**ALMANAC Output Abbreviation Key**

This is the regular ALMANAC output named ALNC\_Run.out It is found in the interface when opening the output, and where the project is stored. Ex: C/Almanac/ALMANAC\_Projects/Testing/Scenarios/Default

**Weather Data**
Average Monthly Values

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| TMX | Maximum daily air temperature | °C |
| TMN | Minimum daily air temperature | °C |
| STMX | Monthly average standard deviation of daily maximum air temperature | °C |
| STMN | Monthly average standard deviation of daily minimum air temperature | °C |
| RAIN | Precipitation | mm |
| SDRF | Monthly standard deviation of daily precipitation | mm |
| SKCF | Monthly skew coefficient for daily precipitation | Not Applicable (NA) |
| PW/D | Monthly probability of wet day after dry day | NA |
| PW/W | Monthly probability of wet day after wet day | NA |
| DAYP | Number of days with precipitation | Days |
| P5MX | Monthly maximum 0.5 hour rainfall for period of record | mm |
| RAD | Solar radiation | MJ/m2 |
| HRLT | Day length | Hours |
| RHUM | Relative humidity | Fraction |
| ALPH | 0.5 hour precipitation/total storm precipitation | NA |
| WVL | Wind velocity | m/s |
| WENG | Wind energy | kWh/m2 |

Wind Erosion Data

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| CF | Wind erosion equation climatic factor | NA |

**Soil Data** (Initial soil conditions before the simulation begins.)

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| Shown by soil layers: |
| DEPTH | Depth from surface to bottom of layer | m |
| POROSITY | Amount of pore space between soil particles | NA |
| FC SW | Soil water content at field capacity (33 kPa for many soils) | m/m |
| WP SW | Soil water content at wilting point (1500 kPa for many soils) | m/m |
| SW | Total soil water in the profile | m/m |
| SAT COND | Saturated Conductivity of the soil | mm/h |
| SSF TIME | Lateral subsurface flow travel time | Days |
| BD 33KPA | Moist soil bulk density | t/m3 |
| BDD OV DRY | Dry soil bulk density | t/m3 |
| SAND | Sand content | % |
| SILT | Silt content | % |
| CLAY | Clay content | % |
| ROCK | Course fragment content | % |
| PH | Soil pH | NA |
| SM BS | Sum of bases in soil | cmol/kg |
| CEC | Cation exchange capacity | cmol/kg |
| AL SAT | Soil aluminum saturation | % |
| CACO3 | Free soil calcium carbonate | % |
| LAB P | Labile phosphate by layer | g/t |
| P SORP RTO | Phosphorus sorption ratio | NA |
| MN P AC | Mineral P concentration in the active pool | g/t |
| MN P ST | Mineral P concentration in the stable pool | g/t |
| ORG P | Organic P concentration | g/t |
| NO3 | Nitrate concentration | g/t |
| OR N AC | Organic N concentration in the active pool | g/t |
| OR N ST | Organic N concentration in the stable pool | g/t |
| ORG C | Organic C content | % |
| CROP RSD | Crop residue | t/ha |
| RWT | Root weight in a soil layer | t/ha |

