**Comparison of Measured and Simulated Soil N Data**

**Measured Data**

The file “h(\\swsrsetserver)\N Tracking Project\All REC N Tracking Results 2015-Converted.xlsx” (or “H:\SunY\Measured Data\All REC N Tracking Results 2015-Converted.xlsx”) can be used as a template for converting the measured data on a trial site to a format that is easy to make comparisons between the measured data and the simulated results.

On Sheet “Urbana”, the measured data were copied from the raw data file (from Dr. Emerson Nafziger) to lines 1 to 34. The raw data were averaged for each treatment in two layers (0-1’ and 1’-2’) and converted to N lb/acre on lines 38 to 48. Lines 50 to 60 converted the N concentration unit of lb/acre to g[N]/Mg soil. See the “Measurement data” in the section of “For Urbana 2015, Treatment: 100F+50+50” in this file as an example of the conversion. It was assumed that the soil bulk density was 1.5 Mg/m3. Lines 62 to 72 listed all the treatments.

**Simulated Results**

The output simulation data of DSSAT are contained in an ASCII file with the same name as the FileX but with an extension name of .OSN, i.e. UICP1502.OSN. Open the output file with Microsoft Excel, and delete some rows and lines to get a form as shown on the sheet of “UICP1502” of the file “C:\DSSAT46\Maize\UICP1502.xlsx. Then copy the whole sheet to the sheet of “UICP1502” of the file “C:\DSSAT46\Maize\UICP1502.xlsx with the same data location. The file “C:\DSSAT46\Maize\UICP1502.xlsx” (or “h(\\swsrsetserver)\N Tracking Project\ UICP1502.xlsx”) can be used as a template for generating corresponding simulated data to the measured data and the comparison table and chart. Then on Sheet1 of “UICP1502.xlsx”, only copy the data on the measured days from the sheet UICP1502 to Sheet1, and replace the measured data in the block “I17 to J27” for NO3 and the block “R17 to S27” for NH4 with the actual measured data. Block “A29 to G45” is for the treatment information and the initial condition setting. The comparison table and the chart should be automatically generated when all the data are updated.

**For Urbana 2015, Treatment: 100F+50+50**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fall NH3 application date | | 11/13 | 100 lb/acre | 112.1 N kg/ha |
| Early spring NH3 application date | | 4/6 |  |  |
| Planting date |  | 4/23 |  |  |
| Planting time N application date | | 4/23 | 50 lb/acre | 56 N kg/ha |
| Sidedress N date (V5) |  | 5/28 | 50 lb/acre | 56 N kg/ha |

**Measurement data** in Urbana trial field on 11/14/2014, 14318, used as initial conditions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **date** | **code** | **depth** | **NO3-N** | **NH4-N** | **Sum of N** |
| 11/14/14 | F1-10 DA | 103 0-1' | 10.4 | 11.6 | 22 |
| 11/14/14 | F1-10 DA | 103 1-2' | 3.1 | 5.4 | 8.5 |
| 11/14/14 | F1-10 DA | 201 0-1' | 10.3 | 4.8 | 15.1 |
| 11/14/14 | F1-10 DA | 201 1-2' | 2.6 | 4.7 | 7.3 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **NO3-N** | | **NH4-N** | **NO3 lb/acre** | **NH4 lb/acre** | | **Total N lb/acre** |
| **0 – 1’ (0 – 30cm)** | 10.35 | | 8.2 | 10.35x8=82.8 | 8.2x8=65.6 | | 148.4 |
| **1 – 2’ (30 – 61cm)** | 2.85 | | 5.05 | 2.85x8=22.8 | 5.05x8=40.4 | | 63.2 |
|  | | **NO3: g[N]/Mg soil** | | | | **NH4: g[N]/Mg soil** | | |
| **0 – 1’ (0 – 30cm)** | | 20.3 | | | | 16.1 | | |
| **1 – 2’ (30 – 61cm)** | | 5.6 | | | | 9.9 | | |

(1 acre = 4046.85642 m2 1 lb = 453.59237 g 1 ft = 0.3048 m; Assume soil bulk density = 1.5 Mg/m3

