

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
SEPARATED CATTLE MANURE

TO PRODUCE
TO PRODUCE

WINTER WHEAT FOR BIOETHANOL AND
WINTER WHEAT FOR

CATTLE DAIRY
CATTLE DAIRY

Note 43
Note 43

Year

Fertilizer/manure
#

Store
1/0

Amounts
Store

Field
1/0

Or-
ganic
1/0

Nhorm
proportion,
%

Crop
#

Cereal
benefit
1/0

Straw
used
1/0

Crop
leach

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														13.9	13.8
Year N NH3	IPCC 1996														12.4	12.3
1-10 N leach	0.0788														74.3	73.9
	0.1019														100.5	100.0
	TOTAL															

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

0.2940

0.1649

Note 46

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	21	40.0	11.8	0.0	0.0	0.0	0.0	22	28.2	1.67	3.15	1.28	1.75
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	Cattle	0.84						0.0	Cattle	1.4	0.04	0.0100	
	N leach		1.022	1.000	ORG	1.00	1.000		0.591	0.0	57.8	Dairy	2					13.3	Sep	0.0	1.45	0.0105	0.43	
Year 2	N	22	0	27.2	27.2	0	100	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	
	Vol/NH3	Cattle	NO	0.0	6.8	NON	100.00	WWH	1.000	NO	13.3	Cattle	0.67						0.0	Cattle	0.3	0.07	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	13.3	Dairy	2						2.8	Sep	0.0	0.33	0.0100	
Year 3	N	22	0	5.2	5.2	0	100	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	
	Vol/NH3	Cattle	NO	0.0	1.3	NON	100.00	WWH	1.000	NO	2.6	Cattle	0.67						0.0	Cattle	0.1	0.01	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	2.6	Dairy	2						0.5	Sep	0.0	0.06	0.0100	
Year 4	N	22	0	1.0	1.0	0	100	1	0	0	0.8	21	0.3	0.1	0.0	0.0	0.0	0.0	22	0.2	0.01	0.03	0.02	
	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	SBA	1.000	NO	0.5	Cattle	0.65						0.0	Cattle	0.0	0.00	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.5	Dairy	2						0.1	Sep	0.0	0.01	0.0050	
Year 5	N	22	0	0.2	0.2	0	100	10	0	0	0.1	21	0.1	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.01	0.00	
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	Cattle	0.66						0.0	Cattle	0.0	0.00	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.1	Dairy	2						0.0	Sep	0.0	0.00	0.0050	
Year 6	N	22	0	0.0	0.0	0	100	119	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	
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0.0	Cattle	0.84						0.0	Cattle	0.0	0.00	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.0	Dairy	2						0.0	Sep	0.0	0.00	0.0050	
Year 7	N	22	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	22	0.0	0.00	0.00	0.00	
	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	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.0	Dairy	2						0.0	Sep	0.0	0.00	0.0050	
Year 8	N	22	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	22	0.0	0.00	0.00	0.00	
	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	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.0	Dairy	2						0.0	Sep	0.0	0.00	0.0050	
Year 9	N	22	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	22	0.0	0.00	0.00	0.00	
	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	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.0	Dairy	2						0.0	Sep	0.0	0.00	0.0050	
Year 10	N	22	0	0.0	0.0	0	100	10	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	
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Cattle	0.66						0.0	Cattle	0.0	0.00	0.0100	
	N leach	Sep	0.867	1.016	ORG	1.00	1.000		0.653	0.0	0.0	Dairy	2						0.0	Sep	0.0	0.00	0.0050	

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

0.64

0.15

0.03

0.01

0.00

0.00

0.00

0.00

0.00

0.00

0.82

1.29

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

4.08

4.08

4.90

Note 51

2.29

2.29

3.11

Note 51

Note 51

Note 51

Note 51

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

AND CONTINUING WITH MANURE FROM GRAZING CATTLE

Year Fertilizer/manure Fertilizer/manure Or- Nnorm Crop Crop Straw Straw Cereal Cereal N crop Food/ Fuel/ N2O-N emission N2O-N emission

Store Store Amounts ganic propor # use & use #71/ bev other IPCC 1996 IPCC 2006

Name 1/0 Store Field 1/0 Name Name Name Fed Food #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									
	Year N NH3		According to		IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		13.2		13.2		2.15		2.82		Note 45	
	1-10 N leach		First Year		0.0855		0.0541		TOTAL N AMOUNTS IN KG AND % LEACHED		4.5		4.5		0.04		Note 45		Note 45	
			Total		0.1144		0.0704		TOTAL N AMOUNTS IN KG AND %		100.0		100.0		2.06		Note 45		Note 45	

N2O-N/N in food/beverage/fuel/other 0.3470 0.2135 Note 46

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	21	40.0	11.8	0.0	0.0	0.0	0.0	24	28.2	1.95	3.42	1.71	2.16	Note 47
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	0	0.84	0.84	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach		1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	Dairy	2	2	13.3	Graz	0.0	1.45	0.0200	0.43	0.0200	1.45	0.0200	0.43	0.0200	Note 49
Year 2	N	24	0	28.2	28.2	0	100	11	0	0	26.2	21	5.1	1.2	0.0	0.0	0.0	0.0	24	3.9	0.45	1.00	0.38	0.56	Note 47
	Vol/NH3	Cattle	NO	0.0	2.0	NON	100.00	WWH	1.000	NO	0	0.67	0.67	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.02	0.0125	0.02	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	21.1	Dairy	2	2	3.6	Graz	0.0	0.53	0.0200	0.16	0.0200	0.53	0.0200	0.16	0.0200	Note 49
Year 3	N	24	0	3.9	3.9	0	100	11	0	0	3.6	21	0.7	0.2	0.0	0.0	0.0	0.0	24	0.5	0.06	0.14	0.05	0.08	Note 47
	Vol/NH3	Cattle	NO	0.0	0.3	NON	100.00	WWH	1.000	NO	0	0.67	0.67	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	2.9	Dairy	2	2	0.5	Graz	0.0	0.07	0.0200	0.02	0.0200	0.07	0.0200	0.02	0.0200	Note 49
Year 4	N	24	0	0.5	0.5	0	100	1	0	0	0.5	21	0.1	0.0	0.0	0.0	0.0	0.0	24	0.1	0.01	0.02	0.01	0.01	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0	0.65	0.65	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.4	Dairy	2	2	0.1	Graz	0.0	0.01	0.0200	0.00	0.0200	0.01	0.0200	0.00	0.0200	Note 49
Year 5	N	24	0	0.1	0.1	0	100	10	0	0	0.1	21	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0	0.66	0.66	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.1	Dairy	2	2	0.1	Graz	0.0	0.00	0.0200	0.00	0.0200	0.00	0.0200	0.00	0.0200	Note 49
Year 6	N	24	0	0.0	0.0	0	100	119	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0	0.84	0.84	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2	2	0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	0.00	0.0200	0.00	0.0200	Note 49
Year 7	N	24	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	24	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	0.67	0.67	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2	2	0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	0.00	0.0200	0.00	0.0200	Note 49
Year 8	N	24	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	24	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	0.67	0.67	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2	2	0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	0.00	0.0200	0.00	0.0200	Note 49
Year 9	N	24	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	24	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	0.65	0.65	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2	2	0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	0.00	0.0200	0.00	0.0200	Note 49
Year 10	N	24	0	0.0	0.0	0	100	10	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.00	0.00	0.00	0.00	Note 47
	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0	0.66	0.66	0.0	0.0	0.0	0.0	0.0	Cattle	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Graz	0.484	1.000	ORG	1.00	1.000	0.806	0.0	0.0	Dairy	2	2	0.0	Graz	0.0	0.00	0.0200	0.00	0.0200	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 0.64 0.08 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.74 1.16 Note 50

