<u>N-demand</u>

1) Total crop N uptake : Season output > Column 'M'

2) Grain N : Season output > Column 'O'

3) Aboveground Residue N : Season output > $[Col'M' - (Col'N' + Col'O')]$

<u>N-supply</u>

1) N from Cover crop Red clover : Total crop N

Daily output > Column 'N' [it is cumulative, so just copy the last cell of red clover growing season]

2) N from alfalfa grown as forage :

3) mineral N (NH_4^+ and NO_3^-) at corn planting :-
Daily output > col'AT' + Col.'AU' When Col.'H' = "planting"

3) Net N - mineralization in Corn :
Daily output > $\sum$ Col 'AX' When Col 'G' = "Fallow" & "maize"
                                                                    before corn

<u>N losses</u>

1) N-Leaching :
Daily output > $\sum$ Col 'BD' when Col 'G' = "maize"

2) gaseous loss :
Daily output > $\sum$ Col 'BA' + $\sum$ Col 'BC' when Col 'G' = "maize"

Soil health:

1) SOC at begining of Corn:

   ? Daily output > Col 'BG' when Col 'H' = "planting"

   'G' = 'Corn'

2) SOC at ~~begining~~ end of Corn:

   ? Daily output > Col 'BG' when Col 'H' = "maturity"

   (* * *)

3) **Humified C** : Select the years when there was Corn.

   Annual soil outputs. > $\dfrac{\text{Sum col 'J' upto layer thicknen 25 cm (top 4 layer)}}{\text{Sum col 'G' up to layer thicknen 25 cm.}}$

   $\times 100$