**Supplemental Table 1. Changes of dissolved oxygen levels in the deoxygenated stagnant agar nutrient solutions.**

|  |  |  |
| --- | --- | --- |
| Distance from the water surface (cm) | Dissolved oxygen levels (mg/L) |  |
| 0 day \* |  | 3 days \* |  | 7 days \* |  |
| 1 | 0.7 | ± | 0.1 | a | 3.8 | ± | 0.2 | d | 4.9 | ± | 0.1 | d |
| 3 | 0.6 | ± | 0.1 | a | 1.8 | ± | 0.3 | c | 3.7 | ± | 0.4 | c |
| 5 | 0.5 | ± | 0.0 | a | 1.2 | ± | 0.2 | bc | 1.5 | ± | 0.2 | b |
| 7 | 0.4 | ± | 0.1 | a | 0.7 | ± | 0.1 | ab | 0.7 | ± | 0.1 | ab |
| 10 | 0.5 |  | 0.1 | a | 0.5 |  | 0.0 | ab | 0.5 |  | 0.0 | a |
| 15 | 0.4 |  | 0.0 | a | 0.4 |  | 0.0 | a | 0.3 |  | 0.0 | a |

Values show mean ± SE. n = 4. Different superscript letters denote significant differences among concentrations of ethephon treatments (*P* < 0.05, one-way ANOVA and then Tukey HSD test for multiple comparison). After making the stagnant deoxygenated 0.1% agar nutrient solutions in 5-L pot, the solutions were kept in 23oC under dark without plants. Dissolved oxygen levels were measured by dissolved-oxygen meter after finishing deoxidization by N2 gas (0 day), and after 3 days and 7 days after making solutions. \* denotes the days after making solutions.