**Treatment of livestock carcasses in soil using *Corynebacterium glutamicum* andlysosomal application to livestock burial**

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**Table S1**. Weight and circumference of decomposed carcass under anaerobic and aerobic conditions (weight and circumference were measured before decay (0 day) and after decay (30 day) as well as 10 days after treatment with *C. glutamicum* under anaerobic and aerobic conditions. (A) is weight of carcass. (B) is circumference of carcass)

(A)

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition**  **(aerobic)** | **Sample**  **(g)** | **Time (day)** | |
| **0** | **30** |
| **Anaerobic** | **Control** | 32.39 | 25.26 |
| **Treated**  ***C.glutamicum*** | 35.69 | 61.23 |
| **Aerobic** | **Control** | 40.34 | 32.60 |
| **Treated**  ***C.glutamicum*** | 33.92 | 43.29 |

(B)

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition**  **(aerobic)** | **Sample**  **(g)** | **Time (day)** | |
| **0** | **30** |
| **Anaerobic** | **Control** | 4.23 | 4.31 |
| **Treated**  ***C.glutamicum*** | 4.81 | 5.74 |
| **Aerobic** | **Control** | 4.31 | 4.41 |
| **Treated**  ***C.glutamicum*** | 4.55 | 5.98 |

**Table S2.** Weight and circumference of decomposed carcass in the presence or absence of soil (weight and circumference were measured before decay (0 day) and after decay (30 day) as well as 10 days after treatment with *C. glutamicum* in the presence or absence of soil. (A) is weight of carcass. (B) is circumference of carcass)

(A)

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition**  **(aerobic)** | **Sample**  **(g)** | **Time (day)** | |
| **0 d** | **30 d** |
| **Soil** | **Control** | 31.92 | 23.33 |
| **Treated**  ***C.glutamicum*** | 36.72 | 62.41 |
| **No soil** | **Control** | 36.39 | 34.62 |
| **Treated**  ***C.glutamicum*** | 33.62 | 37.83 |

(B)

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition**  **(aerobic)** | **Sample**  **(cm)** | **Time (day)** | |
| **0 d** | **30 d** |
| **Soil** | **Control** | 4.42 | 4.57 |
| **Treated**  ***C.glutamicum*** | 4.11 | 5.28 |
| **No soil** | **Control** | 4.85 | 4.85 |
| **Treated**  ***C.glutamicum*** | 4.88 | 4.89 |

**Table S3.** Weight and circumference of decomposed carcass at different temperatures (weight and circumference were measured before decay (0 day) and after decay (30 day) as well as 10 days after treatment with *C. glutamicum.* (A) is weight of carcass. (B) is circumference of carcass)

(A)

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition**  **(temp.)** | **Sample**  **(g)** | **Time (day)** | |
| **0 d** | **30 d** |
| **4 ℃** | **Control** | 26.49 | 22.40 |
| **Treated**  ***C.glutamicum*** | 23.16 | 25.8 |
| **24 ℃** | **Control** | 24.52 | 11.3 |
| **Treated**  ***C.glutamicum*** | 24.51 | 33.72 |

(B)

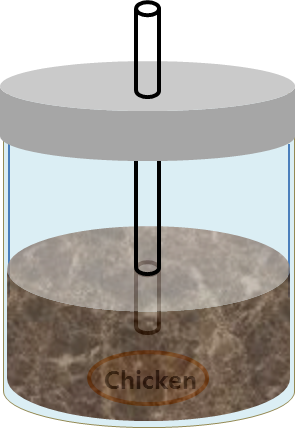
|  |  |  |  |
| --- | --- | --- | --- |
| **Condition**  **(temp.)** | **Sample**  **(cm)** | **Time (day)** | |
| **0 d** | **30 d** |
| **4 ℃** | **Control** | 3.69 | 3.41 |
| **Treated**  ***C.glutamicum*** | 3.47 | 3.32 |
| **24 ℃** | **Control** | 3.53 | 3.64 |
| **Treated**  ***C.glutamicum*** | 3.81 | 4.72 |

**Table S4.** Change of carcass weight and perimeter according to moisture conditions (water percentage is based on culture medium. In this table, the weight of the control group is 27.31 g on day 0 and 19.81 g on day 60. The perimeter is 3.94 cm on day 0 and 3.77 cm on day 60)