**Crop Parameters**

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| WA | Energy to biomass conversion factor. Potential growth rate per unit of intercepted photosynthetically active radiation. | kg/ha per MJ/m2 |
| HI | Harvest index. crop yield/above ground biomass | NA |
| TB | Optimal temperature for plant growth | °C |
| TG | Minimum temperature for plant growth | °C |
| DMLA | Maximum potential leaf area index | NA |
| DLAI | Fraction of growing season when leaf area index starts declining | NA |
| LAP1 | First point on optimal leaf area development curve. Numbers before decimal are % of growing seasons. Numbers after decimal are fractions of maximum potential leaf area index. | NA |
| LAP2 | Second point on optimal leaf area development curve. Numbers before decimal are % of growing seasons. Numbers after decimal are fractions of maximum potential leaf area index. | NA |
| PPL 1 | Plant population parameter. Number before decimal is plants/m2. Number after decimal is fraction of species LAI at that population. | NA |
| PPL 2 | Second plant population parameter. Number before decimal is plants/m2 (at a higher density). Number after decimal is fraction of species LAI at that population. | NA |
| FRS1 | First point on the frost damage curve. Numbers before decimal are the minimum temperatures (°C) and numbers after decimal are the fraction of biomass lost when specified minimum temperature occurs. | NA |
| FRS2 | Second point on the frost damage curve. Numbers before decimal are the minimum temperatures (°C) and numbers after decimal are the fraction of biomass lost when specified minimum temperature occurs. | NA |
| RLAD | Leaf area index decline rate parameter. Estimated LAI decline between DLAI and harvest. 1 is linear, >1 accelerated decline, <1 retards decline rate. | NA |
| RBMD | Biomass energy ratio decline rate parameter. Reduces efficiency of biomass-energy conversion due to creation of seeds or N translocation | NA |
| ALT | Index of crop tolerance to aluminum saturation (1-5; 1=sensitive, 5=tolerant) | NA |
| CAF | Critical aeration factor- fraction of soil porosity where poor aeration starts limiting plant growth. | NA |
| GSI | Maximum stomatal conductance at high solar radiation and low vapor pressure deficit.  | ms-1 |
| WAC2 | S curve that describes CO2 concentrations effect on WA. Number before decimal is CO2 concentration in the future. Number after decimal is resultant WA value. | NA |
| CLAIYR | The number of years until maximum LAI can be attained. | Years |
| VPTH | Threshold VPD | kPa |
| VPD2 | Slope of WA:VPD relationship above VPTH | kg/ha per MJ/m2 per kPa |
| SDW | Normal seeding rate | kg/ha |
| HMX | Maximum crop height | m |
| RDMX | Maximum root depth | m |
| CVM | Minimum value of water erosion C factor | NA |
| CNY | Normal fraction of N in yield | g/g |
| CPY | Normal fraction on P in yield | g/g |
| WSYF | Coefficient of crop yield sensitivity to water stress at the most critical stage of growth | NA |
| PST | Pest damage factor (insects, weeds, disease) – fraction of yield remaining after damage | NA |
| TREE1 | Tree parameter, listed in interface as COST. First point on multi-year s-curve function for tree LAI and height increase. Numbers before decimal are % of years to maturity. Numbers after decimal are fractions of maximum potential leaf area index and height increase. | NA |
| TREE2 | Tree parameter, listed in interface as PRY. Second point on multi-year s-curve function for tree LAI and height increase. Numbers before decimal are % of years to maturity. Numbers after decimal are fractions of maximum potential leaf area index and height increase. | NA |
| BN1 | Normal fraction of N in crop biomass at emergence | NA |
| BN2 | Normal fraction of N in crop biomass at midseason | NA |
| BN3 | Normal fraction of N in crop biomass at maturity | NA |
| BP1 | Normal fraction of P in crop biomass at emergence | NA |
| BP2 | Normal fraction of P in crop biomass at midseason | NA |
| BP3 | Normal fraction of P in crop biomass at maturity | NA |
| BW1 | Wind erosion factor for standing live biomass | NA |
| BW2 | Wind erosion factor for standing dead crop residue | NA |
| BW3 | Wind erosion factor for standing flat residue | NA |
| IDC | Crop category number (integer)1 Warm-season annual legume2 Cold-season annual legume3 Perennial legume4 Warm-season annual5 Cold-season annual6 Perennial7 Tree crop8 Deciduous Tree | NA |
| EXT | Extinction coefficient for calculating light interception | Kc |
| DORMNT | Defines the day length in the fall when dormancy begins (1 hour greater than the minimum for the latitude) Value is hours of day length which is added to the minimum day length of the year for that location. | Hours |
| DMPHT | Tree parameter, minimum grams of biomass per meter of height. | g/m |
| CHTYR | Tree parameter, number of years to maximum height. | Years |
| Rtprt1 | Fraction of weight portioned to roots for young plants | NA |
| GZPAL | Grazing palatability index. 4 highly palatable/first eaten, 3 palatable, 2 low palatability/grazed last, 1 grazed if starving, 0 not grazed/poisonous. | NA |
| Rtprt2 | Fraction of weight portioned to roots for plants near maturity | NA |
| DMLA | This DMLA is the maximum leaf area index reached in the simulation | NA |
| PHU | Potential heat units from planting to physiological maturity | °C |

Yearly Output Table (Larger table found at the end of every year.)

