

Table S1. *Trichoderma* species isolated and identified from major coffee growing zones of Ethiopia

| <i>Trichoderma</i> species | Jimma | Kaffa | Bench Maji | Shaka | Buno Bedele | West Wollega | West Guji | Gedio | Sidama | Bale | Total isolates |
|----------------------------|-----------|-----------|------------|-----------|-------------|--------------|-----------|----------|-----------|----------|----------------|
| Soil samples | 25 | 20 | 23 | 18 | 16 | 14 | 17 | 16 | 21 | 14 | 184 |
| <i>T. asperellum</i> | 16 | 4 | 6 | 9 | 3 | 9 | 8 | 2 | 5 | 2 | 64 |
| <i>T. asperelloides</i> | 13 | 2 | 5 | 5 | 1 | 2 | 1 | | 1 | 2 | 32 |
| <i>T. longibrachiatum</i> | 4 | 0 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 20 |
| <i>T. harzianum</i> | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| <i>T. aethiopicum</i> | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 6 |
| <i>T. citrinoviride</i> | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| <i>T. hamatum</i> | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 6 |
| <i>T. reesei</i> | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| <i>T. viride</i> | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| <i>T. bissettii</i> | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 3 |
| <i>T. brevicompactum</i> | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| <i>T. erinaceum</i> | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| <i>T. gamsii</i> | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| <i>T. koningiopsis</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| <i>T. orientale</i> | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| <i>T. paratroviride</i> | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Non- identified | 1 | 2 | 1 | 2 | 1 | 1 | 0 | 3 | 0 | 0 | 0 |
| Total | 48 | 17 | 22 | 27 | 6 | 14 | 13 | 8 | 11 | 9 | 175 |

Table S2. Identification, origin, and isolation details of *Trichoderma* isolates

| Isolate ID | Taxa | District (Woreda) | Zone | Coffee Ecosystem |
|------------|---------------------------|-------------------|-----------|------------------|
| AU1 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU2 | <i>T. hamatum</i> | Gera | Jimma | Semi forest |
| AU3 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU4 | <i>T. citrinoviride</i> | Gera | Jimma | Semi forest |
| AU5 | <i>T. asperelloides</i> | Gera | Jimma | Semi forest |
| AU6 | <i>T. reesei</i> | Melko | Jimma | Semi forest |
| AU7 | <i>T. koningiopsis</i> | Gera | Jimma | Semi forest |
| AU8 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU9 | <i>T. longibrachiatum</i> | Yeki | Jimma | Semi forest |
| AU10 | <i>T. aethiopicum</i> | Gera | Jimma | Semi forest |
| AU11 | <i>T. asperelloides</i> | Gera | Jimma | Semi forest |
| AU12 | <i>T. aethiopicum</i> | Gera | Jimma | Semi forest |
| AU13 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU14 | <i>T. longibrachiatum</i> | Yeki | Shaka | Semi forest |
| AU15 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU16 | <i>T. harzianum</i> | Gera | Jimma | Semi forest |
| AU17 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU18 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU19 | <i>T. citrinoviride</i> | Gera | Jimma | Semi forest |
| AU20 | <i>T. asperellum</i> | Limmu Saka | Jimma | Semi forest |
| AU21 | <i>T. asperellum</i> | Gera | Jimma | Semi forest |
| AU22 | <i>T. asperellum</i> | Yeki | Shaka | Semi forest |
| AU23 | <i>T. viride</i> | Gera | Jimma | Semi forest |
| AU24 | <i>T. orientale</i> | Odo Shakiso | West Guji | Garden Coffee |
| AU25 | <i>T. asperellum</i> | Odo Shakiso | West Guji | Garden Coffee |
| AU26 | <i>T. asperellum</i> | Odo Shakiso | West Guji | Garden Coffee |
| AU27 | <i>T. asperellum</i> | Odo Shakiso | West Guji | Garden Coffee |
| AU28 | <i>T. asperelloides</i> | Gera | Jimma | Garden Coffee |
| AU29 | <i>T. asperelloides</i> | Gera | Jimma | Garden Coffee |
| AU30 | <i>T. hamatum</i> | Shebedino | Sidama | Garden Coffee |