20.3 g[N]/Mg soil = 82.8\*453.6/4046.86/0.3048/1.5)

See “H:\SunY\Measured Data\All REC N Tracking Results 2015-Converted” file, at the bottom of Sheet Urbana for the calculation.

|  |  |  |
| --- | --- | --- |
| **Simulated:** | **NO3: g[N]/Mg soil** | **NH4: g[N]/Mg soil** |
| **0 – 1’ (0 – 30cm)** | 18.4 | 14.5 |
| **1 – 2’ (30 – 61cm)** | 10.8 | 11.6 |

See “C:\DSSAT46\Maize\UICP150201.xlsx” fil for the simulated results. See Sheet 1 for the comparison with the measured data.

**Comparisons:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Day of Year** | **Depth** | **Measured** | | | **Simulated** | | | **R.D of total N, %** |
| **NO3** | **NH4** | **Total N** | **NO3** | **NH4** | **Total N** |
| 11/14/14 | 14318 | 0 – 1’ | 20.3 | 16.1 | 36.4 | 18.4 | 14.5 | 32.9 | 9.6 |
| 1 – 2’ | 5.6 | 9.9 | 15.5 | 10.8 | 11.6 | 22.4 | -44.2 |
| 4/7/15 | 15097 | 0 – 1’ | 34.5 | 12.4 | 46.9 | 9.2 | 0.04 | 9.3 | 80.3 |
| 1 – 2’ | 13.2 | 4.8 | 18.0 | 19.6 | 0.01 | 19.6 | -8.7 |
| 4/24/15 | 15114 | 0 – 1’ | 33.1 | 12.3 | 45.4 | 12.9 | 5.3 | 18.2 | 60.0 |
| 1 – 2’ | 33.3 | 5.6 | 38.9 | 18.0 | 0.02 | 18.0 | 53.6 |
| 5/4/15 | 15124 | 0 – 1’ | 42.5 | 17.0 | 59.5 | 19.8 | 1.7 | 21.5 | 63.8 |
| 1 – 2’ | 18.7 | 5.3 | 24.0 | 18.4 | 0.11 | 18.5 | 23.0 |
| 5/13/15 | 15133 | 0 – 1’ | 59.0 | 22.8 | 81.8 | 16.8 | 0.13 | 17.0 | 79.3 |
| 1 – 2’ | 20.3 | 9.9 | 30.2 | 21.0 | 0.03 | 21.1 | 30.2 |
| 5/22/15 | 15142 | 0 – 1’ | 65.2 | 11.9 | 77.1 | 18.5 | 0.04 | 18.6 | 76.0 |
| 1 – 2’ | 22.3 | 8.2 | 30.5 | 20.4 | 0.02 | 20.4 | 32.9 |
| 6/2/15 | 15153 | 0 – 1’ | 58.3 | 12.5 | 70.8 | 18.2 | 2.2 | 20.4 | 71.1 |
| 1 – 2’ | 31.2 | 7.6 | 38.8 | 23.7 | 0.02 | 23.7 | 38.9 |
| 6/12/15 | 15163 | 0 – 1’ | 46.9 | 13.1 | 60.0 | 11.8 | 0.1 | 11.9 | 80.3 |
| 1 – 2’ | 15.8 | 4.6 | 20.4 | 23.7 | 0.01 | 23.7 | -16.4 |
| 6/22/15 | 15173 | 0 – 1’ | 31.3 | 9.0 | 40.3 | 5.2 | 0.1 | 5.3 | 87.0 |
| 1 – 2’ | 18.1 | 9.0 | 27.1 | 18.5 | 0.01 | 18.5 | 31.7 |
| 7/13/15 | 15194 | 0 – 1’ | 7.2 | 11.6 | 18.8 | 0.6 | 0.1 | 0.7 | 96.5 |
| 1 – 2’ | 3.1 | 8.4 | 11.5 | 7.8 | 0.02 | 7.8 | 32.3 |
| 8/11/15 | 15223 | 0 – 1’ | 3.2 | 2.6 | 5.8 | 0.5 | 0.03 | 0.6 | 90.8 |
| 1 – 2’ | 0.6 | 2.8 | 3.4 | 5.4 | 0.00 | 5.4 | -57.5 |

|  |  |
| --- | --- |
|  |  |

The measured soil N level increased with days after the fall application, which might suggest that the biomass residual buried in soil in the previous harvest releases some N to the soil.

