Table A. Variation sites in DNA sequences for different haplotype of mitochondrial COI of *Bactrocera* species from various localities.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variation sites in DNA sequences** | **Haplotypes** | **Variation sites in DNA sequences** | **Haplotypes** | **Variation sites in DNA sequences** | **Haplotypes** |
| **C1** | **C2** | **C3** | **C4** | **C1** | **C2** | **C3** | **C4** | **C1** | **C2** | **C3** | **C4** |
| **9** | T | C | T | T | **180** | T | C | T | T | **481** | T | C | T | T |
| **84** | T | A | T | T | **216** | C | A | C | C | **483** | A | T | A | A |
| **96** | T | C | T | T | **234** | C | C | C | T | **489** | C | T | C | C |
| **99** | C | T | C | C | **288** | T | C | T | T | **499** | T | C | T | T |
| **102** | T | C | T | T | **321** | A | G | A | A | **546** | T | C | T | T |
| **108** | T | A | T | T | **325** | T | C | T | T | **549** | C | T | T | T |
| **117** | A | G | A | A | **366** | C | T | C | C | **588** | C | T | C | C |
| **120** | C | A | C | C | **372** | C | T | C | C | **594** | T | G | T | T |
| **129** | T | C | T | T | **399** | A | G | A | A | **600** | A | C | A | A |
| **136** | C | T | C | C | **417** | T | C | T | C | **606** | C | T | C | C |
| **147** | A | A | A | G | **429** | C | C | C | T | **615** | T | A | T | T |
| **153** | A | T | A | A | **438** | T | C | T | T | **619** | C | T | C | C |
| **168** | A | G | A | A | **450** | C | T | T | C |  |  |  |  |  |

Table B. Variation sites in DNA sequences for different haplotype of mitochondrial COII of *Bactrocera* species from various localities.

|  |  |  |  |
| --- | --- | --- | --- |
| **Variation sites in DNA sequences** | **Haplotypes** | **Variation sites in DNA sequences** | **Haplotypes** |
| **D1** | **D2** | **D3** | **D4** | **D5** | **D6** | **D7** | **D8** | **D1** | **D2** | **D3** | **D4** | **D5** | **D6** | **D7** | **D8** |
| **12** | A | T | T | A | **A** | **T** | **T** | **T** | **200** | C | C | T | C | C | C | C | T |
| **13** | - | - | - | A | **-** | **-** | **-** | **-** | **203** | A | A | T | A | A | A | A | T |
| **38** | T | T | C | T | **T** | **T** | **T** | **C** | **209** | C | C | T | C | C | C | C | T |
| **44** | T | T | C | T | **T** | **T** | **T** | **C** | **232** | G | G | A | G | G | G | G | A |
| **51** | G | G | A | G | **G** | **G** | **G** | **A** | **277** | C | C | TT | C | C | C | C | T |
| **53** | T | T | C | T | **T** | **T** | **T** | **C** | **294** | T | T | C | T | T | T | T | C |
| **83** | T | T | C | T | **T** | **T** | **T** | **C** | **295** | C | C | T | C | C | C | C | T |
| **119** | C | C | T | C | **C** | **C** | **C** | **T** | **324** | G | G | G | G | A | G | G | G |
| **122** | T | T | C | T | **T** | **C** | **C** | **C** | **331** | - | - | A | - | A | - | - | A |
| **158** | C | C | C | C | **T** | **C** | **C** | **C** | **332** | - | - | A | - | A | - | - | - |
| **161** | A | A | A | A | **G** | **A** | **A** | **A** | **342** | - | - | - | - | G | - | - | - |
| **173** | C | C | T | C | **C** | **C** | **C** | **T** | **343** | - | - | - | - | T | - | - | - |
| **185** | T | T | C | T | **T** | **T** | **T** | **C** |  |  |  |  |  |  |  |  |  |