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|------|---------------------------|--------------|--------------|---------------|
| AU31 | <i>T. asperellum</i> | Shebedino | Sidama | Garden Coffee |
| AU32 | <i>T. longibrachiatum</i> | Gera | Jimma | Garden Coffee |
| AU33 | <i>T. asperellum</i> | Shebedino | Sidama | Garden Coffee |
| AU34 | <i>T. asperelloides</i> | Yeki | Shaka | Forest |
| AU35 | <i>T. asperellum</i> | Yeki | Shaka | Forest |
| AU36 | <i>T. longibrachiatum</i> | Melko | Jimma | Forest |
| AU37 | <i>T. erinaceum</i> | Gera | Jimma | Forest |
| AU38 | <i>T. asperellum</i> | Yeki | Shaka | Forest |
| AU39 | <i>T. asperellum</i> | Gimbo | Kaffa | Forest |
| AU40 | <i>T. longibrachiatum</i> | Gomma | Jimma | Forest |
| AU41 | <i>T. brevicompactum</i> | Yeki | Shaka | Forest |
| AU42 | <i>T. asperellum</i> | Gomma | Jimma | Forest |
| AU43 | <i>T. asperellum</i> | Haru | West Wollega | Forest |
| AU44 | <i>T. asperellum</i> | Gomma | Jimma | Forest |
| AU45 | <i>T. asperelloides</i> | Gomma | Jimma | Forest |
| AU46 | <i>T. asperellum</i> | Gomma | Jimma | Forest |
| AU47 | <i>T. asperelloides</i> | Chena | Kaffa | Forest |
| AU48 | <i>T. koningiopsis</i> | Yeki | Shaka | Forest |
| AU49 | <i>T. longibrachiatum</i> | Andaracha | Shaka | Forest |
| AU50 | <i>T. asperellum</i> | Andaracha | Shaka | Forest |
| AU51 | <i>T. hamatum</i> | Andaracha | Shaka | Forest |
| AU52 | <i>T. asperellum</i> | Andaracha | Shaka | Forest |
| AU53 | <i>T. asperellum</i> | Andaracha | Shaka | Forest |
| AU54 | <i>T. asperellum</i> | Mena | Jimma | Semi forest |
| AU55 | <i>T. asperelloides</i> | Mena | Jimma | Semi forest |
| AU56 | <i>Non identified</i> | Gewata | Kaffa | Forest |
| AU57 | <i>T. asperelloides</i> | Mena | Jimma | Semi forest |
| AU58 | <i>T. erinaceum</i> | Gewata | Kaffa | Forest |
| AU59 | <i>T. bissettii</i> | Aleta Wondo | Sidama | Garden Coffee |
| AU60 | <i>T. longibrachiatum</i> | Aleta Wondo | Sidama | Garden Coffee |
| AU61 | <i>T. asperelloides</i> | Gomma | Kaffa | Garden Coffee |
| AU62 | <i>T. asperellum</i> | Jarso | West Wollega | Garden Coffee |
| AU63 | <i>T. asperellum</i> | Jarso | West Wollega | Garden Coffee |
| AU64 | <i>Non identified</i> | Yirga cheffe | Gedeo | Garden Coffee |
| AU65 | <i>Non identified</i> | Yirga cheffe | Gedeo | Garden Coffee |
| AU66 | <i>Non identified</i> | Yirga cheffe | Gedeo | Garden Coffee |
| AU67 | <i>T. longibrachiatum</i> | Aleta Wondo | Sidama | Garden Coffee |
| AU68 | <i>T. asperellum</i> | Yirga cheffe | Gedeo | Garden Coffee |
| AU69 | <i>T. asperellum</i> | Wonago | Gedeo | Garden Coffee |
| AU70 | <i>T. koningiopsis</i> | Wonago | Gedeo | Garden Coffee |
| AU71 | <i>T. asperelloides</i> | Yirga cheffe | Sidama | Semi forest |
| AU72 | <i>T. longibrachiatum</i> | Yirga cheffe | Gedeo | Semi forest |
| AU73 | <i>T. asperellum</i> | Gewata | Kaffa | Semi forest |
| AU74 | <i>T. asperellum</i> | Aleta Wondo | Sidama | Semi forest |
| AU75 | <i>T. asperellum</i> | Dale | Sidama | Garden |
| AU76 | <i>T. asperellum</i> | Dale | Sidama | Garden |
| AU77 | <i>T. orientale</i> | Dale | Sidama | Garden |
| AU78 | <i>T. harzianum</i> | Gimbo | Kaffa | Forest |
| AU79 | <i>T. viride</i> | Gimbo | Kaffa | Forest |
| AU80 | <i>T. asperellum</i> | Haru | West Wollega | Forest |
| AU81 | <i>T. asperellum</i> | Haru | West Wollega | Forest |
| AU82 | <i>T. asperellum</i> | Sheko | Benchi Maji | Forest |
| AU83 | <i>T. asperellum</i> | Sheko | Benchi Maji | Forest |
| AU84 | <i>T. harzianum</i> | Sheko | Benchi Maji | Forest |
| AU85 | <i>T. asperelloides</i> | Sheko | Benchi Maji | Forest |
| AU86 | <i>T. gamsii</i> | Sheko | Benchi Maji | Forest |