The changes for the initial conditions are made: the root weight of the previous crop, from 250 to 1000 kg/ha; the crop residue, from default (blank) to 4942 kg/ha; residue N to 1.2%; residue P to 0.32%; incorporation to 100%, and depth to 5 cm. See “C:\DSSAT46\Maize\UICP1502.xlsx” file for the simulated result, and Sheet 1 for the comparison with the measured data. The new simulation results are shown as in the table below.

**Comparisons of Simulated Results with New Initial Conditions:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Day of Year** | **Depth** | **Measured** | | | **Simulated** | | | **R.D of total N, %** |
| **NO3** | **NH4** | **Total N** | **NO3** | **NH4** | **Total N** |
| 11/14/2014 | 14318 | 0 – 1’ | 20.3 | 16.1 | 36.4 | 17.3 | 15.01 | 32.3 | 11.2 |
| 1 – 2’ | 5.6 | 9.9 | 15.5 | 8.0 | 9.18 | 17.2 | -11.1 |
| 4/7/2015 | 15097 | 0 – 1’ | 34.5 | 12.4 | 46.9 | 9.0 | 0.13 | 9.1 | 80.5 |
| 1 – 2’ | 13.2 | 4.8 | 18 | 15.5 | 0.01 | 15.5 | 13.7 |
| 4/24/2015 | 15114 | 0 – 1’ | 33.1 | 12.3 | 45.4 | 13.0 | 5.32 | 18.3 | 59.8 |
| 1 – 2’ | 33.3 | 5.6 | 38.9 | 14.3 | 0.01 | 14.3 | 63.3 |
| 5/4/2015 | 15124 | 0 – 1’ | 42.5 | 17 | 59.5 | 20.6 | 1.78 | 22.4 | 62.4 |
| 1 – 2’ | 18.7 | 5.3 | 24 | 14.2 | 0.04 | 14.2 | 40.8 |
| 5/13/2015 | 15133 | 0 – 1’ | 59 | 22.8 | 81.8 | 18.9 | 0.20 | 19.1 | 76.6 |
| 1 – 2’ | 20.3 | 9.9 | 30.2 | 16.3 | 0.03 | 16.3 | 45.9 |
| 5/22/2015 | 15142 | 0 – 1’ | 65.2 | 11.9 | 77.1 | 20.0 | 0.09 | 20.1 | 74.0 |
| 1 – 2’ | 22.3 | 8.2 | 30.5 | 15.9 | 0.02 | 16.0 | 47.7 |
| 6/2/2015 | 15153 | 0 – 1’ | 58.3 | 12.5 | 70.8 | 19.8 | 2.72 | 22.6 | 68.1 |
| 1 – 2’ | 31.2 | 7.6 | 38.8 | 17.4 | 0.06 | 17.5 | 54.9 |
| 6/12/2015 | 15163 | 0 – 1’ | 46.9 | 13.1 | 60 | 12.6 | 0.18 | 12.8 | 78.7 |
| 1 – 2’ | 15.8 | 4.6 | 20.4 | 18.8 | 0.05 | 18.8 | 7.8 |
| 6/22/2015 | 15173 | 0 – 1’ | 31.3 | 9 | 40.3 | 5.2 | 0.21 | 5.4 | 86.5 |
| 1 – 2’ | 18.1 | 9 | 27.1 | 14.6 | 0.02 | 14.7 | 45.9 |
| 7/13/2015 | 15194 | 0 – 1’ | 7.2 | 11.6 | 18.8 | 0.6 | 0.20 | 0.8 | 95.7 |
| 1 – 2’ | 3.1 | 8.4 | 11.5 | 4.6 | 0.03 | 4.6 | 60.1 |
| 8/11/2015 | 15223 | 0 – 1’ | 3.2 | 2.6 | 5.8 | 0.4 | 0.11 | 0.5 | 91.5 |
| 1 – 2’ | 0.6 | 2.8 | 3.4 | 2.7 | 0.01 | 2.7 | 19.7 |

The simulated results improved slightly. Some other parameters should be also changed.