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| TMX | Maximum daily air temperature | °C |
| TMN | Minimum daily air temperature | °C |
| RAD | Solar radiation | MJ/m2 |
| RAIN | Precipitation | mm |
| SNOW | Water content of snowfall | mm |
| RHUM | Relative humidity | Fraction |
| UNO3 | N uptake by the crop | kg/ha |
| PEP | Potential plant water evaporation | mm |
| Q | Surface runoff | mm |
| SSF | Lateral subsurface flow travel time | Days |
| PRK | Percolation below the root zone | mm |
| ET | Evapotranspiration | mm |
| EP | Plant evaporation (Transpiration) | mm |
| PET | Potential evaporation | mm |
| TMP | Temperature in second soil layer | °C |
| MUSL | Soil loss from water erosion using modified USLE (MUSLE) | t/ha |
| C | Average water-erosion/crop-management factor | NA |
| YW | Soil loss from wind erosion | t/ha |
| YON | Organic N loss with sediment | kg/ha |
| YNO3 | NO3 loss in surface runoff | kg/ha |
| PRKN | Mineral N loss in percolate | kg/ha |
| SSFN | Mineral N loss in subsurface flow | kg/ha |
| MNN | N mineralized | kg/ha |
| IMN | N immobilized by decaying residue | kg/ha |
| DN | N loss by denitrification | kg/ha |
| NFIX | N fixed by leguminous crops  | kg/ha |
| UNO3 | N uptake by the crop | kg/ha |
| HMN | N mineralized from stable organic matter | kg/ha |
| SW | Total soil water in the profile | m/m |
| TNO3 | Total NO3 present in the soil profile | kg/ha |
| HU1 | Heat units – average daily temperature minus base temperature of crop | °C |
| LAI1 | Leaf area index | NA |
| RD | Root depth | m |
| RW1 | Total root weight | t/ha |
| BIOM | Crop biomass (shoot + root) | t/ha |
| RSD | Crop residue on soil surface | t/ha |
| STD | Standing dead crop residue | t/ha |
| BDP | Bulk density after tillage | t/m3 |
| STRS | The type and number of days of stress by month for the three highest stress variables. Water=1, N=2, P=3, Temperature=4, Aeration=5. Example: 411107201 means that there were 11 days of temperature stress (is 411), 7 days of water stress (is 107), and 1 day of nitrogen stress (201). | NA |

Yearly Summary Table (Smaller table found at the end of every year. Shown for each crop simulated.)

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| Shown as monthly intervals in the table: |
| HU | Heat units – average daily temperature minus base temperature of crop | °C |
| LAI | Leaf area index | NA |
| RD | Root depth | m |
| RW | Total root weight | t/ha |
| BIOM | Crop biomass (shoot + root) | t/ha |
| CHT | Crop height | m |
| Shown as yearly values: |
| (crop name) YLD | Harvested crop yield | t/ha |
| BIOM | Crop biomass (shoot + root) | t/ha |
| IRGA | Irrigation water applied | mm |
| CAW&TAW | Crop available water & Total Available water | mm |
| MXRD | Maximum root depth attained | m |
| LIME | Limestone applied CaCO3 equivalent | t/ha |
| COST | Total production cost. Currently unavailable, parameter has been commandeered to allow for more accurate tree growth simulation.  | $ |
| RTRN | Total income from crop sales. Currently unavailable. | $ |
| EK | Soil erodibility factor for water erosion | NA |
| WK | Soil erodibility factor for wind erosion | NA |
| MX HU | Maximum Heat Units rounded to the nearest integer. | °C |
| THK | Thickness of soil eroded by wind and water | mm |
| Stress Days | Days of crop stress due to water, N, P, temperature or aeration | Days |