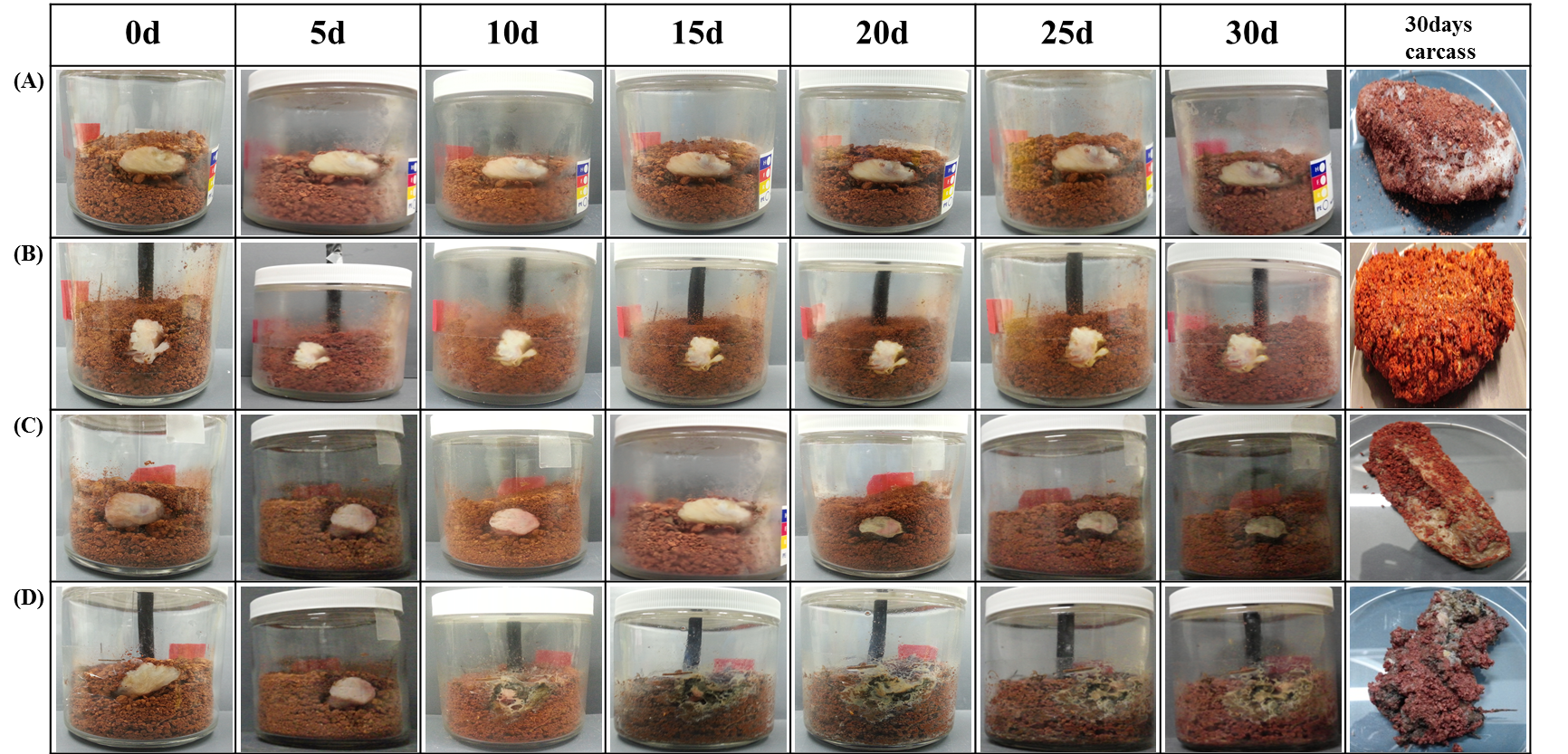
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Treated *C. glutamicum*** | | | |
| **0d** | | **60d** | |
| **Water**  **(%)** | **Weight**  **(g)** | **Perimeter**  **(cm)** | **Weight**  **(g)** | **Perimeter**  **(cm)** |
| **0** | 25.62 | 3.74 | 23.28 | 3.51 |
| **1** | 28.11 | 3.91 | 10.27 | 2.41 |
| **5** | 26.78 | 3.67 | 22.01 | 4.23 |
| **10** | 27.16 | 4.01 | 7.6 | 1.65 |
| **20** | 28.39 | 3.42 | 10.92 | 2.51 |

**Table S5.** After 30 days, changed carcass weight (Control: not treated with anything. Treated: treated with *C. glutamicum*)

|  |  |  |
| --- | --- | --- |
| **Sample**  **(g)** | **Time (day)** | |
| **0 d** | **30 d** |
| **Control** | 24.72 | 15.65 |
| **Treated**  ***C.glutamicum*** | 23.65 | 30.15 |
| **Control** | 25.12 | 14.05 |
| **Treated**  ***C.glutamicum*** | 23.22 | 32.05 |



**Figure S1**



**Figure S2**



**Figure S3**



**Figure S4**