**For Urbana 2015, Treatment 0: No N Application**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fall NH3 application date | | 11/13 |  |  |
| Early spring NH3 application date | | 4/6 |  |  |
| Planting date |  | 4/23 |  |  |
| Planting time N application date | | 4/23 |  |  |
| Sidedress N date (V5) |  | 5/28 |  |  |

See “C:\DSSAT46\Maize\UICP1500.xlsx” file for the simulated results. See Sheet 1 for the comparison with the measured data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Day of Year** | **Depth** | **Measured** | | | **Simulated** | | | **R.D of total N, %** |
| **NO3** | **NH4** | **Total N** | **NO3** | **NH4** | **Total N** |
| 11/14/2014 | 14318 | 0 – 1’ | 14.6 | 4.6 | 19.2 | 12.5 | 4.40 | 16.9 | 12.0 |
| 1 – 2’ | 5.9 | 3.5 | 9.4 | 7.0 | 3.35 | 10.3 | -9.9 |
| 4/7/2015 | 15097 | 0 – 1’ | 38.6 | 4.7 | 43.3 | 4.8 | 0.15 | 5.0 | 88.5 |
| 1 – 2’ | 12.9 | 3.5 | 16.4 | 8.4 | 0.01 | 8.4 | 48.8 |
| 4/24/2015 | 15114 | 0 – 1’ | 22 | 8.4 | 30.4 | 5.2 | 0.18 | 5.3 | 82.4 |
| 1 – 2’ | 12.7 | 6.1 | 18.8 | 7.8 | 0.02 | 7.8 | 58.3 |
| 5/4/2015 | 15124 | 0 – 1’ | 34.9 | 11.6 | 46.5 | 5.8 | 0.11 | 5.9 | 87.4 |
| 1 – 2’ | 16.9 | 10.6 | 27.5 | 7.7 | 0.02 | 7.8 | 71.8 |
| 5/13/2015 | 15133 | 0 – 1’ | 44.1 | 19 | 63.1 | 5.2 | 0.18 | 5.4 | 91.5 |
| 1 – 2’ | 17.3 | 7.8 | 25.1 | 8.1 | 0.02 | 8.1 | 67.8 |
| 5/22/2015 | 15142 | 0 – 1’ | 34.5 | 8.6 | 43.1 | 5.7 | 0.12 | 5.8 | 86.6 |
| 1 – 2’ | 15.5 | 6.5 | 22 | 7.9 | 0.02 | 7.9 | 64.2 |
| 6/2/2015 | 15153 | 0 – 1’ | 50.2 | 7.1 | 57.3 | 2.4 | 0.17 | 2.6 | 95.5 |
| 1 – 2’ | 20.2 | 4.3 | 24.5 | 6.6 | 0.03 | 6.6 | 73.0 |
| 6/12/2015 | 15163 | 0 – 1’ | 29.3 | 10.8 | 40.1 | 0.5 | 0.14 | 0.7 | 98.4 |
| 1 – 2’ | 16.5 | 9.8 | 26.3 | 3.0 | 0.02 | 3.0 | 88.6 |
| 6/22/2015 | 15173 | 0 – 1’ | 21.9 | 10.5 | 32.4 | 0.3 | 0.17 | 0.4 | 98.6 |
| 1 – 2’ | 5.7 | 7.5 | 13.2 | 0.8 | 0.03 | 0.8 | 93.7 |
| 7/13/2015 | 15194 | 0 – 1’ | 7.5 | 8.2 | 15.7 | 0.3 | 0.15 | 0.4 | 97.4 |
| 1 – 2’ | 1.5 | 5.2 | 6.7 | 0.3 | 0.03 | 0.3 | 95.8 |
| 8/11/2015 | 15223 | 0 – 1’ | 2.6 | 2.2 | 4.8 | 0.3 | 0.10 | 0.4 | 92.2 |
| 1 – 2’ | 0.6 | 1.9 | 2.5 | 0.3 | 0.00 | 0.3 | 89.8 |