**Final Soil Data** (Final soil conditions after simulation is complete.)

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| Shown by soil layers: |
| DEPTH | Depth from surface to bottom of layer | m |
| POROSITY | Amount of pore space between soil particles | NA |
| FC SW | Soil water content at field capacity (33 kPa for many soils) | m/m |
| WP SW | Soil water content at wilting point (1500 kPa for many soils) | m/m |
| SW | Total soil water in the profile | m/m |
| SAT COND | Saturated Conductivity of the soil | mm/h |
| SSF TIME | Lateral subsurface flow travel time | Days |
| BD 33KPA | Moist soil bulk density | t/m3 |
| BDD OV DRY | Dry soil bulk density | t/m3 |
| SAND | Sand content | % |
| SILT | Silt content | % |
| CLAY | Clay content | % |
| ROCK | Course fragment content | % |
| PH | Soil pH | NA |
| SM BS | Sum of bases in soil | cmol/kg |
| CEC | Cation exchange capacity | cmol/kg |
| AL SAT | Soil aluminum saturation | % |
| CACO3 | Free soil calcium carbonate | % |
| LAB P | Labile phosphate by layer | g/t |
| P SORP RTO | Phosphorus sorption ratio | NA |
| MN P AC | Mineral P concentration in the active pool | g/t |
| MN P ST | Mineral P concentration in the stable pool | g/t |
| ORG P | Organic P concentration | g/t |
| NO3 | Nitrate concentration | g/t |
| OR N AC | Organic N concentration in the active pool | g/t |
| OR N ST | Organic N concentration in the stable pool | g/t |
| ORG C | Organic C content | % |
| CROP RSD | Crop residue | t/ha |
| RWT | Root weight in a soil layer | t/ha |

**Summary Table**Average Monthly Values

|  |  |  |
| --- | --- | --- |
| Variable | Description | Units |
| C | Average water-erosion/crop-management factor | NA |
| MUSL | Soil loss from water erosion using modified USLE (MUSLE) | t/ha |
| YW | Soil loss from wind erosion | t/ha |
| RAIN | Precipitation | mm |
| DAYP | Number of days of rain per month | Days |
| PRK | Percolation below the root zone | mm |
| Q | Surface runoff | mm |
| EI | Rainfall energy factor | NA |
| DAYQ | Number of days with runoff | Days |
| SW | Total soil water in the profile  | m/m |
| QIN | Inflow to the root zone from the water table | mm |
| ET | Evapotranspiration | mm |
| PET | Potential evaporation | mm |
| TMX | Maximum daily air temperature | °C |
| TMN | Minimum daily air temperature | °C |
| RAD | Solar radiation | MJ/m2 |
| HRLT | Day length | Hours |

Average Annual Values

|  |  |  |
| --- | --- | --- |
| Variable | Description  | Units |
| TMX | Maximum daily air temperature | °C |
| TMN | Minimum daily air temperature | °C |
| RAD | Solar radiation | MJ/m2 |
| RAIN | Precipitation | mm |
| SNOW | Water content of snowfall | mm |
| RHUM | Relative humidity | Fraction |
| UNO3 | N uptake by the crop  | kg/ha |
| PEP | Potential plant water evaporation | mm |
| Q | Surface runoff | mm |
| SSF | Lateral subsurface flow travel time | Days |
| PRK | Percolation below the root zone | mm |
| ET | Evapotranspiration | mm |
| EP | Plant evaporation (Transpiration) | mm |
| PET | Potential evaporation | mm |
| TMP | Temperature in second soil layer | °C |
| MUSL | Soil loss from water erosion using modified USLE (MUSLE) | t/ha |
| C | Average water-erosion/crop-management factor  | NA |
| YW | Soil loss from wind erosion | t/ha |
| YON | Organic N loss with sediment | kg/ha |
| YNO3 | NO3 loss in surface runoff | kg/ha |
| PRKN | Mineral N loss in percolate | kg/ha |
| SSFN | Mineral N loss in subsurface flow | kg/ha |
| MNN | N mineralized | kg/ha |
| IMN | N immobilized by decaying residue | kg/ha |
| DN | N loss by denitrification | kg/ha |
| NFIX | N fixed by leguminous crops | kg/ha |
| UNO3 | N uptake by the crop | kg/ha |
| HMN | N mineralized from stable organic matter | kg/ha |
| IRGA | Irrigation water applied | mm |
| FN | Average annual N fertilizer rate | kg/ha |
| FP | Average annual P fertilizer rate | kg/ha |
| CN | SCS runoff curve number | NA |
| HU2 | Heat units – average daily temperature minus base temperature of crop | °C |
| LAI2 | Leaf area index | NA |
| WVL | Wind velocity | m/s |
| PEP | Potential plant water evaporation  | mm |
| LIME | Limestone applied CaCO3 equivalent | t/ha |
| COST | Total production cost. Currently unavailable, parameter has been commandeered to allow for more accurate tree growth simulation. | $ |
| RTRN | Total income from crop sales. Currently unavailable. | $ |