Possible additional non IPCC N2O-N emissions Value Kind of source Total IPCC and non IPCC N2O Note 51

N residues emissions, ratio of N2O-N to N: 0.0000 0.00 Current crops 4.58 2.82 Note 51

Increased soil N emissions, kg N2O-N/ha: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.74 Total anthropogenic 4.58 2.82 Note 51

Natural background emissions, kg N2O-N/ha: 1.00 0.64 0.08 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.74 Total including natural 5.31 3.55 Note 51

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AND CONTINUING WITH

N FERTILIZER
SEPARATED CATTLE MANURE

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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
IPCC 2006

Total
Each

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										12.3	12.3
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										13.0	12.9
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										75.3	74.8
	TOTAL										TOTAL N AMOUNTS IN KG AND %										100.6	100.0

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

0.3363

0.1886

Note 46

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	22	40.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	22	29.6	1.68	3.17	1.28	1.76 Note 47
	Vol/NH3	N	NO	0.0	2.2 NON	100.00	WWHB	1.000	NO	57.8	Cattle	0.84									0.0	1.5	0.04	0.125	0.04	0.0100 Note 48
	N leach		1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8	Beef	2									13.3	Sep	0.145	0.0105	0.43	0.0050 Note 49
Year 2	N	22	0	28.6	0	100	11	0	0	21.4	22	7.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	5.9	0.36	0.79	0.28	0.46 Note 47
	Vol/NH3	Cattle	NO	0.0	7.1 NON	100.00	WWH	1.000	NO	14.0	Cattle	0.67									0.0	0.3	0.07	0.125	0.07	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	14.0	Beef	2									2.9	Sep	0.35	0.105	0.10	0.0050 Note 49
Year 3	N	22	0	5.7	0	100	11	0	0	4.3	22	1.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	1.2	0.07	0.16	0.06	0.09 Note 47
	Vol/NH3	Cattle	NO	0.0	1.4 NON	100.00	WWH	1.000	NO	2.8	Cattle	0.67									0.0	0.1	0.01	0.125	0.01	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	2.8	Beef	2									0.6	Sep	0.07	0.105	0.02	0.0050 Note 49
Year 4	N	22	0	1.1	0	100	1	0	0	0.8	22	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	0.2	0.01	0.03	0.01	0.02 Note 47
	Vol/NH3	Cattle	NO	0.0	0.3 NON	100.00	SBA	1.000	NO	0.6	Cattle	0.65									0.0	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.6	Beef	2									0.1	Sep	0.01	0.105	0.00	0.0050 Note 49
Year 5	N	22	0	0.2	0	100	10	0	0	0.2	22	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.01	0.00	0.00 Note 47
	Vol/NH3	Cattle	NO	0.0	0.1 NON	100.00	WBA	1.000	NO	0.1	Cattle	0.66									0.0	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.1	Beef	2									0.0	0.0	0.00	0.105	0.00	0.0050 Note 49
Year 6	N	22	0	0.0	0	100	119	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Cattle	NO	0.0	0.0 NON	100.00	WWHB	1.000	NO	0.0	Cattle	0.84									0.0	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.0	Beef	2									0.0	0.0	0.00	0.105	0.00	0.0050 Note 49
Year 7	N	22	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	0.0	0.0	22	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	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.0	Beef	2									0.0	0.0	0.00	0.105	0.00	0.0050 Note 49
Year 8	N	22	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	0.0	0.0	22	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	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.0	Beef	2									0.0	0.0	0.00	0.105	0.00	0.0050 Note 49
Year 9	N	22	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	0.0	0.0	22	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	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.0	Beef	2									0.0	0.0	0.00	0.105	0.00	0.0050 Note 49
Year 10	N	22	0	0.0	0	100	10	0	0	0.0	22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Cattle	NO	0.0	0.0 NON	100.00	WBA	1.000	NO	0.0	Cattle	0.66									0.0	0.0	0.00	0.125	0.00	0.0100 Note 48
	N leach	Sep	0.867	1.016	ORG	1.00	1.000	0.653	0.0	0.0	Beef	2									0.0	0.0	0.00	0.105	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

0.64

0.15

0.03

0.01

0.00

0.00

0.00

0.00

0.00

0.00

0.83

1.31

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

4.15

4.15

4.98

Note 51

2.33

2.33

3.16

Note 51

Note 51

Note 51

Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN CONTINUING WITH MANURE FROM ROOTING PIGS TO PRODUCE TO PRODUCE WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR PIG PORK PIG PORK

Year Fertilizer/manure # Store Amounts Store 1/0 Store Field Name 1/0 Or-ganic 1/0 Nnorm propor tion, % Crop # Crop use & leach Straw used 1/0 Cereal benefit 1/0 Fodder: Uses #21-61 Fed Food #72 N crop #71/ bevs other #8 Fuel/ #9 Manure handling N-a-IPCC 1996 Final 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										19.7	19.7
Year N NH3	ACCORDING TO IPCC 1996										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										4.1	4.1
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										76.2	76.2
	TOTAL										TOTAL N AMOUNTS IN KG AND %										100.0	100.0

N2O-N/N in food/beverage/fuel/other 0.2155 0.1322 Note 46

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	32	40.0	16.7	0.0	0.0	0.0	0.0	0.0	23.3	1.85	3.32	1.61	2.07 Note 47
	Vol/NH3	N	NO	0.0	0.0	2.2 NON	100.00	WWHB	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	1.000	ORG	1.00	1.000	0.591	0.0	57.8 Pork	3	3							13.3 Root	0.0	0.0200	0.43	0.0200 Note 49
Year 2	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	3.5	0.38	0.78	0.32	0.46 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	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	1.000	ORG	1.00	1.000	0.720	0.0	15.6 Pork	3	3							2.9 Root	0.0	0.0200	0.12	0.0200 Note 49
Year 3	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	0.5	0.06	0.12	0.05	0.07 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	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	1.000	ORG	1.00	1.000	0.720	0.0	2.4 Pork	3	3							0.4 Root	0.06	0.0200	0.02	0.0200 Note 49
Year 4	N	34	0	0.5	0.5	0	100	1	0	0	0.5	32	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.01	0.01	0.02	0.01	0.01 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	0.0 NON	100.00	SBA	1.000	NO	0.4 Pig	0.65								0.0 Pig	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000	1.000	ORG	1.00	1.000	0.720	0.0	0.4 Pork	3	3							0.1 Root	0.01	0.0200	0.00	0.0200 Note 49
Year 5	N	34	0	0.1	0.1	0	100	10	0	0	0.1	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	0.0 NON	100.00	WBA	1.000	NO	0.1 Pig	0.66								0.0 Pig	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000	1.000	ORG	1.00	1.000	0.720	0.0	0.1 Pork	3	3							0.0 Root	0.00	0.0200	0.00	0.0200 Note 49
Year 6	N	34	0	0.0	0.0	0	100	119	0	0	0.0	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	0.0 NON	100.00	WWHB	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	1.000	ORG	1.00	1.000	0.720	0.0	0.0 Pork	3	3							0.0 Root	0.00	0.0200	0.00	0.0200 Note 49
Year 7	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	0.00	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	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	1.000	ORG	1.00	1.000	0.720	0.0	0.0 Pork	3	3							0.0 Root	0.00	0.0200	0.00	0.0200 Note 49
Year 8	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	0.00	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	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	1.000	ORG	1.00	1.000	0.720	0.0	0.0 Pork	3	3							0.0 Root	0.00	0.0200	0.00	0.0200 Note 49
Year 9	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	0.00	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	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	1.000	ORG	1.00	1.000	0.720	0.0	0.0 Pork	3	3							0.0 Root	0.00	0.0200	0.00	0.0200 Note 49
Year 10	N	34	0	0.0	0.0	0	100	10	0	0	0.0	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00 Note 47
	Vol/NH3	Pig	NO	0.0	0.0	0.0 NON	100.00	WBA	1.000	NO	0.0 Pig	0.66								0.0 Pig	0.00	0.0125	0.00	0.0100 Note 48
	N leach	Root	0.699	1.000	1.000	ORG	1.00	1.000	0.720	0.0	0.0 Pork	3	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 0.64 0.10 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.76 1.19 Note 50

