	ENDING AS FOOD/FUEL/OTHER/REMOVED	11.72	11.72	1.77	3.76	1.59	2.29	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	VOLATILISATION/NH3	14.20	14.20	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0726	TOTAL N AMOUNTS IN KG AND %	LEACHED	74.08	74.08	1.85		0.56		Note 45
TOTAL		0.0940	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	0.3209	0.1954	Note 46
Natural background emissions, kg N2O-N/ha:	0.86	1.26		Note 50
	0.86	4.62	3.15	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED POULTRY MANURE

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS

POULTRY EGGS

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	ENDING AS FOOD/FUEL/OTHER/REMOVED	11.31	11.31	1.95	3.90	1.50	2.21	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	VOLATILISATION/NH3	17.79	17.79	0.18		0.18		Note 45
1-10 N leach	FIRST YEAR	0.0791	TOTAL N AMOUNTS IN KG AND %	LEACHED	70.90	70.90	1.77		0.53		Note 45
TOTAL		0.0974	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	0.3443	0.1956	Note 46
Natural background emissions, kg N2O-N/ha:	0.82	1.21		Note 50
	0.82	4.72	3.04	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER POULTRY DEEP LITTER

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS

POULTRY EGGS

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	ENDING AS FOOD/FUEL/OTHER/REMOVED	10.51	10.49	1.99	3.93	1.41	2.14	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	VOLATILISATION/NH3	20.47	20.42	0.20		0.20		Note 45
1-10 N leach	FIRST YEAR	0.0833	TOTAL N AMOUNTS IN KG AND %	LEACHED	69.27	69.09	1.73		0.52		Note 45
TOTAL		0.0982	TOTAL N AMOUNTS IN KG AND %		100.26	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	0.3737	0.2032	Note 46
Natural background emissions, kg N2O-N/ha:	0.76	1.11		Note 50
	0.76	4.68	2.89	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM SCRAPING POULTRY

WINTER BARLEY FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS

POULTRY EGGS

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	ENDING AS FOOD/FUEL/OTHER/REMOVED	11.17	11.17	2.55	4.70	2.22	2.90	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	TOTAL N AMOUNTS IN KG AND %	VOLATILISATION/NH3	4.66	4.66	0.05		0.05		Note 45
1-10 N leach	FIRST YEAR	0.0864	TOTAL N AMOUNTS IN KG AND %	LEACHED	84.17	84.17	2.10		0.63		Note 45
TOTAL		0.1175	TOTAL N AMOUNTS IN KG AND %		100.00	100.00					Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	0.4208	0.2597	Note 46
Natural background emissions, kg N2O-N/ha:	0.79	1.16		Note 50
	0.79	5.49	3.69	Note 51

SUMMARY SHEEP AND GOATS

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
SHEEP DEEP LITTER

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

SHEEP MILK/MUTTON
SHEEP MILK/MUTTON

Note 43
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		SHEEP MILK/MUTTON	
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	7.13	6.73
1-10 N leach	FIRST YEAR	0.0871	0.0447	TOTAL N AMOUNTS IN KG AND % LEACHED	8.66	8.18
TOTAL		0.1264	0.0645	TOTAL N AMOUNTS IN KG AND %	90.14	85.09
					105.93	100.00

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	
Natural background emissions, kg N2O-N/ha:	0.84	1.23
	0.84	

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
MANURE FROM GRAZING SHEEP

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

SHEEP MILK/MUTTON
SHEEP MILK/MUTTON

Note 43
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		SHEEP MILK/MUTTON	
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	6.72	6.72
1-10 N leach	FIRST YEAR	0.0883	0.0398	TOTAL N AMOUNTS IN KG AND % LEACHED	5.04	5.04
TOTAL		0.1246	0.0572	TOTAL N AMOUNTS IN KG AND %	88.24	88.24
					100.00	100.00

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	
Natural background emissions, kg N2O-N/ha:	0.80	1.18
	0.80	