**For Urbana 2015, Treatment 1: 200 Fall**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fall NH3 application date | | 11/13 | 200 lb/acre | 224 N kg/ha |
| Early spring NH3 application date | | 4/6 |  |  |
| Planting date |  | 4/23 |  |  |
| Planting time N application date | | 4/23 |  |  |
| Sidedress N date (V5) |  | 5/28 |  |  |

See “C:\DSSAT46\Maize\UICP1501.xlsx” file for the simulated results. See Sheet 1 for the comparison with the measured data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Day of Year** | **Depth** | **Measured** | | | **Simulated** | | | **R.D of total N, %** |
| **NO3** | **NH4** | **Total N** | **NO3** | **NH4** | **Total N** |
| 11/14/2014 | 14318 | 0 – 1’ | 27.3 | 49.1 | 76.4 | 23.4 | 43.32 | 66.7 | 12.7 |
| 1 – 2’ | 5 | 18.2 | 23.2 | 10.0 | 23.30 | 33.3 | -43.3 |
| 4/7/2015 | 15097 | 0 – 1’ | 44.3 | 22.2 | 66.5 | 19.2 | 0.10 | 19.3 | 71.0 |
| 1 – 2’ | 12.6 | 13.7 | 26.3 | 32.8 | 0.00 | 32.8 | -24.6 |
| 4/24/2015 | 15114 | 0 – 1’ | 47.4 | 23.5 | 70.9 | 18.4 | 0.16 | 18.6 | 73.8 |
| 1 – 2’ | 31.7 | 12.8 | 44.5 | 30.1 | 0.01 | 30.1 | 32.3 |
| 5/4/2015 | 15124 | 0 – 1’ | 53.4 | 9.5 | 62.9 | 19.9 | 0.10 | 20.0 | 68.2 |
| 1 – 2’ | 22.8 | 8.4 | 31.2 | 29.5 | 0.01 | 29.5 | 5.6 |
| 5/13/2015 | 15133 | 0 – 1’ | 69.7 | 22.8 | 92.5 | 17.1 | 0.18 | 17.3 | 81.3 |
| 1 – 2’ | 25.3 | 7.4 | 32.7 | 30.1 | 0.02 | 30.1 | 7.9 |
| 5/22/2015 | 15142 | 0 – 1’ | 107.6 | 11.6 | 119.2 | 19.9 | 0.13 | 20.0 | 83.2 |
| 1 – 2’ | 39 | 8.6 | 47.6 | 29.1 | 0.02 | 29.1 | 38.8 |
| 6/2/2015 | 15153 | 0 – 1’ | 91.6 | 9.7 | 101.3 | 11.4 | 0.18 | 11.5 | 88.6 |
| 1 – 2’ | 36 | 11.1 | 47.1 | 27.2 | 0.03 | 27.2 | 42.3 |
| 6/12/2015 | 15163 | 0 – 1’ | 57.6 | 11.6 | 69.2 | 6.9 | 0.16 | 7.0 | 89.8 |
| 1 – 2’ | 23.1 | 9.9 | 33 | 23.6 | 0.02 | 23.6 | 28.5 |
| 6/22/2015 | 15173 | 0 – 1’ | 59.2 | 9.8 | 69 | 3.1 | 0.24 | 3.3 | 95.2 |
| 1 – 2’ | 20.8 | 9.5 | 30.3 | 17.2 | 0.02 | 17.2 | 43.3 |
| 7/13/2015 | 15194 | 0 – 1’ | 8.2 | 11.8 | 20 | 0.7 | 0.22 | 0.9 | 95.5 |
| 1 – 2’ | 9.8 | 9.8 | 19.6 | 6.4 | 0.03 | 6.4 | 67.3 |
| 8/11/2015 | 15223 | 0 – 1’ | 3.1 | 2.1 | 5.2 | 0.9 | 0.12 | 1.0 | 81.3 |
| 1 – 2’ | 3.2 | 2.4 | 5.6 | 5.1 | 0.01 | 5.1 | 8.9 |