Possible additional non IPCC N2O-N emissions Value 0.0000 0.00
N residues emissions, ratio of N2O-N to N: 0.00
Increased soil N emissions, kg N2O-N/ha: 1.00 0.64 0.10 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.76 Total anthropogenic 4.25
Natural background emissions, kg N2O-N/ha: 1.00 0.64 0.10 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.76 Total including natural 5.00
Total IPCC and non IPCC N2O 4.25 2.60 Note 51 2.60 Note 51 3.36 Note 51

N CHAIN STARTING WITH N FERTILIZER N CHAIN CONTINUING WITH LIQUID POULTRY MANURE TO PRODUCE TO PRODUCE WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR POULTRY MEAT 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 # 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 IPCC 2006 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										23.0	23.0
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										9.4	9.4
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										67.6	67.6
	TOTAL										TOTAL N AMOUNTS IN KG AND %										100.0	100.0

N2O-N/N in food/beverage/fuel/other 0.1477 0.0876 Note 46

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	0.0	19.6	1.41	2.89	1.23	1.71
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	Poultry	0.84						0.0	0.04	0.0125	0.04	0.0100
	N leach		1.022	1.000	ORG	1.00	1.000	0.591	0.0		57.8	Meat	4						0.0	1.45	0.0010	0.43	0.0050
Year 2	N	41	0	17.6	17.6	0	100	11	0	0	13.2	42	4.6	2.3	0.0	0.0	0.0	0.0	2.2	0.19	0.45	0.16	0.28
	Vol/NH3	Poultry	NO	0.0	4.4	NON	100.00	WWH	1.000	NO	8.6	Poultry	0.67						0.0	0.05	0.0125	0.05	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		8.6	Meat	4						0.2	0.22	0.0010	0.06	0.0050
Year 3	N	41	0	2.0	2.0	0	100	11	0	0	1.5	42	0.5	0.3	0.0	0.0	0.0	0.0	0.3	0.02	0.05	0.02	0.03
	Vol/NH3	Poultry	NO	0.0	0.5	NON	100.00	WWH	1.000	NO	1.0	Poultry	0.67						0.0	0.01	0.0125	0.01	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		1.0	Meat	4						0.0	0.02	0.0010	0.01	0.0050
Year 4	N	41	0	0.2	0.2	0	100	1	0	0	0.2	42	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01	0.00	0.00
	Vol/NH3	Poultry	NO	0.0	0.1	NON	100.00	SBA	1.000	NO	0.1	Poultry	0.65						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.1	Meat	4						0.0	0.00	0.0010	0.00	0.0050
Year 5	N	41	0	0.0	0.0	0	100	10	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Meat	4						0.0	0.00	0.0010	0.00	0.0050
Year 6	N	41	0	0.0	0.0	0	100	119	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0.0	Poultry	0.84						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Meat	4						0.0	0.00	0.0010	0.00	0.0050
Year 7	N	41	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Meat	4						0.0	0.00	0.0010	0.00	0.0050
Year 8	N	41	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Meat	4						0.0	0.00	0.0010	0.00	0.0050
Year 9	N	41	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Meat	4						0.0	0.00	0.0010	0.00	0.0050
Year 10	N	41	0	0.0	0.0	0	100	10	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Meat	4						0.0	0.00	0.0010	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 0.64 0.10 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.74 1.17 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 Total IPCC and non IPCC N2O 2.02 Note 51 Increased soil N emissions, kg N2O-N/ha: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.02 Note 51 Natural background emissions, kg N2O-N/ha: 1.00 0.64 0.10 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.74 Total including natural 4.15 2.76 Note 51

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

Year	Fertilizer/manure #	Store 1/0	Store	Field	Or-ganic 1/0	Nnorm propor 1/0	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	other #9	Manure handling N a-	Final N a-	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																						21.6		21.5						
	ACCORDING TO																						IPCC 1996		IPCC 2006		TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED		21.6		21.5
	FIRST YEAR																						0.0792		0.0434		TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		13.6		13.6
	TOTAL																						0.0883		0.0485		TOTAL N AMOUNTS IN KG AND % LEACHED		65.0		64.9
																	TOTAL N AMOUNTS IN KG AND %		100.2		100.0										

N2O-N/N in food/beverage/fuel/other 0.1639 0.0900 Note 46

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	42	40.0	20.4	0.0	0.0	0.0	43	19.6	1.62	3.17	1.20	1.20	1.74	Note 47
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	Poultry	0.84					0.0	Poultry	7.8	0.10	0.0125	0.10	0.0100	Note 48
	N leach		1.022	1.000	ORG	1.00	1.000		0.591	0.0	57.8	Meat	4					13.3	Deep	0.0	1.45	0.0200	0.43	0.0050	Note 49
Year 2	N	43	0	11.9	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	Note 47	
	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	Note 48
	N leach	Deep	0.600	1.013	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	Note 49
Year 3	N	43	0	0.6	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	Note 47	
	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	Note 48
	N leach	Deep	0.600	1.013	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	Note 49
Year 4	N	43	0	0.0	0.0	0	100	1	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	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	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year 5	N	43	0	0.0	0.0	0	100	10	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year 6	N	43	0	0.0	0.0	0	100	119	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0.0	Poultry	0.84					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year 7	N	43	0	0.0	0.0	0	100	11	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	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	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year 8	N	43	0	0.0	0.0	0	100	11	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	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	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year 9	N	43	0	0.0	0.0	0	100	1	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	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	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49
Year 10	N	43	0	0.0	0.0	0	100	10	0	0	0.0	42	0.0	0.0	0.0	0.0	0.0	43	0.0	0.00	0.00	0.00	0.00	Note 47	
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66					0.0	Poultry	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Deep	0.600	1.013	ORG	1.00	1.000		0.760	0.0	0.0	Meat	4					0.0	Deep	0.0	0.00	0.0200	0.00	0.0050	Note 49

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

Area with crop, ha 0.64 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.68 1.07 Note 50

Possible additional non IPCC N2O-N emissions	Value	Kind of source	Total IPCC and non IPCC N2O
N residues emissions, ratio of N2O-N to N:	0.0000	0.00 Current crops	3.53
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00 Total anthropogenic	3.53
Natural background emissions, kg N2O-N/ha:	1.00	0.68 Total including natural	4.22

Note 51 1.94 Note 51 1.94 Note 51 2.62 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
LIQUID POULTRY MANURE