Table C. Variation sites in DNA sequences of *Bactrocera* species for mitochondrial 16S rDNA from various localities. (Source: Lim et al. 2012)

|  |  |  |  |
| --- | --- | --- | --- |
| **Variation sites in DNA sequences** | **Haplotypes** | **Variation sites in DNA sequences** | **Haplotypes** |
| **R1** | **R2** | **R3** | **R1** | **R2** | **R3** |
| **23** | C | A | C | **213** | A | A | G |
| **30** | A | A | G | **260** | G | G | T |
| **151** | G | G | A | **325** | C | C | A |
| **160** | C | C | T | **326** | T | T | C |
| **161** | A | A | C | **398** | C | C | T |
| **187** | C | C | T | **420** | T | T | C |
| **206** | A | A | G |  |  |  |  |

Table D. Variation sites in DNA sequences of *Bactrocera* species for 28S rDNA from various localities.

|  |  |
| --- | --- |
| **Variation site on DNA sequence** | **Haplotypes** |
| **E1** | **E2** |
| **801** | T | - |
| **807** | G | - |

Table E. Variation sites in DNA sequences of *Bactrocera* species for ITS-2 from various localities.

|  |  |
| --- | --- |
| **Variation site on DNA sequence** | **Haplotypes** |
| **I1** | **I2** |
| **324** | A | G |

Table F. Percentage of uncorrected “p” distance matrix of *Bactocera caudata* from various geographical locations in northern and southern hemispheres based on COI.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| JN542419 | *B. caudata* |Bali, Indonesia | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| JN542418 | *B. caudata* |Lombok, Indonesia | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau29 | *B. caudata* IJava, Indonesia | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau30 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau13 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau31 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau17 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| JN542417 | *B. caudata* | University Malaya, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| JN542416 | *B. caudata* | Carey Island, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AF423109 | *B. caudata* | ‘Thailand’ | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau19 | *B. caudata* | Penang | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau9 | *B. caudata* | Mentakab, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau11 | *B. caudata* | Carey Island, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau7 | *B. caudata* | Terengganu, Marang | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau5 | *B. caudata* | Clearwater, , P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau8 | *B. caudata* | Clearwater, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau4 | *B. caudata* | Perak, Clearwater | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau23 | *B. caudata* | University Malaya, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau26 | *B. caudata* | Gombak, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau28 | *B. caudata* | Sabah, Semporna | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau3 | *B. caudata* | Clearwater, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau10 | *B. caudata* | Clearwater, , P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau27 | *B. caudata* | Selakan, Sabah, E. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau32 | *B. caudata* | Jemaluang, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |
| Bcau21 | *B. caudata* | Penang, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |
| Bcau20 | *B. caudata* | Penang, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |
| Bcau16 | *B. caudata* | Gombak, , P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |
| Bcau18 | *B. caudata* | University Malaya, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |
| Bcau22 | *B. caudata* | Tioman Island, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |
| Bcau1 | *B. caudata* | University Malaya, P. Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |
| FJ903493 | *B. caudata* | Malaysia | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |
| GQ458048 | *B. caudata* | Chongqing, China | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 5.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |
| Bcau24 | *B. caudata* | Tioman Island, P. Malaysia | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | - |  |  |
| Bcau25 | *B. caudata* | Korat, Thailand | 6.12 | 6.12 | 6.12 | 6.12 | 6.12 | 6.12 | 6.12 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.94 | - |  |