Average Annual Crop Yield Data (Shown for each crop simulated.)

|  |  |  |
| --- | --- | --- |
| Variable | Description  | Units |
| CROP | Four digit crop name | Text |
| YLD | Harvested crop yield | t/ha |
| BIOM | Crop biomass (shoot + root) | t/ha |
| RAD | Solar radiation | MJ/m2 |
| HU | Heat units – average daily temperature minus base temperature of crop | °C |
| RD | Root depth | m |

Average Stress Days (Shown for each crop simulated.)

|  |  |  |
| --- | --- | --- |
| Variable | Description  | Units |
| Biomass: |
| WATER | Water stress on crop growth | Days |
| N | Nitrogen stress on crop growth | Days |
| P | Phosphorus stress on crop growth | Days |
| TEMP | Temperature stress on crop growth | Days |
| AIR | Aeration stress on crop growth | Days |
| Root Growth: |
| BD | Moist soil bulk density stress on root growth | t/m3 |
| ALSAT | Soil aluminum saturation stress on root growth | % |
| TEMP | Temperature stress on root growth | Days |

**Alternate Outputs Key**

The information found in these outputs is also contained in the regular output, but here, specific data is separated into categories that may be useful to the user.

These outputs are located where the project is saved. Open the Scenarios folder, and open the folder with the name of your scenario (this is called Default unless you created another scenario).
Example: C/Almanac/ALMANAC\_Projects/Testing/Scenarios/Default

The output files are named ALNC\_\*.out There are ANnual outputs (ANC, ANH, ANW), MOnthly outputs (MOC, MOH, MOW), and DaiLy outputs (DLC, DLH, DLW). There are three different outputs for every time interval organized by interest. C is for crop data, H for hydrologic data, and W for weather data.