TO PRODUCE
TO PRODUCE

WINTER WHEAT FOR BIOETHANOL AND
WINTER WHEAT FOR

POULTRY EGGS
POULTRY EGGS

Year

Fertilizer/manure
#

Store
1/0

Amounts
Store

Field
1/0

Or-
ganic
1/0

Nhorm
proportion,
%

Crop
#

Straw
used
1/0

Crop
leach

Use
#

Fodder:
Uses #21-61
Fed

N crop
#71/
Food

Fuel/
bev
#8

Fuel/
other
#9

Manure
handling
#

Final
N a-
mounts

N2O-N emission
IPCC 1996

N2O-N emission
Each

Total

N2O-N emission
Total

Note 43
Note 43

Note 44
Note 44

Note 44
Note 44

Note 44
Note 44

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										11.7	11.7
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										14.2	14.2
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED										74.1	74.1
	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	119	0	0	97.8	43	40.0	9.6	0.0	0.0	0.0	0.0	30.4	1.42	2.91	1.28	1.77
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	Poultry	0.84						3.0	0.05	0.0125	0.05	0.0100
	N leach		1.022	1.000	ORG	1.00	1.000	0.591	0.0		57.8	Eggs	4					0.0	1.45	0.0010	0.43	0.0050	
Year 2	N	41	0	27.3	0	100	11	0	0	0	20.5	43	7.1	1.7	0.0	0.0	0.0	0.0	5.4	0.30	0.70	0.26	0.44
	Vol/NH3	Poultry	NO	0.0	6.8	NON	100.00	WWH	1.000	NO	13.4	Poultry	0.67						0.5	0.07	0.0125	0.07	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		13.4	Eggs	4					0.0	0.33	0.0010	0.10	0.0050	
Year 3	N	41	0	4.9	0	100	11	0	0	0	3.6	43	1.3	0.3	0.0	0.0	0.0	0.0	1.0	0.05	0.13	0.05	0.08
	Vol/NH3	Poultry	NO	0.0	1.2	NON	100.00	WWH	1.000	NO	2.4	Poultry	0.67						0.1	0.01	0.0125	0.01	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		2.4	Eggs	4					0.0	0.06	0.0010	0.02	0.0050	
Year 4	N	41	0	0.9	0	100	1	0	0	0	0.6	43	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.01	0.02	0.01	0.01
	Vol/NH3	Poultry	NO	0.0	0.2	NON	100.00	SBA	1.000	NO	0.4	Poultry	0.65						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.4	Eggs	4					0.0	0.01	0.0010	0.00	0.0050	
Year 5	N	41	0	0.2	0	100	10	0	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	Poultry	0.66						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.1	Eggs	4					0.0	0.00	0.0010	0.00	0.0050	
Year 6	N	41	0	0.0	0	100	119	0	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0.0	Poultry	0.84						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Eggs	4					0.0	0.00	0.0010	0.00	0.0050	
Year 7	N	41	0	0.0	0	100	11	0	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Eggs	4					0.0	0.00	0.0010	0.00	0.0050	
Year 8	N	41	0	0.0	0	100	11	0	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Poultry	0.67						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Eggs	4					0.0	0.00	0.0010	0.00	0.0050	
Year 9	N	41	0	0.0	0	100	1	0	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Poultry	0.65						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Eggs	4					0.0	0.00	0.0010	0.00	0.0050	
Year 10	N	41	0	0.0	0	100	10	0	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
	Vol/NH3	Poultry	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Poultry	0.66						0.0	0.00	0.0125	0.00	0.0100
	N leach	Liquid	0.867	1.000	ORG	1.00	1.000	0.653	0.0		0.0	Eggs	4					0.0	0.00	0.0010	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
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Area with crop, ha

0.64	0.15	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.28
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Note 50

Possible additional non IPCC N2O-N emissions

Value	Kind of source	Total IPCC and non IPCC N2O
0.0000	Current crops	3.77
0.00	Total anthropogenic	3.77
1.00	Total including natural	4.59

N residues emissions, ratio of N2O-N to N: 2.30 Note 51

Increased soil N emissions, kg N2O-N/ha: 2.30 Note 51

Natural background emissions, kg N2O-N/ha: 3.12 Note 51

N CHAIN STARTING WITH N FERTILIZER TO PRODUCE TO PRODUCE WINTER WHEAT FOR BIOETHANOL AND FUEL/ other #9 GOAT MILK/MEAT Note 43

AND CONTINUING WITH GOAT DEEP LITTER TO PRODUCE WINTER WHEAT FOR GOAT MILK/MEAT Note 43

Year Fertilizer/manure # Store Amounts Field 1/0 Or-ganic 1/0 Nnorm propor tion, % Name # Crop Straw used 1/0 Cereal benefit 1/0 N crop Food/ bev #71/ #72 #8 Fuel/ other #9 Manure Final handling N a- # Name mounts Each Total N2O-N emission IPCC 1996 N2O-N emission IPCC 2006 Note 44

Note 44 Note 44 Note 44

Total N	RATIO OF N2O-N TO N IN FIRST CROP										TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED										4.6	4.3
Year N NH3	IPCC 1996										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3										19.3	18.2
1-10 N leach	0.0881										0.0452										82.1	77.5
TOTAL	0.1205										0.0627										105.9	100.0

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

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8	61	40.0	3.8	0.0	0.0	0.0	0.0	0.0	36.2	2.00	3.52	1.30	1.81
	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	Goat	0.84					0.0	Goat	5.4	0.08	0.0125	0.08	
	N leach		1.022	1.000	ORG	1.00	1.000		0.591	0.0	57.8	Milk/mea	6					13.3	Deep	0.0	1.45	0.0200	0.43	
Year 2	N	63	0	35.7	35.7	0	100	11	0	0	26.8	61	6.4	0.6	0.0	0.0	0.0	0.0	63	5.8	1.09	0.34	0.59	
	Vol/NH3	Goat	NO	0.0	8.9	NON	100.00	WWH	1.000	NO	20.4	Goat	0.67					0.0	Goat	0.9	0.10	0.0125	0.10	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	20.4	Milk/mea	6					3.6	Deep	0.0	0.51	0.0200	0.15	
Year 3	N	63	0	5.7	5.7	0	100	11	0	0	4.3	61	1.0	0.1	0.0	0.0	0.0	0.0	63	0.9	0.08	0.17	0.05	
	Vol/NH3	Goat	NO	0.0	1.4	NON	100.00	WWH	1.000	NO	3.3	Goat	0.67					0.0	Goat	0.1	0.02	0.0125	0.02	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	3.3	Milk/mea	6					0.6	Deep	0.0	0.08	0.0200	0.02	
Year 4	N	63	0	0.9	0.9	0	100	1	0	0	0.7	61	0.2	0.0	0.0	0.0	0.0	0.0	63	0.2	0.01	0.03	0.01	
	Vol/NH3	Goat	NO	0.0	0.2	NON	100.00	SBA	1.000	NO	0.5	Goat	0.65					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.5	Milk/mea	6					0.1	Deep	0.0	0.01	0.0200	0.00	
Year 5	N	63	0	0.1	0.1	0	100	10	0	0	0.1	61	0.0	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	
	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	Goat	0.66					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.1	Milk/mea	6					0.0	Deep	0.0	0.00	0.0200	0.00	
Year 6	N	63	0	0.0	0.0	0	100	119	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	
	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0.0	Goat	0.84					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.0	Milk/mea	6					0.0	Deep	0.0	0.00	0.0200	0.00	
Year 7	N	63	0	0.0	0.0	0	100	11	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	
	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Goat	0.67					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.0	Milk/mea	6					0.0	Deep	0.0	0.00	0.0200	0.00	
Year 8	N	63	0	0.0	0.0	0	100	11	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	
	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Goat	0.67					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.0	Milk/mea	6					0.0	Deep	0.0	0.00	0.0200	0.00	
Year 9	N	63	0	0.0	0.0	0	100	1	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	
	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Goat	0.65					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.0	Milk/mea	6					0.0	Deep	0.0	0.00	0.0200	0.00	
Year 10	N	63	0	0.0	0.0	0	100	10	0	0	0.0	61	0.0	0.0	0.0	0.0	0.0	0.0	63	0.0	0.00	0.00	0.00	
	Vol/NH3	Goat	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Goat	0.66					0.0	Goat	0.0	0.00	0.0125	0.00	
	N leach	Deep	0.600	1.162	ORG	1.00	1.000		0.760	0.0	0.0	Milk/mea	6					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 0.64 0.13 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.25 Note 50