Table G. Percentage of uncorrected “p” distance matrix of *Bactocera caudata* from various geographical locations in northern and southern hemispheres based on COII.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| Bcau13 | *B. caudata* | Lombok, Indonesia | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau15 | *B. caudata* | Bali, Indonesia | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau31 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau12 | *B. caudata* | Lombok Indonesia | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau29 | *B. caudata |* Java, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau17 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau30 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau23 | *B. caudata* | University Malaya, P. Malaysia | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 | 4.66 | 4.67 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau22 | *B. caudata* | Tioman Island, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau32 | *B. caudata* | Jemaluang, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau5 | *B. caudata* | Clearwater, , P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | -- | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau1 | *B. caudata* | University Malaya, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau21 | *B. caudata* | Penang, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau16 | *B. caudata* | Gombak, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau27 | *B. caudata* | Selakan, E. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau26 | *B. caudata* | Gombak, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau28 | *B. caudata* | Sabah, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau19 | *B. caudata* | Penang, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau18 | *B. caudata* | University Malaya, P. Malaysia | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.67 | 4.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau25 | *B. caudata* | Korat, Thailand | 5.48 | 5.48 | 5.48 | 5.48 | 5.48 | 5.48 | 5.50 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau14 | *B. caudata* | Carey Island, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | - |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau20 | *B. caudata* | Penang, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |
| Bcau4 | *B. caudata* | Clearwater, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |
| Bcau9 | *B. caudata* | Pahang, Mentakab | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |
| Bcau8 | *B. caudata* | Clearwater, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |
| Bcau11 | *B. caudata* | Carey Island, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |
| Bcau10 | *B. caudata* | Clearwater, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |
| Bcau2 | *B. caudata* | University Malaya, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |
| Bcau3 | *B. caudata* | Clearwater, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |
| Bcau7 | *B. caudata* | Marang, P. Malaysia | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.39 | 4.40 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |
| Bcau24 | *B. caudata* | Tioman Island, P. Malaysia | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 | 4.13 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 1.38 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | - |  |  |
| AY037406 | *B. caudata* | Bandar Seri Begawan, Brunei | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 | 4.41 | 4.42 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 1.66 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.28 | - |  |

Table H. Percentage of uncorrected “p” distance matrix of *Bactocera caudata* from various geographical locations in northern and southern hemispheres based on 16SrDNA.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| JN542425 | *B. caudata* | Bali, Indonesia | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| JN542424 | *B. caudata* | Lombok, Indonesia | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau17 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau31 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau30 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau13 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau29 | *B. caudata |* Java, Indonesia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| JN542422 | *B. caudata* | Carey Island, P. Malaysia | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | 2.99 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| AY037363 | *B. caudata* | Bandar Seri Begawan, Brunei | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| JN542423 | *B. caudata* | University Malaya, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau11 | *B. caudata* | Carey Island, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau9 | *B. caudata* | Mentakab, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau7 | *B. caudata* | Marang, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau19 | *B. caudata* | Penang, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau8 | *B. caudata* | Clearwater, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau5 | *B. caudata* | Clearwater, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau1 | *B. caudata* | University Malaya, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau16 | *B. caudata* | Gombak, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau27 | *B. caudata* | Selakan, E. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau10 | *B. caudata* | Clearwater, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau24 | *B. caudata* | Tioman Island, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |   |
| Bcau20 | *B. caudata* | Penang, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |   |
| Bcau18 | *B. caudata* | University Malaya, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |   |
| Bcau25 | *B. caudata* | Korat, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |   |
| Bcau4 | *B. caudata* | Clearwater, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |   |
| Bcau21 | *B. caudata* | Penang, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |   |
| Bcau22 | *B. caudata* | Tioman Island, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |   |
| Bcau28 | *B. caudata* | Semporna, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |   |
| Bcau3 | *B. caudata* | Clearwater, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |   |
| Bcau23 | *B. caudata* | University Malaya, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |   |
| Bcau26 | *B. caudata* | Gombak, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |   |
| Bcau32 | *B. caudata* | Jemaluang, P. Malaysia | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |   |