|  |
| --- |
| **Abbreviation Key in New Outputs** |
| **Output File** | **VARIABLE** | **DESCRIPTION**  | **UNITS**  |
| ***ALNC\_ANC*** | YEAR  | Year  | Not Applicable (NA)  |
|  | TMP  | Temperature in second soil layer  | °C |
|  | C  | Average water-erosion/crop-management factor  | NA  |
|  | MUSL  | Soil loss from water erosion using modified USLE (MUSLE)  | t/ha  |
|  | YW  | Soil loss from wind erosion  | t/ha  |
|  | MNP  | Mineral P concentration  | kg/ha  |
|  | YLD  | Yield  | t/ha  |
|  | BIOM  | Crop residue (shoot + root)  | t/ha  |
|  | UNO3  | N uptake by the crop  | kg/ha  |
|  | FN  | Average annual N fertilizer rate  | kg/ha  |
|  | FP  | Average annual P fertilizer rate  | kg/ha  |
|  | IRGA  | Irrigation water applied  | mm  |
|  | CAW  | Crop available water  | mm  |
|  | COST  | Total production cost. Currently unavailable, parameter has been commandeered to allow for more accurate tree growth simulation. | $  |
|  | RTRN  | Total income from crop sales. Currently unavailable. | NA  |
|  | WS  | Water stress days  | Days  |
|  | NS  | Nitrogen stress days  | Days  |
|  | PS  | Phosphorous stress days  | Days  |
|  | TS  | Temperature stress days  | Days  |
|  | AS  | Aeration stress days  | Days  |
| ***ALNC\_ANH*** | YEAR  | Year  | NA  |
|  | RAIN  | Precipitation  | mm  |
|  | ET  | Evapotranspiration  | mm  |
|  | Q  | Surface runoff  | mm  |
|  | SSF  | Lateral subsurface flow travel time  | Days  |
|  | PRK  | Percolation below the root zone  | mm  |
|  | MUSL  | Soil loss from water erosion using modified USLE (MUSLE)  | t/ha  |
|  | YON  | Organic N loss with sediment  | kg/ha  |
|  | YON3  | NO3 loss in surface runoff  | kg/ha  |
|  | PRKN  | Mineral N loss in percolate  | kg/ha  |
|  | SSFN  | Mineral N loss in subsurface flow  | kg/ha  |
|  | MNN  | N mineralized  | kg/ha  |
|  | IMN  | N immobilized by decaying residue  | kg/ha  |
|  | DN  | N loss by denitrification  | kg/ha  |
|  | NFIX  | N fixed by leguminous crops  | kg/ha  |
|  | UNO3  | N uptake by the crop  | kg/ha  |
|  | YP  | P loss with sediment  | kg/ha  |
|  | LIME  | Limestone applied CaCO3 equivalent  | t/ha |
|  | TNO3  | Total NO3 present in the soil  | kg/ha  |
| ***ALNC\_ANW*** | YEAR  | Year  | NA  |
|  | TMX  | Maximum daily air temperature  | °C |
|  | TMN  | Minimum daily air temperature  | °C |
|  | RAD  | Solar radiation  | MJ/m2  |
|  | RAIN  | Precipitation  | mm  |
|  | SNOW  | Water content of snowfall  | mm  |
|  | RHUM  | Relative humidity  | Fraction |
|  | PEP  | Potential plant water evaporation  | mm  |
|  | EP  | Plant evaporation (Transpiration) | mm  |
|  | PET  | Potential evapotranspiration  | mm  |
|  | ET  | Evapotranspiration  | mm  |
| ***ALNC\_MOC*** | YEAR  | Year  | NA  |
|  | MO  | Month  | NA  |
|  | HU1  | Heat units - average daily temp minus base temp of crop  | °C |
|  | LAI1  | Leaf area index  | NA |
|  | RD  | Root depth  | m  |
|  | RW1  | Total root weight  | t/ha  |
|  | BIOM  | Crop biomass (shoot + root)  | t/ha  |
|  | CHT  | Crop height  | m  |
|  | RSD  | Crop residue on soil surface  | t/ha  |
|  | STD  | Standing dead crop residue  | t/ha  |
|  | BDP  | Bulk density after tillage  | t/m3 |
|  | TMP  | Temperature in second soil layer  | °C |
|  | STRS\_WTR  | Number of days of stress by water by month  | Days  |
|  | STRS\_N  | Number of days of stress by nitrogen by month  | Days  |
|  | STRS\_P  | Phosphorous stress days  | Days  |
|  | STRS\_TMP  | Number of days of stress by temperature by month  | Days  |
|  | STRS\_AER  | Number of days of stress by aeration by month  | Days  |
| ***ALNC\_MOH*** | YEAR  | Year  | NA  |
|  | MO  | Month  | NA  |
|  | RAIN  | Precipitation  | mm  |
|  | ET  | Evapotranspiration  | mm  |
|  | Q  | Surface runoff  | mm  |
|  | SSF  | Lateral subsurface flow travel time  | Days  |
|  | PRK  | Percolation below the root zone  | mm  |