Possible additional non IPCC N2O-N emissions Value Kind of source Total IPCC and non IPCC N2O Note 51

N residues emissions, ratio of N2O-N to N: 0.0000 0.00 Current crops 4.82 2.51 Note 51

Increased soil N emissions, kg N2O-N/ha: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Total anthropogenic 4.82 2.51 Note 51

Natural background emissions, kg N2O-N/ha: 1.00 0.64 0.13 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.80 Total including natural 5.62 3.31 Note 51

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

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

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
	TOTAL N AMOUNTS IN KG AND %											
	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											
	TOTAL N AMOUNTS IN KG AND % LEACHED											
	TOTAL N AMOUNTS IN KG AND %											
	TOTAL N AMOUNTS IN KG AND %											
	TOTAL N AMOUNTS IN KG AND %											
	TOTAL N AMOUNTS IN KG AND %											
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	TOTAL N AMOUNTS IN KG AND %											

N2O-N/N in food/beverage/fuel/other 2.1950 1.2482 Note 46

Year N	1	0	100.0	100.0	0	100	119	0	0	97.8	72	0.0	0.0	40.0	0.0	0.0	72	40.0	1.39	2.86	1.14	1.60	Note 47
1	Vol/NH3	N	NO	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	N crop	0.84	0.0	Green	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	low N	72	13.3	Low	0.0	0.0	0.0	1.45	0.0000	0.43	0.0000	Note 49
Year 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
2	Vol/NH3	Green	NO	0.0	10.0	NON	100.00	WWH	1.000	NO	23.6	Cattle	0.67	0.0	0.0	0.0	0.0	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	4.1	Liquid	0.0	0.0	0.0	0.59	0.0010	0.18	0.0050	Note 49
Year N	21	0	4.6	4.6	0	100	11	0	0	3.4	21	1.3	0.3	0.0	0.0	0.0	21	1.0	0.05	0.12	0.04	0.07	Note 47
3	Vol/NH3	Cattle	NO	0.0	1.1	NON	100.00	WWH	1.000	NO	2.1	Cattle	0.67	0.0	0.0	0.0	0.0	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	0.5	Liquid	0.0	0.0	0.0	0.05	0.0010	0.02	0.0050	Note 49
Year N	21	0	0.9	0.9	0	100	1	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
4	Vol/NH3	Cattle	NO	0.0	0.2	NON	100.00	SBA	1.000	NO	0.4	Cattle	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		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.4	Dairy	2	0.1	Liquid	0.0	0.0	0.0	0.01	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.2	0.2	0	100	10	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
5	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.1	Cattle	0.66	0.0	0.0	0.0	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	0.1	Dairy	2	0.0	Liquid	0.0	0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.0	0.0	0	100	119	0	0	0.0	72	0.0	0.0	0.0	0.0	0.0	72	0.0	0.00	0.00	0.00	0.00	Note 47
6	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWHB	1.000	NO	0.0	N crop	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		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.0	low N	72	0.0	Low	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000	Note 49
Year 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
7	Vol/NH3	Green	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	0.67	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100	Note 48
	N leach	Low		0.533	1.000	ORG	1.00	1.000	0.787	0.0	0.0	Dairy	2	0.0	Liquid	0.0	0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year 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
8	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WWH	1.000	NO	0.0	Cattle	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		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2	0.0	Liquid	0.0	0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year 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
9	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	SBA	1.000	NO	0.0	Cattle	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		0.933	1.016	ORG	1.00	1.000	0.627	0.0	0.0	Dairy	2	0.0	Liquid	0.0	0.0	0.0	0.00	0.0010	0.00	0.0050	Note 49
Year N	21	0	0.0	0.0	0	100	10	0	0	0.0	21	0.0	0.0	0.0	0.0	0.0	21	0.0	0.00	0.00	0.00	0.00	Note 47
10	Vol/NH3	Cattle	NO	0.0	0.0	NON	100.00	WBA	1.000	NO	0.0	Cattle	0.66	0.0	0.0	0.0	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	0.0	Dairy	2	0.0	Liquid	0.0	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 0.64 0.13 0.03 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.80 1.26 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 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 2.35 Note 51 Natural background emissions, kg N2O-N/ha: 1.00 0.64 0.13 0.03 0.01 0.00 0.00 0.00 0.00 0.00 0.80 Total including natural 4.93 3.15 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
NO MANURE

WINTER WHEAT FOR BIOETHANOL AND
NOTHING FOR

FOOD
FOOD

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:
Uses #21-61
Fed

Use
#

N crop
#71/
#72

Fuel/
bev
#8

Fuel/
other
#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 %																												
TOTAL N AMOUNTS IN KG AND %																												

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

0.0714

0.0714

0.0400

Note 45
Note 45
Note 45

Year 1	N	1	0	100.0	100.0	0	100	119	0	0	97.8 Food/	8	0.0	0.0	0.0	40.0	0.0	1.39	2.86	1.14	1.60
	Vol/NH3	N	NO	2.2	NON	100.00	WWHB	1.000	NO	57.8 Food/	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0125	0.02	0.0100
	N leach		1.022	1.000	1.000	ORG	1.00	1.000	0.591	0.0	57.8 beverage	8	0.0	0.0	0.0	0.0	0.0	1.45	0.0000	0.43	0.0000
Year 2	N	0	0	0.0	0.0	0	100	11	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 3	N	0	0	0.0	0.0	0	100	11	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 4	N	0	0	0.0	0.0	0	100	1	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.65	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 5	N	0	0	0.0	0.0	0	100	10	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.66	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 6	N	0	0	0.0	0.0	0	100	119	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 7	N	0	0	0.0	0.0	0	100	11	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 8	N	0	0	0.0	0.0	0	100	11	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 9	N	0	0	0.0	0.0	0	100	1	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.65	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	0.0	0.0	0.0	0.0	0.00	0.0000	0.00	0.0000
Year 10	N	0	0	0.0	0.0	0	100	10	0	0	0.0 Food/	8	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
	Vol/NH3	None	NO	0.0	NON	100.00	NO	1.000	NO	0.0 Food/	0.66	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0125	0.00	0.0100
	N leach		1.000	1.000	1.000	ORG	1.00	1.000	0.600	0.0	0.0 beverage	8	0.0	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

0.64

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.64

1.00

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

2.86

2.86

3.49

Note 51

1.60

1.60

2.24

Note 51

Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
NO MANURE

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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	Total	N2O-N emission IPCC 2006 Each	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											
Year N NH3	ACCORDING TO										TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3											
1-10 N leach	FIRST YEAR										TOTAL N AMOUNTS IN KG AND % LEACHED											
	TOTAL										TOTAL N AMOUNTS IN KG AND %											
											40.0	40.0							1.39	2.86	1.14	1.60
											0.0400	2.2							0.02		0.02	Note 45
											0.0400	57.8							1.45		0.43	Note 45
											100.0	100.0										Note 45