Table I. Percentage of uncorrected “p” distance matrix of *Bactocera caudata* from various geographical locations in northern and southern hemispheres based on 28S rDNA.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| Bcau16 | *B. caudata* | Gombak, P. Malaysia | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau19 | *B. caudata* | Penang, P. Malaysia | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau14 | *B. caudata* | Carey Island P. Malaysia | 0.12 | 0.12 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau4 | *B. caudata* | Clearwater P. Malaysia | 0.12 | 0.12 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau23 | *B. caudata* | University Malaya P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau24 | *B. caudata* | Tioman Island P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau17 | *B. caudata* | Lombok, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau11 | *B. caudata* | Carey Island P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau28 | *B. caudata* | Semporna, E. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau27 | *B. caudata* | Sabah, East Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau22 | *B. caudata* | Tioman Island, East Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau21 | *B. caudata* | Penang P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau9 | *B. caudata* | Mentakab, P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau15 | *B. caudata* |Bali, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau31 | *B. caudata* | Java, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau30 | *B. caudata* | Java, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau6 | *B. caudata* | Lombok, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau32 | *B. caudata* | Jemaluang P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau20 | *B. caudata* | Penang P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau5 | *B. caudata* | Clearwater P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau8 | *B. caudata* | Clearwater P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau1 | *B. caudata* | University Malaya P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |
| Bcau10 | *B. caudata* | Clearwater P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |
| Bcau13 | *B. caudata* | Lombok, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |
| Bcau7 | *B. caudata* | Marang P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |
| Bcau2 | *B. caudata* | University Malaya P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |
| Bcau3 | *B. caudata* | Clearwater P. Malaysia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |
| Bcau25 | *B. caudata* | Korat, Thailand | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |
| Bcau29 | *B. caudata |* Java, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |
| Bcau12 | *B. caudata* | Lombok, Indonesia | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |
| Btau28 | *B. tau* | University Malaya P. Malaysia | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | - |  |  |
| Bcau26 | *B. caudata* | Gombak P. Malaysia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | - |  |
| Bcau18 | *B. caudata* | University Malaya P. Malaysia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | - |

Table J. Percentage of uncorrected “p” distance matrix of *Bactocera caudata* from various geographical locations in northern and southern hemispheres based on ITS-2.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| Bcau26 | *B. “caudata”* | Gombak, P.Malaysia | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau32 | *B. “caudata”* | Jemaluang, P. Malaysia | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau11 | *B. “caudata”* | Carey Island, P.Malaysia | 0.23 | 0.23 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau16 | *B. “caudata”* | Gombak, P.Malaysia | 0.23 | 0.23 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau22 | *B. “caudata”* | Tioman Island, P.Malaysia | 0.23 | 0.23 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau3 | *B. “caudata”* | Clearwater, P.Malaysia | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau20 | *B. “caudata”* | Penang, P.Malaysia | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau14 | *B. “caudata”* | Carey Island, P.Malaysia | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau24 | *B. “caudata”* | Tioman Island, P.Malaysia | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau21 | *B. “caudata”* | Penang, P.Malaysia | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau25 | *B. “caudata”* | Korat, Thailand | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau10 | *B. “caudata”* | Clearwater, P.Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau2 | *B. “caudata”* | University Malaya, P.Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau8 | *B. “caudata”* | Clearwater, P.Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau17 | *B. caudata* |Lombok, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau18 | *B. “caudata”* | University Malaya Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau27 | *B. “caudata”* | Selakan, East Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau12 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau15 | *B. caudata* | Bali, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau30 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |  |
| Bcau31 | *B. caudata* | Java, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |  |
| Bcau13 | *B. caudata* | Lombok, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |  |
| Bcau29 | *B. caudata |* Java, Indonesia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |  |
| Bcau1 | *B. “caudata”* | University Malaya, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |  |
| Bcau5 | *B. “caudata”* | Clearwater, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |  |
| Bcau23 | *B. “caudata”* | University Malaya, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |  |
| Bcau9 | *B. “caudata”* | Mentakab, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |  |
| Bcau19 | *B. “caudata”* | Penang, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |  |
| Bcau4 | *B. “caudata”* | Clearwater, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |  |
| Bcau28 | *B. “caudata”* | Semporna, E. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |  |
| Bcau7 | *B. “caudata”* | Marang, P. Malaysia | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |  |