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|-------|---------------------------|---------------|-------------|---------------|
| AU87 | <i>T. harzianum</i> | Gera | Jimma | Forest |
| AU88 | <i>T. harzianum</i> | Gera | Jimma | Forest |
| AU89 | <i>T. asperelloides</i> | Gera | Jimma | Semi forest |
| AU90 | <i>T. viride</i> | Chena | Kaffa | Forest |
| AU91 | <i>T. asperellum</i> | Chena | Kaffa | Forest |
| AU92 | <i>T. brevicompactum</i> | Chena | Kaffa | Forest |
| AU93 | <i>T. reesei</i> | Chena | Kaffa | Semi forest |
| AU94 | <i>T. aethiopicum</i> | Chena | Kaffa | Semi forest |
| AU95 | <i>T. asperellum</i> | Limmu Saka | Jimma | Semi forest |
| AU96 | <i>T. asperellum</i> | Limmu Saka | Jimma | Semi forest |
| AU97 | <i>T. asperellum</i> | Limmu Saka | Jimma | Garden Coffee |
| AU98 | <i>T. asperelloides</i> | Limmu Saka | Jimma | Garden Coffee |
| AU99 | <i>T. asperelloides</i> | Limmu Saka | Jimma | Garden Coffee |
| AU100 | <i>T. asperellum</i> | Limmu Saka | Jimma | Garden Coffee |
| AU101 | <i>Non identified</i> | Limmu Saka | Jimma | Semi forest |
| AU102 | <i>T. hamatum</i> | Yeki | Shaka | Semi forest |
| AU103 | <i>T. asperelloides</i> | Limmu Saka | Jimma | Semi forest |
| AU104 | <i>T. asperellum</i> | Geisha | Kaffa | Forest |
| AU105 | <i>T. harzianum</i> | Geisha | Kaffa | Forest |
| AU106 | <i>T. aethiopicum</i> | Geisha | Kaffa | Forest |
| AU107 | <i>Non identified</i> | Geisha | Kaffa | Forest |
| AU108 | <i>T. asperelloides</i> | Yeki | Shaka | Semi forest |
| AU109 | <i>T. bissettii</i> | Yeki | Shaka | Semi forest |
| AU110 | <i>T. asperellum</i> | Yeki | Shaka | Semi forest |
| AU111 | <i>Non identified</i> | Yeki | Shaka | Semi forest |
| AU112 | <i>T. viride</i> | Yeki | Shaka | Garden Coffee |
| AU113 | <i>T. asperellum</i> | Yeki | Shaka | Garden Coffee |
| AU114 | <i>T. longibrachiatum</i> | Yeki | Shaka | Garden Coffee |
| AU115 | <i>T. asperellum</i> | Yeki | Shaka | Garden Coffee |
| AU116 | <i>T. citrinoviride</i> | Yeki | Shaka | Semi forest |
| AU117 | <i>Non identified</i> | Yeki | Shaka | Semi forest |
| AU118 | <i>T. asperelloides</i> | Limmu Saka | Jimma | Semi forest |
| AU119 | <i>T. asperelloides</i> | Yeki | Shaka | Semi forest |
| AU120 | <i>T. asperelloides</i> | Yeki | Shaka | Semi forest |
| AU121 | <i>T. longibrachiatum</i> | Sheko | Benchi Maji | Semi forest |
| AU122 | <i>T. asperelloides</i> | Yeki | Shaka | Semi forest |
| AU123 | <i>T. paratroviride</i> | Limmu Saka | Jimma | Semi forest |
| AU124 | <i>T. asperelloides</i> | Gera | Jimma | Semi forest |
| AU125 | <i>T. longibrachiatum</i> | Yayu | Buno Bedele | Forest |
| AU126 | <i>T. asperellum</i> | Yayu | Buno Bedele | Forest |
| AU127 | <i>Non identified</i> | Yayu | Buno Bedele | Forest |
| AU128 | <i>T. asperellum</i> | Yayu | Buno Bedele | Forest |
| AU129 | <i>T. asperellum</i> | Yayu | Buno Bedele | Forest |
| AU130 | <i>T. asperellum</i> | Uruga | West Guji | Garden Coffee |
| AU131 | <i>T. asperellum</i> | Gera | Jimma | Forest Coffee |
| AU132 | <i>T. hamatum</i> | Yirga cheffe | Gedeo | Garden Coffee |
| AU133 | <i>T. asperellum</i> | Sheko | Benchi Maji | Semi forest |
| AU134 | <i>T. asperelloides</i> | Sheko | Benchi Maji | Semi forest |
| AU135 | <i>T. asperelloides</i> | Sheko | Benchi Maji | Semi forest |
| AU136 | <i>T. longibrachiatum</i> | Sheko | Benchi Maji | Forest |
| AU137 | <i>T. asperellum</i> | Sheko | Benchi Maji | Forest |
| AU138 | <i>T. longibrachiatum</i> | Semien Benchi | Benchi Maji | semi forest |
| AU139 | <i>T. asperellum</i> | Semein Benchi | Benchi Maji | semi forest |
| AU140 | <i>T. longibrachiatum</i> | Semein Benchi | Benchi Maji | semi forest |
| AU141 | <i>T. longibrachiatum</i> | Semein Benchi | Benchi Maji | semi forest |
| AU142 | <i>T. asperellum</i> | Sheko | Benchi Maji | semi forest |