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

Year N	1	0	100.0	100.0	0	100	119	0	0	97.8	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	1.39	2.86	1.14	1.60
1	Vol/NH3 N	NO	0.0	2.2 NON	100.00	WWHB	1.000	NO	57.8 Waste	0.84	0	0.0	0.0	0.0	0.0	0.0	None	0.0	0.02	0.0125	0.02	Note 47
	N leach	1.022	1.000	ORG	1.00	1.000	0.591	0.0	57.8 moved	0	0	0.0	0.0	0.0	0.0	13.3	0.0	0.0	1.45	0.0000	0.43	Note 48
Year N	0	0	0.0	0.0	0	100	11	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
2	Vol/NH3 None	NO	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	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 49
Year N	0	0	0.0	0.0	0	100	11	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
3	Vol/NH3 None	NO	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	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 47
Year N	0	0	0.0	0.0	0	100	1	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 47
4	Vol/NH3 None	NO	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	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 49
Year N	0	0	0.0	0.0	0	100	10	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
5	Vol/NH3 None	NO	0.0	0.0 NON	100.00	NO	1.000	NO	0.0 Waste	0.66	0	0.0	0.0	0.0	0.0	0.0	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 47
Year N	0	0	0.0	0.0	0	100	119	0	0	0.0	-1	0.0	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 NON	100.00	NO	1.000	NO	0.0 Waste	0.84	0	0.0	0.0	0.0	0.0	0.0	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 47
Year N	0	0	0.0	0.0	0	100	11	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
7	Vol/NH3 None	NO	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	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 49
Year N	0	0	0.0	0.0	0	100	11	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
8	Vol/NH3 None	NO	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	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 49
Year N	0	0	0.0	0.0	0	100	1	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
9	Vol/NH3 None	NO	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	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	Note 49
Year N	0	0	0.0	0.0	0	100	10	0	0	0.0	-1	0.0	0.0	0.0	0.0	0.0	0	0.0	0.00	0.00	0.00	Note 47
10	Vol/NH3 None	NO	0.0	0.0 NON	100.00	NO	1.000	NO	0.0 Waste	0.66	0	0.0	0.0	0.0	0.0	0.0	None	0.0	0.00	0.0125	0.00	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	0.0	0.0	0.0	0	0.0	0.00	0.0000	0.00	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 Current crops	2.86	1.60 Note 51
Increased soil N emissions, kg N2O-N/ha:	0.00	0.00 Total anthropogenic	2.86	1.60 Note 51
Natural background emissions, kg N2O-N/ha:	1.00	0.64 Total including natural	3.49	2.24 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
NO MANURE

TO PRODUCE
TO PRODUCE

WINTER WHEAT FOR BIOETHANOL AND
NOTHING FOR

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

Note 43
Note 43

Year

Fertilizer/manure
#

Store
1/0

Amounts
Store
Field

Or-
ganic
1/0

Nnorm
proportion,
% Name

Crop
#

Straw
used
1/0

Crop
leach

Use
#

Fodder:
Uses #21-61
Fed

N crop
#71/
#72

Food
#8

Fuel/
bev
#9

Manure
handling
Name

Final
N a-
mounts

N2O-N emission
IPCC 1996
Total

N2O-N emission
Total

Note 44
Note 44
Note 44

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

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

No use

No use

Note 46

Year	N	1	0	100.0	100.0	0	100	119	0	0	97.8	0	0.0	0.0	0.0	0.0	0	40.0	1.39	3.86	1.14	1.90	Note 47
1	Vol/NH3	N	NO	0.0	0.0	2.2	NON	100.00	WWHB	1.000	NO	57.8	Waste	0.84	0.0	0.0	0.0	None	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	in field	0				40.0	2.45	0.0000	0.73	0.0000	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	0.0	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	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	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	0.0	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	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	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	0.0	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	0.65	0.0	0.0	0.0	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0.0	0	100	10	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	0.66	0.0	0.0	0.0	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0.0	0	100	119	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	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	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	0.0	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	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	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	0.0	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	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	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	0.0	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	0.65	0.0	0.0	0.0	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	Note 49
Year	N	0	0	0.0	0.0	0.0	0	100	10	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	0.66	0.0	0.0	0.0	None	0.00	0.0125	0.00	0.0100	Note 48
	N leach			1.000	1.000		ORG	1.00	1.000	0.600	0.0	0.0	in field	0				0.0	0.00	0.0000	0.00	0.0000	Note 49

Year

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

Year 7

Year 8

Year 9

Year 10

Total

Total/year 1

Area with crop, ha

0.64

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.64

1.00

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

3.86

3.86

4.49

Note 51

1.90

1.90

2.54

Note 51

Note 51

Note 51

Note 51

SUMMARY CATTLE DAIRY

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID CATTLE MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE DAIRY CATTLE DAIRY

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	13.98	13.90	1.77	3.74	1.60	2.28
Year N NH3	ACCORDING TO	IPCC 1996	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	0.0726	0.0438	TOTAL N AMOUNTS IN KG AND % LEACHED	73.29	72.91	1.83		0.55	Note 45
TOTAL		0.0934	0.0569	TOTAL N AMOUNTS IN KG AND %	100.52	100.00				Note 45

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

Area with crop, ha				Total/year 1	0.83	1.30	0.2674	0.1630	Note 46
Natural background emissions, kg N2O-N/ha:					0.83		4.57	3.11	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED CATTLE MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE DAIRY CATTLE DAIRY

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	13.87	13.79	2.10	4.08	1.61	2.29
Year N NH3	ACCORDING TO	IPCC 1996	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	0.0788	0.0437	TOTAL N AMOUNTS IN KG AND % LEACHED	74.30	73.91	1.86		0.56	Note 45
TOTAL		0.1019	0.0572	TOTAL N AMOUNTS IN KG AND %	100.53	100.00				Note 45

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

Area with crop, ha				Total/year 1	0.82	1.29	0.2940	0.1649	Note 46
Natural background emissions, kg N2O-N/ha:					0.82		4.90	3.11	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER CATTLE DEEP LITTER

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE DAIRY CATTLE DAIRY

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	13.34	12.71	2.40	4.49	1.62	2.34
Year N NH3	ACCORDING TO	IPCC 1996	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	0.0851	0.0437	TOTAL N AMOUNTS IN KG AND % LEACHED	78.40	74.69	1.96		0.59	Note 45
TOTAL		0.1122	0.0584	TOTAL N AMOUNTS IN KG AND %	104.96	100.00				Note 45

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

Area with crop, ha				Total/year 1	0.77	1.21	0.3366	0.1753	Note 46
Natural background emissions, kg N2O-N/ha:					0.77		5.26	3.11	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM GRAZING CATTLE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE DAIRY CATTLE DAIRY

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	13.19	13.19	2.47	4.58	2.15	2.82
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	4.49	4.49	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.0855	0.0541	TOTAL N AMOUNTS IN KG AND % LEACHED	82.32	82.32	2.06		0.62	Note 45
TOTAL		0.1144	0.0704	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	0.74	1.16	0.3470	0.2135	Note 46
Natural background emissions, kg N2O-N/ha:					0.74		5.31	3.55	Note 51

SUMMARY CATTLE BEEF

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID CATTLE MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE BEEF CATTLE BEEF

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		12.44	12.37
1-10 N leach	FIRST YEAR	0.0727	0.0440	TOTAL N AMOUNTS IN KG AND % LEACHED	13.91	13.83
TOTAL		0.0947	0.0579	TOTAL N AMOUNTS IN KG AND %	74.20	73.80
					100.55	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	1.32		0.162	2.32
		0.84			0.14	Note 45

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED CATTLE MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE BEEF CATTLE BEEF

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		12.33	12.27
1-10 N leach	FIRST YEAR	0.0791	0.0439	TOTAL N AMOUNTS IN KG AND % LEACHED	12.96	12.89
TOTAL		0.1037	0.0582	TOTAL N AMOUNTS IN KG AND %	75.27	74.85
					100.56	100.00

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

Area with crop, ha	Total/year 1					
Natural background emissions, kg N2O-N/ha:		0.83	1.31		0.163	2.33
		0.77			0.13	Note 45

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER CATTLE DEEP LITTER

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE BEEF CATTLE BEEF

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		11.84	11.25
1-10 N leach	FIRST YEAR	0.0857	0.0439	TOTAL N AMOUNTS IN KG AND % LEACHED	13.84	13.16
TOTAL		0.1145	0.0595	TOTAL N AMOUNTS IN KG AND %	79.56	75.60
					105.24	100.00

