



WP4 calculations

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Model

- NBBM model v28.
- No crop response functions, used national average yield for last 5 years.
- Calculation mode – N efficiency factors.

Input data

Cultivated crops

Manure application

Nutrients from mineral fertilisers (kg/ha)

Field ID	Crop	Area (ha)	Putative yield (kg FM/ha)	Actual yield (kg FM/ha)	Select manure type	Amount of manure per ha (t)	N	P
1	Winter wheat (from survey)	97,0	65 00	79 50	Slaughter pig, slurry	30,0	21,0	33,6
2	Winter wheat (from survey)	20,5	65 00	71 30	Slaughter pig, slurry	30,0	27,0	44,9
3	Winter wheat (from survey)	24,5	65 00	79 90	Slaughter pig, slurry	30,0	34,5	49,9
4	Winter wheat (from survey)	79,7	65 00	59 40	Slaughter pig, slurry	30,0	21,0	33,6

Results

PUTATIVE
NUTRIENT BALANCE (KG/HA)

Total N	Plant available N	Total P	Plant available P
17,3	-43,9	47,1	33,6
23,3	-37,9	58,5	44,9
30,8	-30,4	63,5	49,9
17,3	-43,9	47,1	33,6
19,4	-41,8	50,0	36,4

ACTUAL
NUTRIENT BALANCE (KG/HA)

Total N	Plant available N	Total P	Plant available P
-47,9	-84,1	26,5	20,6
-28,6	-64,8	39,9	34,0
-35,1	-71,2	42,7	36,8
-15,2	-51,4	31,6	25,7
-33,0	-69,1	31,4	25,4

ACTUAL
NUTRIENT BALANCE (KG/HA)

Total N	Plant available N	Total P	Plant available P
-7,1	-67,4	35,8	29,9
12,2	-48,1	49,2	43,3
5,7	-54,6	52,1	46,1
25,6	-34,7	40,9	35,0
7,8	-52,5	40,7	34,7

Results

Relative change in nutrient leaching risk

(based on the nutrient balances)

Total N	Plant available N	Total P	Plant available P
124%	24%	30%	37%

Introducing NEW
manure data
will...

increase	increase	increase	increase
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...nutrient leaching risk

Negative result: the old manure data has underestimated manure nutrient content, causing overfertilisation.

Positive result: the old manure data has overestimated manure nutrient content, causing underfertilisation

Results

the new manure data). Another solution is to change mineral fertilisation

Nutrients from manure (actual: kg/ha)

Total N	Manure N efficiency factor	Soluble N	Total P	Manure P efficiency factor	Plant available P
60,3	40%	0,0	13,2	55%	7,3
60,3	40%	0,0	13,2	55%	7,3
60,3	40%	0,0	13,2	55%	7,3
60,3	40%	0,0	13,2	55%	7,3
60,3		0,0	13,2		7,3

Weighted averages

Total N	Plant available N	Total P	Plant available P
51%	24%	30%	37%

increase	increase	increase	increase
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...nutrient leaching risk

Thank You!