**For Urbana 2015, Treatment 3: 200 Spring**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fall NH3 application date | | 11/13 |  |  |
| Early spring NH3 application date | | 4/6 | 200 lb/acre | 224 N kg/ha |
| Planting date |  | 4/23 |  |  |
| Planting time N application date | | 4/23 |  |  |
| Sidedress N date (V5) |  | 5/28 |  |  |

See “C:\DSSAT46\Maize\UICP1503.xlsx” file for the simulated results. See Sheet 1 for the comparison with the measured data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Day of Year** | **Depth** | **Measured** | | | **Simulated** | | | **R.D of total N, %** |
| **NO3** | **NH4** | **Total N** | **NO3** | **NH4** | **Total N** |
| 11/14/2014 | 14318 | 0 – 1’ | 14.6 | 4.6 | 19.2 | 12.5 | 4.40 | 16.9 | 12.0 |
| 1 – 2’ | 5.9 | 3.5 | 9.4 | 7.0 | 3.35 | 10.3 | -9.9 |
| 4/7/2015 | 15097 | 0 – 1’ | 34.8 | 38.3 | 73.1 | 24.4 | 24.06 | 48.4 | 33.8 |
| 1 – 2’ | 9.3 | 9.5 | 18.8 | 8.4 | 0.01 | 8.4 | 55.3 |
| 4/24/2015 | 15114 | 0 – 1’ | 24.5 | 24.7 | 49.2 | 52.8 | 0.57 | 53.4 | -8.6 |
| 1 – 2’ | 20.7 | 11 | 31.7 | 10.0 | 0.07 | 10.0 | 68.4 |
| 5/4/2015 | 15124 | 0 – 1’ | 49.2 | 38.5 | 87.7 | 51.1 | 0.10 | 51.2 | 41.6 |
| 1 – 2’ | 16.5 | 8.1 | 24.6 | 11.3 | 0.03 | 11.3 | 53.9 |
| 5/13/2015 | 15133 | 0 – 1’ | 57.2 | 27.4 | 84.6 | 41.3 | 0.05 | 41.4 | 51.1 |
| 1 – 2’ | 16.7 | 6.6 | 23.3 | 17.5 | 0.02 | 17.5 | 24.7 |
| 5/22/2015 | 15142 | 0 – 1’ | 71.9 | 18.7 | 90.6 | 41.7 | 0.02 | 41.8 | 53.9 |
| 1 – 2’ | 25.3 | 8.1 | 33.4 | 17.1 | 0.01 | 17.1 | 48.7 |
| 6/2/2015 | 15153 | 0 – 1’ | 54.7 | 6.7 | 61.4 | 27.1 | 0.17 | 27.2 | 55.7 |
| 1 – 2’ | 18.8 | 5.4 | 24.2 | 21.6 | 0.02 | 21.6 | 10.7 |
| 6/12/2015 | 15163 | 0 – 1’ | 59.5 | 12.7 | 72.2 | 15.9 | 0.18 | 16.0 | 77.8 |
| 1 – 2’ | 34.3 | 11 | 45.3 | 22.9 | 0.01 | 22.9 | 49.4 |
| 6/22/2015 | 15173 | 0 – 1’ | 20.6 | 14.5 | 35.1 | 7.5 | 0.29 | 7.8 | 77.8 |
| 1 – 2’ | 11.8 | 8.3 | 20.1 | 19.0 | 0.01 | 19.0 | 5.7 |
| 7/13/2015 | 15194 | 0 – 1’ | 11.9 | 10.2 | 22.1 | 1.1 | 0.28 | 1.3 | 94.0 |
| 1 – 2’ | 13.2 | 10.5 | 23.7 | 7.2 | 0.03 | 7.2 | 69.7 |
| 8/11/2015 | 15223 | 0 – 1’ | 4.9 | 2.7 | 7.6 | 0.8 | 0.15 | 1.0 | 86.9 |
| 1 – 2’ | 2.5 | 3.1 | 5.6 | 4.7 | 0.00 | 4.7 | 15.5 |