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

Area with crop, ha	Total/year 1					
Natural background emissions, kg N2O-N/ha:		0.78	1.23		0.164	2.38
		0.78			0.14	Note 45

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM GRAZING CATTLE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

CATTLE BEEF CATTLE BEEF

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		11.70	11.70
1-10 N leach	FIRST YEAR	0.0862	0.0548	TOTAL N AMOUNTS IN KG AND % LEACHED	4.62	4.62
TOTAL		0.1168	0.0721	TOTAL N AMOUNTS IN KG AND %	83.68	83.68
					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:		0.74	1.16		0.221	2.88
		0.74			0.05	Note 45

SUMMARY PIG PORK

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID PIG MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	0.0727	0.0873	TOTAL N AMOUNTS IN KG AND %	19.67	19.67	1.66	3.49	1.47	2.10
Year N NH3	ACCORDING TO	IPCC 1996	0.0433	0.0525	TOTAL N AMOUNTS IN KG AND %	11.92	11.92	0.12	0.12	0.12	Note 45
1-10 N leach	FIRST YEAR	0.0727	0.0433	0.0525	TOTAL N AMOUNTS IN KG AND %	68.40	68.40	1.71	0.51	0.51	Note 45
TOTAL	TOTAL	0.0873	0.0433	0.0525	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	0.78	1.23	0.1775	0.1068	Note 46
Natural background emissions, kg N2O-N/ha:						0.78		4.28	2.88	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED PIG MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	0.0775	0.0926	TOTAL N AMOUNTS IN KG AND %	19.15	19.05	1.86	3.70	1.45	2.09
Year N NH3	ACCORDING TO	IPCC 1996	0.0434	0.0523	TOTAL N AMOUNTS IN KG AND %	12.60	12.53	0.13	0.13	0.13	Note 45
1-10 N leach	FIRST YEAR	0.0775	0.0434	0.0523	TOTAL N AMOUNTS IN KG AND %	68.77	68.41	1.72	0.52	0.52	Note 45
TOTAL	TOTAL	0.0926	0.0434	0.0523	TOTAL N AMOUNTS IN KG AND %	100.52	100.00				Note 45

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

Area with crop, ha					Total/year 1	0.76	1.19	0.1933	0.1092	Note 46
Natural background emissions, kg N2O-N/ha:						0.76		4.46	2.85	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER PIG DEEP LITTER

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	0.0816	0.0974	TOTAL N AMOUNTS IN KG AND %	19.17	18.70	2.03	3.90	1.44	2.10
Year N NH3	ACCORDING TO	IPCC 1996	0.0436	0.0526	TOTAL N AMOUNTS IN KG AND %	14.51	14.15	0.15	0.15	0.15	Note 45
1-10 N leach	FIRST YEAR	0.0816	0.0436	0.0526	TOTAL N AMOUNTS IN KG AND %	68.86	67.15	1.72	0.52	0.52	Note 45
TOTAL	TOTAL	0.0974	0.0436	0.0526	TOTAL N AMOUNTS IN KG AND %	102.54	100.00				Note 45

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

Area with crop, ha					Total/year 1	0.76	1.19	0.2032	0.1097	Note 46
Natural background emissions, kg N2O-N/ha:						0.76		4.65	2.86	Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM ROOTING PIGS

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

PIG PORK PIG PORK

Total N	RATIO OF N2O-N TO N IN FIRST CROP	IPCC 1996	0.0830	0.1061	TOTAL N AMOUNTS IN KG AND %	19.70	19.70	2.30	4.25	1.99	2.60
Year N NH3	ACCORDING TO	IPCC 1996	0.0516	0.0651	TOTAL N AMOUNTS IN KG AND %	4.12	4.12	0.04	0.04	0.04	Note 45
1-10 N leach	FIRST YEAR	0.0830	0.0516	0.0651	TOTAL N AMOUNTS IN KG AND %	76.18	76.18	1.90	0.57	0.57	Note 45
TOTAL	TOTAL	0.1061	0.0516	0.0651	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	0.76	1.19	0.2155	0.1322	Note 46
Natural background emissions, kg N2O-N/ha:						0.76		5.00	3.36	Note 51

SUMMARY POULTRY MEAT

N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER LIQUID POULTRY MANURE		TO PRODUCE TO PRODUCE		WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR		POULTRY MEAT POULTRY MEAT		Note 43 Note 43	
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	1.62	3.40	1.42	2.02 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	Note 45
1-10 N leach	FIRST YEAR	0.0723	0.0427	TOTAL N AMOUNTS IN KG AND % LEACHED		67.56	67.56	1.69		0.51	Note 45
TOTAL	TOTAL	0.0851	0.0505	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		0.74	1.17		0.1477	0.0876	Note 46
Natural background emissions, kg N2O-N/ha:						0.74			4.15	2.76	Note 50 Note 51
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER SEPARATED POULTRY MANURE		TO PRODUCE TO PRODUCE		WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR		POULTRY MEAT POULTRY MEAT		Note 43 Note 43	
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	1.73	3.49	1.37	1.98 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	Note 45
1-10 N leach	FIRST YEAR	0.0765	0.0431	TOTAL N AMOUNTS IN KG AND % LEACHED		65.76	65.76	1.64		0.49	Note 45
TOTAL	TOTAL	0.0873	0.0495	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		0.72	1.14		0.1549	0.0877	Note 46
Natural background emissions, kg N2O-N/ha:						0.72			4.22	2.70	Note 50 Note 51
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER POULTRY DEEP LITTER		TO PRODUCE TO PRODUCE		WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR		POULTRY MEAT POULTRY MEAT		Note 43 Note 43	
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	1.77	3.53	1.32	1.94 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	Note 45
1-10 N leach	FIRST YEAR	0.0792	0.0434	TOTAL N AMOUNTS IN KG AND % LEACHED		64.97	64.87	1.62		0.49	Note 45
TOTAL	TOTAL	0.0883	0.0485	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		0.68	1.07		0.1639	0.0900	Note 46
Natural background emissions, kg N2O-N/ha:						0.68			4.22	2.62	Note 50 Note 51
N CHAIN STARTING WITH AND CONTINUING WITH		N FERTILIZER MANURE FROM SCRAPING POULTRY		TO PRODUCE TO PRODUCE		WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR		POULTRY MEAT POULTRY MEAT		Note 43 Note 43	
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	2.10	3.99	1.81	2.40 Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3		3.70	3.70	0.04		0.04	Note 45
1-10 N leach	FIRST YEAR	0.0812	0.0498	TOTAL N AMOUNTS IN KG AND % LEACHED		73.92	73.92	1.85		0.55	Note 45
TOTAL	TOTAL	0.0997	0.0600	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				0.70	1.10		0.1782	0.1073	Note 46
Natural background emissions, kg N2O-N/ha:						0.70			4.69	3.10	Note 50 Note 51

SUMMARY POULTRY EGGS

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER LIQUID POULTRY MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS POULTRY EGGS

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	11.72	11.72	1.78	3.77	1.60	2.30	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	14.20	14.20	0.14		0.14		Note 45
1-10 N leach	FIRST YEAR	0.0728	0.0442	TOTAL N AMOUNTS IN KG AND % LEACHED	74.08	74.08	1.85		0.56		Note 45
	TOTAL	0.0942	0.0575	TOTAL N AMOUNTS IN KG AND %	100.00	100.00					Note 45

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

Area with crop, ha	0.82	1.28	Note 50
Natural background emissions, kg N2O-N/ha:	0.82	4.59	3.12 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER SEPARATED POULTRY MANURE