|  | MUSL  | Soil loss from water erosion using modified USLE (MUSLE)  | t/ha  |
|  | YON  | Organic N loss with sediment  | kg/ha  |
|  | YON3  | NO3 loss in surface runoff  | kg/ha  |
|  | PRKN  | Mineral N loss in percolate  | kg/ha  |
|  | SSFN  | Mineral N loss in subsurface flow  | kg/ha  |
|  | MNN  | Nitrogen mineralized  | kg/ha  |
|  | IMN  | N immobilized by decaying residue  | kg/ha  |
|  | DN  | N loss by denitrification  | kg/ha  |
|  | NFIX  | N fixed by leguminous crop  | kg/ha  |
|  | UNO3  | N uptake by the crop  | kg/ha  |
|  | TNO3  | Total NO3 present in the soil profile  | kg/ha  |
|  | SW  | Total soil water in the profile  | m/m  |
|  | C  | Average water-erosion/crop-management factor  | NA  |
|  | YW  | Soil loss from wind erosion  | t/ha  |
| ***ALNC\_MOW*** | YEAR  | Year  | NA  |
|  | MO  | Month  | NA  |
|  | TMX  | Maximum daily air temperature  | °C |
|  | TMN  | Minimum daily air temperature  | °C |
|  | RAD  | Solar radiation  | MJ/m2  |
|  | RAIN  | Precipitation  | mm  |
|  | SNOW  | Water content of snowfall  | mm  |
|  | RHUM  | Relative humidity  | Fraction |
|  | PEP  | Potential plant water evaporation  | mm  |
|  | ET  | Evapotranspiration  | mm  |
|  | PET  | Potential evaporation  | mm  |
|  | EP | Plant evaporation (Transpiration) | mm  |
|  | YW  | Soil loss from wind erosion  | t/ha  |
| ***ALNC\_DLC*** | YEAR  | Year  | NA  |
|  | MO  | Month  | NA  |
|  | DAY | Day | NA |
|  | HU1  | Heat units - average daily temp minus base temp of crop  | °C |
|  | LAI1  | Leaf area index  | NA |
|  | RD  | Root depth  | m  |
|  | RW1  | Total root weight  | t/ha  |
|  | BIOM  | Crop biomass (shoot + root)  | t/ha  |
|  | RSD  | Crop residue on soil surface  | t/ha  |
|  | STD  | Standing dead crop residue  | t/ha  |
|  | BDP  | Bulk density after tillage  | t/m3 |
|  | TMP  | Temperature in second soil layer  | °C |
|  | C  | Average water-erosion/crop-management factor  | NA  |
|  | MUSL  | Soil loss from water erosion using modified USLE (MUSLE)  | t/ha  |
|  | YW | Soil loss from wind erosion  | t/ha  |
|  | STRS\_WTR  | Number of days of stress by water by month  | Days  |
|  | STRS\_N  | Number of days of stress by nitrogen by month  | Days  |
|  | STRS\_P  | Number of days of stress by phosphorus  | Days  |
|  | STRS\_TMP  | Number of days of stress by temperature by month  | Days  |
|  | STRS\_AER  | Number of days of stress by aeration by month  | Days  |
| ***ALNC\_DLH*** | YEAR  | Year  | NA  |
|  | MO  | Month  | NA  |
|  | DAY | Day | NA |
|  | RAIN  | Precipitation  | mm  |
|  | ET  | Evapotranspiration  | mm  |
|  | Q  | Surface runoff  | mm  |
|  | SSF  | Lateral subsurface flow travel time  | Days  |
|  | PRK  | Percolation below the root zone  | mm  |
|  | MUSL  | Soil loss from water erosion using modified USLE (MUSLE)  | t/ha  |
|  | YON  | Organic N loss with sediment  | kg/ha  |
|  | YON3  | NO3 loss in surface runoff  | kg/ha  |
|  | PRKN  | Mineral N loss in percolate  | kg/ha  |
|  | SSFN  | Mineral N loss in subsurface flow  | kg/ha  |
|  | MNN  | Nitrogen mineralized  | kg/ha  |
|  | IMN  | N immobilized by decaying residue  | kg/ha  |
|  | DN  | N loss by denitrification  | kg/ha  |
|  | NFIX  | N fixed by leguminous crop  | kg/ha  |
|  | UNO3  | N uptake by the crop  | kg/ha  |
|  | TNO3  | Total NO3 present in the soil profile  | kg/ha  |
|  | SW  | Total soil water in the profile  | m/m  |
| ***ALNC\_DLW*** | YEAR  | Year  | NA  |
|  | MO  | Month  | NA  |
|  | DAY | Day | NA |
|  | TMX  | Maximum daily air temperature  | °C |
|  | TMN  | Minimum daily air temperature  | °C |
|  | RAD  | Solar radiation  | MJ/m2  |
|  | RAIN  | Precipitation  | mm  |
|  | SNOW  | Water content of snowfall  | mm  |
|  | RHUM  | Relative humidity  | Fraction |
|  | PEP  | Potential plant water evaporation  | mm  |
|  | EP | Plant evaporation (Transpiration) | mm  |
|  | PET  | Potential evaporation  | mm  |
|  | ET  | Evapotranspiration  | mm  |