**Supporting Information**

**Long-term changes in soil biological activity and other properties of raised beds in Longan orchards**

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**Caption of Supplementary Table**

**Table S1**

Table S1 Information from 20 orchards collected samples in An Binh commune, Long Ho district, Vinh Long province, Vietnam.

**Table S2**

Table S2 Correlation between raised bed ages and soil physical properties of different Longan orchard soils in Vinh Long, Vietnam.

**Table S3**

Table S3Correlation between raised bed age and chemical parameters of different Longan orchard soils in the Mekong River Delta of Vietnam.

**Table S4**

Table S4Correlation between raised bed age and soil enzyme activities of different Longan orchard soils in the Mekong River Delta of Vietnam.

**Table S1** Information from 20 orchards collected samples in An Binh commune, Long Ho district, Vinh Long province, Vietnam.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sample Code** | **Raised bed age****(years)** | **Longan tree age****(years)** | **Farm area****(m2)** |
| L1 | 15 | 15 | 2500 |
| L2 | 20 | 20 | 2700 |
| L3 | 20 | 20 | 3000 |
| L4 | 20 | 20 | 2000 |
| L5 | 25 | 20 | 7000 |
| L6 | 30 | 15 | 7000 |
| L7 | 30 | 30 | 4000 |
| L8 | 30 | 20 | 4500 |
| L9 | 30 | 30 | 3000 |
| L10 | 30 | 25 | 1500 |
| L11 | 38 | 30 | 2000 |
| L12 | 40 | 15 | 3000 |
| L13 | 43 | 15 | 9000 |
| L14 | 45 | 22 | 10000 |
| L15 | 45 | 15 | 1000 |
| L16 | 50 | 30 | 5000 |
| L17 | 50 | 15 | 22000 |
| L18 | 43 | 53 | 4000 |
| L19 | 55 | 17 | 6000 |
| L20 | 60 | 15 | 1500 |

**Table S2** Correlation between raised bed ages and soil physical properties of different Longan orchard soils in Vinh Long, Vietnam.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Moisture content (%)** | **Bulk density****(g cm -3)** | **Soil porosity****(%)** |
| **Raised bed age** | -0.570\*\* | 0.666\*\* | -0.666\*\* |

*Note: \*\* indicate the correlation coefficients and represent significant differences at p < 0.01, respectively; n =5.*

**Table S3** Correlation between raised bed age and chemical parameters of different Longan orchard soils in the Mekong River Delta of Vietnam.

|  |  |  |
| --- | --- | --- |
|  | **Soil organic matter (%)** | **N total (%)** |
| **Raised bed age** | -0.579\*\* | -0.473\* |

*Note: \* and \*\* indicate the correlation coefficients and represent significant differences at p < 0.05 and p < 0.01, respectively.*

**Table S4** Correlation between raised bed age and soil enzyme activities of different Longan orchard soils in the Mekong River Delta of Vietnam.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **β-Glucosidase****(µg g-1 h-1)** | **Urease****(µg g-1 h-1)** | **Phosphomonoesterase****(µg g-1 h-1)** | **Phytase****(µg g-1 h-1)** |
| **Raised bed age** | -0.452\* | -0.528\* | -0.487\* | -0.467\* |

*Note: \* indicates the correlation coefficients and represent significant differences at p < 0.05, respectively.*