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS POULTRY EGGS

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	11.31	11.31	1.95	3.90	1.51	2.22	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	17.79	17.79	0.18		0.18		Note 45
1-10 N leach	FIRST YEAR	0.0793	0.0447	TOTAL N AMOUNTS IN KG AND % LEACHED	70.90	70.90	1.77		0.53		Note 45
	TOTAL	0.0976	0.0556	TOTAL N AMOUNTS IN KG AND %	100.00	100.00					Note 45

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

Area with crop, ha	0.78	1.23	Note 50
Natural background emissions, kg N2O-N/ha:	0.78	4.69	3.00 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER POULTRY DEEP LITTER

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS POULTRY EGGS

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	10.51	10.49	2.00	3.94	1.42	2.14	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	20.47	20.42	0.20		0.20		Note 45
1-10 N leach	FIRST YEAR	0.0835	0.0453	TOTAL N AMOUNTS IN KG AND % LEACHED	69.27	69.09	1.73		0.52		Note 45
	TOTAL	0.0984	0.0536	TOTAL N AMOUNTS IN KG AND %	100.26	100.00					Note 45

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

Area with crop, ha	0.71	1.12	Note 50
Natural background emissions, kg N2O-N/ha:	0.71	4.65	2.86 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER MANURE FROM SCRAPING POULTRY

WINTER WHEAT FOR BIOETHANOL AND WINTER WHEAT FOR

POULTRY EGGS POULTRY EGGS

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	11.17	11.17	2.56	4.71	2.23	2.91	Note 45
Year N NH3	ACCORDING TO	IPCC 1996	IPCC 2006	TOTAL N AMOUNTS IN KG AND % VOLATILISATION/NH3	4.66	4.66	0.05		0.05		Note 45
1-10 N leach	FIRST YEAR	0.0866	0.0552	TOTAL N AMOUNTS IN KG AND % LEACHED	84.17	84.17	2.10		0.63		Note 45
	TOTAL	0.1177	0.0727	TOTAL N AMOUNTS IN KG AND %	100.00	100.00					Note 45

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

Area with crop, ha	0.74	1.17	Note 50	
Natural background emissions, kg N2O-N/ha:	0.74	5.45	3.65	Note 51

SUMMARY SHEEP AND GOATS

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
SHEEP DEEP LITTER

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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

Year N NH3

1-10 N leach

IPCC 1996

IPCC 2006

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 %

2.59 Note 45

1.83

5.07

2.73

6.73

7.13

8.66

8.18

0.09

2.25

105.93

100.00

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

0.80

1.25

0.80

0.80

0.7105

0.3630 Note 46

Note 50

3.38 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
MANURE FROM GRAZING SHEEP

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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

Year N NH3

1-10 N leach

IPCC 1996

IPCC 2006

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 %

2.30 Note 45

1.59

4.99

2.74

6.72

6.72

5.04

5.04

0.05

2.21

100.00

100.00

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

0.76

1.19

0.76

0.76

0.7433

0.3421 Note 46

Note 50

3.06 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
GOAT DEEP LITTER

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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

Year N NH3

1-10 N leach

IPCC 1996

IPCC 2006

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 %

2.51 Note 45

1.70

4.82

2.57

4.32

4.58

19.30

18.22

0.19

2.05

105.93

100.00

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

0.80

1.25

0.80

0.80

1.0532

0.5485 Note 46

Note 50

3.31 Note 51

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
MANURE FROM GRAZING GOATS

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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

Year N NH3

1-10 N leach

IPCC 1996

IPCC 2006

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 %

2.77 Note 45

2.05

5.13

2.82

4.59

4.59

5.22

5.22

0.05

2.25

100.00

100.00

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

0.77

1.21

0.77

0.77

1.1186

0.6050 Note 46

Note 50

3.54 Note 51

SUMMARY N CROP

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
GREEN MANURE HIGH N

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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

0.0714

0.0400

0.163

2.40

First year

0.1030

0.0599

0.16

0.61

Total

0.0714

0.0400

0.163

2.40

TOTAL N AMOUNTS IN KG AND %

81.31

81.18

0.61

2.40

TOTAL N AMOUNTS IN KG AND %

100.16

100.00

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

0.93

1.46

0.93

1.2524

0.7290

Note 50
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

28.00

Note 47
Note 47

Relative value of green manure, %

N CHAIN STARTING WITH
AND CONTINUING WITH

N FERTILIZER
GREEN MANURE LOW N

TO PRODUCE
TO PRODUCE

WINTER WHEAT 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

0.0714

0.0400

1.57

2.35

First year

0.1031

0.0586

0.14

0.63

Total

0.0714

0.0400

1.57

2.35

TOTAL N AMOUNTS IN KG AND %

14.12

14.11

0.14

2.35

TOTAL N AMOUNTS IN KG AND %

100.09

100.00

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

0.80

1.26

0.80

2.1950

1.2482

Note 50
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

16.00

Note 47
Note 47

Relative value of green manure, %

SUMMARY FOOD, FUEL, AND WASTE

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER WHEAT FOR BIOETHANOL AND NOTHING FOR

FOOD FOOD

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	40.00	1.39	2.86	1.14	1.60
Year N NH3	ACCORDING TO	IPCC 2006	2.20	0.02		0.02	Note 45
1-10 N leach	FIRST YEAR	0.0714	0.0400	57.80	57.80	0.43	Note 45
	TOTAL	0.0714	0.0400	100.00	100.00		Note 45

N2O-N/N in food/beverage/fuel/other			0.0714			0.0400	Note 46
Area with crop, ha		Total/year 1	0.64	1.00			
Natural background emissions, kg N2O-N/ha:			0.64		3.49		Note 50 2.24 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER WHEAT FOR BIOETHANOL AND NOTHING FOR

FUEL FUEL

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	40.00	1.39	2.86	1.14	1.60
Year N NH3	ACCORDING TO	IPCC 2006	2.20	0.02		0.02	Note 45
1-10 N leach	FIRST YEAR	0.0714	0.0400	57.80	57.80	0.43	Note 45
	TOTAL	0.0714	0.0400	100.00	100.00		Note 45

N2O-N/N in food/beverage/fuel/other			0.0714			0.0400	Note 46
Area with crop, ha		Total/year 1	0.64	1.00			
Natural background emissions, kg N2O-N/ha:			0.64		3.49		Note 50 2.24 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER WHEAT 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	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	40.00	1.39	2.86	1.14	1.60
Year N NH3	ACCORDING TO	IPCC 2006	2.20	0.02		0.02	Note 45
1-10 N leach	FIRST YEAR	0.0714	0.0400	57.80	57.80	0.43	Note 45
	TOTAL	0.0714	0.0400	100.00	100.00		Note 45

N2O-N/N in food/beverage/fuel/other				No use		No use	Note 46
Area with crop, ha		Total/year 1	0.64	1.00			
Natural background emissions, kg N2O-N/ha:			0.64		3.49		Note 50 2.24 Note 51

N CHAIN STARTING WITH AND CONTINUING WITH

N FERTILIZER NO MANURE

WINTER WHEAT 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	TOTAL N AMOUNTS IN KG AND % ENDING AS FOOD/FUEL/OTHER/REMOVED	0.00	0.00	3.86	1.14	1.90
Year N NH3	ACCORDING TO	IPCC 2006	2.20	0.02		0.02	Note 45
1-10 N leach	FIRST YEAR	0.0964	0.0475	97.80	97.80	0.73	Note 45
	TOTAL	0.0964	0.0475	100.00	100.00		Note 45

N2O-N/N in food/beverage/fuel/other				No use		No use	Note 46
Area with crop, ha		Total/year 1	0.64	1.00			
Natural background emissions, kg N2O-N/ha:			0.64		4.49		Note 50 2.54 Note 51