**For Urbana 2015, Treatment 4: 50pl+150 SD**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fall NH3 application date | | 11/13 |  |  |
| Early spring NH3 application date | | 4/6 |  |  |
| Planting date |  | 4/23 |  |  |
| Planting time N application date | | 4/23 | 50 lb/acre | 56 N kg/ha |
| Sidedress N date (V5) |  | 5/28 | 150 lb/acre | 168 N kg/ha |

See “C:\DSSAT46\Maize\UICP1504.xlsx” file for the simulated results. See Sheet 1 for the comparison with the measured data.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Day of Year** | **Depth** | **Measured** | | | **Simulated** | | | **R.D of total N, %** |
| **NO3** | **NH4** | **Total N** | **NO3** | **NH4** | **Total N** |
| 11/14/2014 | 14318 | 0 – 1’ | 14.6 | 4.6 | 19.2 | 12.5 | 4.40 | 16.9 | 12.0 |
| 1 – 2’ | 5.9 | 3.5 | 9.4 | 7.0 | 3.35 | 10.3 | -9.9 |
| 4/7/2015 | 15097 | 0 – 1’ | 38.6 | 4.7 | 43.3 | 4.8 | 0.15 | 5.0 | 88.5 |
| 1 – 2’ | 12.9 | 3.5 | 16.4 | 8.4 | 0.01 | 8.4 | 48.8 |
| 4/24/2015 | 15114 | 0 – 1’ | 21.3 | 8.8 | 30.1 | 9.9 | 6.19 | 16.1 | 46.6 |
| 1 – 2’ | 16.4 | 5.1 | 21.5 | 7.8 | 0.02 | 7.8 | 63.5 |
| 5/4/2015 | 15124 | 0 – 1’ | 28.5 | 11.2 | 39.7 | 17.6 | 1.23 | 18.9 | 52.5 |
| 1 – 2’ | 11.1 | 5.2 | 16.3 | 7.8 | 0.02 | 7.8 | 51.9 |
| 5/13/2015 | 15133 | 0 – 1’ | 31.7 | 8 | 39.7 | 15.4 | 0.13 | 15.5 | 60.9 |
| 1 – 2’ | 10 | 5.9 | 15.9 | 9.5 | 0.02 | 9.5 | 40.0 |
| 5/22/2015 | 15142 | 0 – 1’ | 43.9 | 10.6 | 54.5 | 15.7 | 0.10 | 15.8 | 71.1 |
| 1 – 2’ | 18.9 | 9 | 27.9 | 9.5 | 0.02 | 9.5 | 66.0 |
| 6/2/2015 | 15153 | 0 – 1’ | 46.8 | 38.9 | 85.7 | 33.9 | 8.00 | 41.9 | 51.1 |
| 1 – 2’ | 21.8 | 10.5 | 32.3 | 12.7 | 0.14 | 12.9 | 60.1 |
| 6/12/2015 | 15163 | 0 – 1’ | 50.8 | 32.7 | 83.5 | 25.5 | 0.31 | 25.8 | 69.1 |
| 1 – 2’ | 23.7 | 8.6 | 32.3 | 20.6 | 0.08 | 20.7 | 36.0 |
| 6/22/2015 | 15173 | 0 – 1’ | 41.6 | 19.2 | 60.8 | 12.8 | 0.20 | 13.0 | 78.6 |
| 1 – 2’ | 24.4 | 9.4 | 33.8 | 20.3 | 0.01 | 20.3 | 40.0 |
| 7/13/2015 | 15194 | 0 – 1’ | 16.2 | 10.9 | 27.1 | 1.5 | 0.21 | 1.7 | 93.7 |
| 1 – 2’ | 11.6 | 6.9 | 18.5 | 9.6 | 0.02 | 9.6 | 47.9 |
| 8/11/2015 | 15223 | 0 – 1’ | 8.7 | 2.3 | 11 | 1.1 | 0.11 | 1.3 | 88.6 |
| 1 – 2’ | 6 | 2.5 | 8.5 | 6.4 | 0.00 | 6.4 | 25.2 |