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
GOAT DEEP LITTER

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

GOAT MILK/MEAT
GOAT MILK/MEAT

Note 43
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		GOAT MILK/MEAT	
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	4.58	4.32
1-10 N leach	FIRST YEAR	0.0879	0.0450	TOTAL N AMOUNTS IN KG AND % LEACHED	19.30	18.22
TOTAL		0.1203	0.0625	TOTAL N AMOUNTS IN KG AND %	82.06	77.46
					105.93	100.00

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	
Natural background emissions, kg N2O-N/ha:	0.84	1.23
	0.84	

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
MANURE FROM GRAZING GOATS

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

GOAT MILK/MEAT
GOAT MILK/MEAT

Note 43
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		GOAT MILK/MEAT	
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	4.59	4.59
1-10 N leach	FIRST YEAR	0.0893	0.0488	TOTAL N AMOUNTS IN KG AND % LEACHED	5.22	5.22
TOTAL		0.1280	0.0692	TOTAL N AMOUNTS IN KG AND %	90.19	90.19
					100.00	100.00

N2O-N/N in food/beverage/fuel/other

Area with crop, ha	Total/year 1	
Natural background emissions, kg N2O-N/ha:	0.81	1.19
	0.81	

SUMMARY N CROP

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
GREEN MANURE HIGH N

TO PRODUCE
TO PRODUCE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

HIGH N CROP
CATTLE DAIRY

Note 43
Note 43

Total N

RATIO OF N2O-N TO N IN FIRST CROP

Year N NH3

IPCC 1996

IPCC 2006

1-10 N leach

0.0712

0.0398

0.1028

0.0597

2.39

0.16

0.61

4.11

1.62

2.39

Note 45

Note 45

Note 45

Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha

Natural background emissions, kg N2O-N/ha:

Total/year 1

0.97

1.43

0.97

1.2487

0.7257

Note 46

Note 50

3.36

Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg

11.20

N amount in reference crop year 1 after synthetic N fertilizer, kg

40.00

Relative value of green manure, %

28.00

Note 47

Note 47

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
GREEN MANURE LOW N

TO PRODUCE
TO PRODUCE

WINTER BARLEY FOR BIOETHANOL AND
WINTER WHEAT FOR

LOW N CROP
CATTLE DAIRY

Note 43
Note 43

Total N

RATIO OF N2O-N TO N IN FIRST CROP

Year N NH3

IPCC 1996

IPCC 2006

1-10 N leach

0.0712

0.0398

0.1029

0.0584

1.88

1.87

4.12

1.56

2.34

Note 45

Note 45

Note 45

Note 45

N2O-N/N in food/beverage/fuel/other

Area with crop, ha

Natural background emissions, kg N2O-N/ha:

Total/year 1

0.85

1.24

0.85

2.1885

1.2425

Note 46

Note 50

3.18

Note 51

N amount in reference crop year 2 after use of N crop as green manure, kg

6.40

N amount in reference crop year 1 after synthetic N fertilizer, kg

40.00

Relative value of green manure, %

16.00

Note 47

Note 47

SUMMARY FOOD, FUEL, AND WASTE

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER BARLEY FOR BIOETHANOL AND NOTHING FOR

FOOD FOOD

Note 43 Note 43

Total N

RATIO OF N2O-N TO N IN FIRST CROP

Year N NH3

IPCC 1996

1-10 N leach

0.0712

0.0398

0.0398

TOTAL N AMOUNTS IN KG AND % LEACHED

57.80

57.80

100.00

100.00

1.38

0.02

1.45

2.85

0.02

1.14

1.59

Note 45

Note 45

Note 45

Note 45

N2O-N/N in food/beverage/fuel/other

0.0712

0.0398

Note 46

Area with crop, ha

Natural background emissions, kg N2O-N/ha:

Total/year 1

0.68

1.00

0.68

3.53

0.0398

Note 50

Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER BARLEY FOR BIOETHANOL AND NOTHING FOR

FUEL FUEL

Note 43 Note 43

Total N

RATIO OF N2O-N TO N IN FIRST CROP

Year N NH3

IPCC 1996

1-10 N leach

0.0712

0.0398

0.0398

TOTAL N AMOUNTS IN KG AND % LEACHED

57.80

57.80

100.00

100.00

1.38

0.02

1.45

2.85

0.02

1.14

1.59

Note 45

Note 45

Note 45

Note 45

N2O-N/N in food/beverage/fuel/other

0.0712

0.0398

Note 46

Area with crop, ha

Natural background emissions, kg N2O-N/ha:

Total/year 1

0.68

1.00

0.68

3.53

0.0398

Note 50

Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER BARLEY FOR BIOETHANOL AND NOTHING FOR

WASTE DUMPED ELSEWHERE WITHOUT LEACHING WASTE, DUMPED ELSEWHERE

Note 43 Note 43

Total N

RATIO OF N2O-N TO N IN FIRST CROP

Year N NH3

IPCC 1996

1-10 N leach

0.0712

0.0398

0.0398

TOTAL N AMOUNTS IN KG AND % LEACHED

57.80

57.80

100.00

100.00

1.38

0.02

1.45

2.85

0.02

1.14

1.59

Note 45

Note 45

Note 45

Note 45

N2O-N/N in food/beverage/fuel/other

0.0712

0.0398

No use

Note 46

Area with crop, ha

Natural background emissions, kg N2O-N/ha:

Total/year 1

0.68

1.00

0.68

3.53

0.0398

Note 50

Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER BARLEY FOR BIOETHANOL AND NOTHING FOR

WASTE DUMPED IN FIELD AND LOST TO LEACH WASTE DUMPED IN FIELD

Note 43 Note 43

Total N

RATIO OF N2O-N TO N IN FIRST CROP

Year N NH3

IPCC 1996

1-10 N leach

0.0962

0.0473

0.0473

TOTAL N AMOUNTS IN KG AND % LEACHED

97.80

97.80

100.00

100.00

1.38

0.02

2.45

3.85

0.02

1.14

1.89

Note 45

Note 45

Note 45

Note 45

N2O-N/N in food/beverage/fuel/other

0.0962

0.0473

No use

Note 46

Area with crop, ha

Natural background emissions, kg N2O-N/ha:

Total/year 1

0.68

1.00

0.68

4.53

0.0473

Note 50

Note 51

SUMMARY CATTLE	RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996		IPCC 2006		N2O-N emission IPCC 1996		N2O-N emission IPCC 2006	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	FIRST YEAR	0.0724	0.0860	0.0435	0.0546	3.73	4.66	2.27	2.88

TOTAL	0.0932	0.1166	0.0567	0.0719					
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N2O-N/N in food/beverage/fuel/other

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:

SUMMARY PIGS	RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996		IPCC 2006		N2O-N emission IPCC 1996		N2O-N emission IPCC 2006	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	FIRST YEAR	0.0725	0.0828	0.0431	0.0514	3.48	4.24	2.08	2.6

TOTAL	0.0871	0.1059	0.0521	0.0649					
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N2O-N/N in food/beverage/fuel/other

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:

SUMMARY POULTRY	RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996		IPCC 2006		N2O-N emission IPCC 1996		N2O-N emission IPCC 2006	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	FIRST YEAR	0.0721	0.0864	0.0425	0.0550	3.4	4.7	1.93	2.9

TOTAL	0.0849	0.1175	0.0483	0.0725					
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N2O-N/N in food/beverage/fuel/other

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:

SUMMARY SHEEP AND GOATS	RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996		IPCC 2006		N2O-N emission IPCC 1996		N2O-N emission IPCC 2006	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	FIRST YEAR	0.0871	0.0893	0.0398	0.0488	4.81	5.12	2.29	2.77

TOTAL	0.1203	0.1280	0.0572	0.0692					
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N2O-N/N in food/beverage/fuel/other

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha:

SUMMARY FODDER	RATIO OF N2O-N TO N IN FIRST CROP ACCORDING TO	IPCC 1996		IPCC 2006		N2O-N emission IPCC 1996		N2O-N emission IPCC 2006	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	FIRST YEAR	0.0721	0.0893	0.0398	0.0550	3.40	5.12	1.93	2.90

TOTAL	0.0849	0.1280	0.0483	0.0725					
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N2O-N/N in food/beverage/fuel/other

Natural background emissions in kg N2O-N/ha, area with crop in ha, and total emissions in kg N2O-N/ha: