**Table 6. Comparison of select soil characteristics between direct seed and native/undisturbed sites, averaged across all depth increments. Different letters in the same grower’s section in the same column are significantly different at *P*<0.05.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GROWER** | **SOIL** | **β-glucosidase** | **Dehydrogenase** | **pH** | **EC** | **CEC** | **NO3-N** | **NH4-N** | **Olsen P** | **K** | **S** | **Al** | **Cd** |
|  |  | ρ-nitrophenol g-1 soil hr-1 | µg g-1 soil hour-1 | 1:1  water:soil | µs cm-3 | meq 100g-1 | mg kg-1 | | | | | | |
| **Bailey** | **Direct seed** | 11.2 b | 0.9 b | 6.2 a | 132.7 b | 19.3 a | 35.2 a | 6.0 b | 18.4 b | 366.4 b | 9.6 a | 3.9 a | 0.04 a |
|  | **Undisturbed** | 26.1 a | 2.1 a | 6.7 a | 228.0 a | 16.1 a | 54.2 a | 56.5 a | 47.7 a | 1156.0 a | 13.3 a | 1.4 a | 0.03 a |
| **Cochran** | **Direct seed** | 13.3 b | 0.8 b | 6.1 b | 71.2 b | 21.8 a | 32.9 b | 9.4 b | 17.1 b | 330.1 b | 12.8 b | 7.1 a | 0.05 a |
|  | **Undisturbed** | 24.1 a | 2.9 a | 6.5 a | 191.6 a | 17.0 b | 56.6 a | 28.3 a | 58.3 a | 915.3 a | 21.5 a | 0.6 a | 0.05 a |
| **Hutchens** | **Direct seed** | 19.0 b | 1.0 b | 5.2 b | 139.0 b | 17.1 a | 55.7 a | 5.4 b | 50.6 a | 692.2 a | 24.7 a | 17.3 a | 0.09 a |
|  | **Undisturbed** | 33.8 a | 4.1 a | 6.4 a | 315.3 a | 17.8 a | 118.7 a | 35.0 a | 48.0 a | 928.7 a | 17.2 b | 1.2 b | 0.06 b |
| **Jensen** | **Direct seed** | 16.0 a | 0.5 b | 5.3 b | 102.7 a | 21.0 b | 47.6 a | 20.9 a | 26.9 b | 310.6 b | 24.0 a | 10.3 a | 0.09 a |
|  | **Undisturbed** | 20.4 a | 2.2 a | 6.5 a | 71.8 b | 24.4 a | 10.7 b | 6.1 b | 59.7 a | 521.2 a | 24.0 a | 0.6 b | 0.05 b |
| **Juris** | **Direct seed** | 12.8 a | 1.2 b | 5.8 b | 114.2 b | 12.2 a | 30.4 a | 3.2 b | 34.3 b | 307.9 b | 9.6 a | 4.6 a | 0.04 a |
|  | **Undisturbed** | 16.3 a | 2.7 a | 7.1 a | 230.7 a | 12.5 a | 55.2 a | 7.5 a | 52.7 a | 517.3 a | 12.1 a | 0.4 a | 0.04 a |
| **Koch** | **Direct seed** | 14.2 a | 1.1 a | 6.7 a | 134.4 a | 8.9 a | 23.9 a | 4.9 a | 22.5 a | 548.2 a | 10.4 a | 2.1 a | 0.04 a |
|  | **Undisturbed** | 8.8 a | 2.0 a | 6.9 a | 79.1 a | 9.3 a | 35.3 a | 3.5 a | 17.2 a | 442.7 a | 7.6 a | 0.7 a | 0.03 b |
| **Odberg** | **Direct seed** | 15.2 a | 2.9 b | 5.3 b | 134.1 a | 17.4 b | 45.4 b | 8.9 a | 27.9 a | 234.9 b | 26.1 a | 25.3 a | 0.06 a |
|  | **Undisturbed** | 25.5 a | 5.9 a | 6.4 a | 177.9 a | 19.1 a | 100.7 a | 13.7 a | 35.2 a | 656.8 a | 25.1 a | 0.8 b | 0.03 b |
| **Schultheis** | **Direct seed** | 16.7 b | 1.1 b | 5.0 b | 257.2 a | 18.6 a | 72.6 a | 7.3 b | 34.1 b | 319.5 b | 39.4 a | 65.1 a | 1.44 a |
|  | **Undisturbed** | 33.0 a | 3.9 a | 6.8 a | 330.7 a | 18.0 a | 100.4 a | 36.2 a | 92.5 a | 1335.7 a | 21.2 b | 1.2 b | 0.72 b |
| **Sheffels** | **Direct seed** | 9.5 a | 2.3 a | 6.6 b | 160.2 b | 11.9 a | 32.6 a | 6.0 a | 25.7 b | 668.2 a | 13.7 a | 10.4 a | 0.06 a |
|  | **Undisturbed** | 14.4 a | 4.2 a | 7.7 a | 295.1 a | 11.2 a | 52.8 a | 7.1 a | 47.2 a | 797.8 a | 12.6 a | 0.24 a | 0.03 b |
| **Stubbs** | **Direct seed** | 20.0 a | 2.0 a | 6.3 b | 167.6 a | 13.3 a | 44.5 a | 4.9 a | 32.2 a | 406.6 a | 17.2 a | 6.1 a | 0.05 a |
|  | **Undisturbed** | 21.1 a | 2.1 a | 7.5 a | 223.0 a | 11.7 b | 45.2 a | 5.2 a | 40.2 a | 544.3 a | 9.7 b | 0.2 a | 0.04 a |
| **Thorn** | **Direct seed** | 15.4 a | 2.2 b | 5.3 b | 114.5 a | 15.5 b | 55.2 a | 4.6 b | 46.9 b | 623.7 a | 18.0 a | 16.3 a | 0.06 a |
|  | **Undisturbed** | 26.8 a | 5.7 a | 6.6 a | 168.3 a | 17.6 a | 73.0 a | 12.2 a | 64.2 a | 805.0 a | 11.5 b | 0.3 a | 0.05 b |
| **Zenner** | **Direct seed** | 18.9 a | 2.5 b | 5.7 b | 97.7 b | 20.4 b | 45.9 a | 6.6 b | 37.8 b | 558.1 a | 23.0 a | 2.6 a | 0.09 a |
|  | **Undisturbed** | 22.7 a | 6.2 a | 7.0 a | 169.6 a | 23.0 a | 56.4 a | 12.9 a | 80.0 a | 708.8 a | 23.0 a | 0 a | 0.06 b |