**Table S2. Morphological and biochemical characterisation of bacterial isolates**. Bacterial isolates were grown at 37 °C on nutrient agar for macroscopic and microscopic analysis.

| Origin of isolation | Isolate | Morphological and biochemical characterization |
| --- | --- | --- |
| Size | Form | Elevation | Margin | Opacity | Texture | Color | Gram-stain | Shape | Endospore | Catalase | Amylolytic | Proteolytic | Lipolytic | Cellulolytic |
| Propolis | PD1a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | PD3a | S | Circular | Convex | Entire | Translucent | Moist | White | + | Rod-shaped | + | + | - | - | - | - |
|   | PD4a | S | Circular | Convex | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | - | - | - | - |
|   | PD5a | M | Circular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | - | + | + | + |
|   | PD6a | M | Circular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | - | + | + | + |
|   | PD7a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | PD9a | L | Umbonate | Convex | Entire | Opaque | Viscid | White | + | Rod-shaped | + | + | + | + | + | + |
|   | PD10a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | \*PD12a | S | Circular | Convex | Entire | Translucent | Moist | Yellowish | - | Rod-shaped | - | + | - | - | - | + |
|   | PD13a | M | Irregular | Raised | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | PD14a | S | Circular | Convex | Entire | Translucent | Moist | White | + | Rod-shaped | + | + | - | - | - | - |
|   | PD16a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | \*PG1b | S | Circular | Convex | Entire | Translucent | Moist | Yellowish | - | Rod-shaped | - | + | - | - | - | + |
|   | PM1c | M | Circular | Raised | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | PM2c | M | Circular | Raised | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | PM3c | M | Circular | Raised | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | \*PM4c | S | Circular | Convex | Entire | Translucent | Moist | Yellowish | - | Rod-shaped | - | + | - | + | - | + |
|   | PU1d | L | Umbonate | Convex | Entire | Opaque | Viscid | White | + | Rod-shaped | + | + | + | + | + | + |
| Bee bread | BD1a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BD2a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BD3a | M | Irregular | Flat | Entire | Opaque | Dry | White | + | Rod-shaped | + | + | - | + | + | + |
|   | BD4a | S | Circular | Convex | Entire | Opaque | Moist | Whitish-yellow | + | Rod-shaped | + | + | - | - | + | + |
|   | BD5a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BD6a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BD7a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BD8a | M | Circular | Raised | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | - |
|   | BD9a | M | Circular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | - | + | + | + |
|   | \*BG1b | S | Irregular | Raised | Entire | Opaque | Dry | Yellowish | + | Filamentous | + | + | - | - | - | + |
|   | BM1c | M | Circular | Raised | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BM2c | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BM3c | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | BM4c | S | Circular | Convex | Entire | Opaque | Moist | Whitish-yellow | + | Rod-shaped | + | + | - | + | - | + |
| Honey | HD1a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HD2a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HD3a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HD4a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HD7a | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HM1c | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HM2c | M | Irregular | Flat | Entire | Opaque | Dry | White | + | Rod-shaped | + | + | + | + | - | - |
|   | HU1d | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
|   | HU2d | M | Irregular | Flat | Entire | Opaque | Moist | White | + | Rod-shaped | + | + | + | + | - | + |
| a Yayasan Al-Jenderami b Ladang nangka PASFAc Giant B Farmd Ladang 10 UPM\*Not screened as *Bacillus* spp.S : small (2-3 mm), M : medium (4-5 mm), L : large (> 5 mm), + : positive, - : negative |