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|-------|---------------------------|---------------|--------------|---------------|
| AU143 | <i>T. longibrachiatum</i> | Sheko | Benchi Maji | semi forest |
| AU144 | <i>T. asperelloides</i> | Sheko | Benchi Maji | Forest |
| AU145 | <i>T. reesei</i> | Sheko | Benchi Maji | Forest |
| AU146 | <i>T. asperelloides</i> | Sheko | Benchi Maji | Forest |
| AU147 | <i>Non identified</i> | Sheko | Benchi Maji | Forest |
| AU148 | <i>T. asperelloides</i> | Haru | West Wollega | Forest |
| AU149 | <i>T. asperelloides</i> | Haru | West Wollega | Semi forest |
| AU150 | <i>T. gamsii</i> | Haru | West Wollega | Semi forest |
| AU151 | <i>Non identified</i> | Haru | West Wollega | Semi forest |
| AU152 | <i>T. longibrachiatum</i> | Limmu Saka | Jimma | Semi forest |
| AU153 | <i>T. asperellum</i> | Delo Mena | Bale | Forest |
| AU154 | <i>T. harzianum</i> | Delo Mena | Bale | Forest |
| AU155 | <i>T. asperelloides</i> | Delo Mena | Bale | Forest |
| AU156 | <i>T. asperelloides</i> | Delo Mena | Bale | Forest |
| AU157 | <i>T. aethiopicum</i> | Berberere | Bale | Forest |
| AU158 | <i>T. longibrachiatum</i> | Yeki | Sheka | Forest |
| AU159 | <i>T. brevicompactum</i> | Berberere | Bale | Forest |
| AU160 | <i>T. gamsii</i> | Berberere | Bale | Forest |
| AU161 | <i>T. longibrachiatum</i> | Berberere | Bale | Forest |
| AU162 | <i>T. asperelloides</i> | Kercha | West Guji | Garden Coffee |
| AU163 | <i>T. asperellum</i> | Jarso | West Wollega | Semi forest |
| AU164 | <i>T. longibrachiatum</i> | Jarso | West Wollega | Semi forest |
| AU165 | <i>T. asperellum</i> | Aira Guliso | West Wollega | Semi forest |
| AU166 | <i>T. hamatum</i> | Semein Benchi | Benchi Maji | Semi forest |
| AU167 | <i>T. bissettii</i> | Bule Hora | West Guji | Garden Coffee |
| AU168 | <i>T. aethiopicum</i> | Kercha | West Guji | Garden Coffee |
| AU169 | <i>T. asperellum</i> | Kercha | West Guji | Garden Coffee |
| AU170 | <i>T. asperellum</i> | Aira Guliso | West Wollega | Garden Coffee |
| AU171 | <i>T. asperellum</i> | Aira Guliso | West Wollega | Garden Coffee |
| AU172 | <i>T. asperellum</i> | Kercha | West Guji | Garden Coffee |
| AU173 | <i>T. longibrachiatum</i> | Bule Hora | West Guji | Garden Coffee |
| AU174 | <i>T. asperellum</i> | Bule Hora | West Guji | Garden Coffee |
| AU175 | <i>T. asperelloides</i> | Bedele | Buno Bedele | Forest |