**Table 3 Summary of Q Statistics and Fail-Safe Numbers for All Indicators**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Factor | Fail-safe  numbers | 5K+10 | K |  |  |  | P value |
| Chao 1 | 3667.7 | 850 | 168 | 205.3156 | 29.2878 | 176.0277 | 0.0003 |
| ACE | 2704.9 | 465 | 91 | 334.1997 | 11.0469 | 323.1529 | 0.2585 |
| Proteobacteria | 17962.6 | 480 | 94 | 102.9422 | 10.2398 | 92.7024 | 0.0123 |
| Acidobacteriota | 98375.3 | 445 | 87 | 57.9008 | 7.3890 | 50.5118 | 0.0138 |
| Bacteroidota | 19500.9 | 490 | 96 | 75.3732 | 2.6735 | 72.6997 | 0.3334 |
| Chloroflexi | 22266.5 | 465 | 91 | 69.8612 | 8.6123 | 61.2489 | 0.0147 |
| Firmicutes | 6074.1 | 355 | 69 | 81.6359 | 3.8731 | 77.7627 | 0.3319 |
| Gemmatimonadota | 49084.4 | 475 | 93 | 83.1573 | 5.0434 | 78.1139 | 0.1106 |
| PH | 15686.5 | 405 | 79 | 262.5287 | 105.7663 | 156.7624 | 0.0001 |
| SOC | 32680.7 | 310 | 60 | 157.4260 | 40.9203 | 116.5057 | 0.0005 |
| AN | 37612.7 | 340 | 66 | 269.0670 | 51.8171 | 217.2499 | 0.0043 |
| AP | 18893.2 | 325 | 63 | 165.6267 | 15.2802 | 150.3466 | 0.1089 |
| AK | 1049.1 | 350 | 68 | 88.4160 | 17.7637 | 70.6523 | 0.0071 |
| Disease incidence | 13712.6 | 285 | 55 | 67.1541 | 12.9374 | 54.2167 | 0.0070 |
| Plant height | 20426.9 | 285 | 55 | 49.5775 | 3.2969 | 46.2806 | 0.2684 |
| Root dry weight | 5509.3 | 245 | 47 | 43.9871 | 13.5296 | 30.4576 | 0.0053 |
| Root fresh weight | 6876.7 | 255 | 49 | 89.6920 | 25.1421 | 64.5499 | 0.0007 |
| Root length | 26883.8 | 265 | 51 | 739.6301 | 71.9656 | 667.6645 | 0.0387 |

Notes: Fail-safe number refers to the number of missing studies needed to bring the overall effect size to non-significance; K: the number of effect sizes included; : the total heterogeneity; : represents between-group heterogeneity; : is within-group heterogeneity.

P value: A significant result (P < 0.05) means that the moderator (e.g., treatment type) explains part of the variation among studies.