

Supplementary data

Table S1. Number of CEB colonies in apple producing areas of Yunnan.

| Ecological type<br>of production<br>area                       | Region  | <i>B.subtilis</i>                             |                           | <i>B.velezensis</i>                          |                           | <i>B.licheniformis</i>                       |                           | <i>B.safensis</i>                            |                           | <i>B.pumilus</i>                             |                           | <i>Priestia megaterium</i>                   |                           | Total:                                       | Percentage |
|--|---|---|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|------------|
|  |   | Number of colonies<br>(cfu / g)               | Distribution<br>frequency | Number of colonies<br>(cfu / g)              | Distribution<br>frequency | Number of colonies<br>(cfu / g)              | Distribution<br>frequency | Number of colonies<br>(cfu / g)              | Distribution<br>frequency | Number of colonies<br>(cfu / g)              | Distribution<br>frequency | Number of colonies<br>(cfu / g)              | Distribution<br>frequency | cfu / g                                      | : %        |
| Northeast main<br>apple production<br>area in Yunnan           | Zhaotong                                      | 1.37×10 <sup>3</sup> ±9.72×10 <sup>2</sup> a  | 4/6                       | 2.57×10 <sup>2</sup> ±1.84×10 <sup>2</sup> a | 3/6                       | 1.10×10 <sup>3</sup> ±6.46×10 <sup>2</sup> a | 4/6                       | 3.89×10 <sup>1</sup> ±3.67×10 <sup>1</sup> a | 2/6                       | 1.85×10 <sup>3</sup> ±1.85×10 <sup>1</sup> a | 1/6                       | 0±0a   | 0                         | 2.79×10 <sup>3</sup> ±1.62×10 <sup>3</sup> a | 4.34       |
| Rocky<br>desertification<br>apple production<br>area in Yunnan | Honghe<br>Luxi and<br>Kunming<br>Stone Forest | 2.02×10 <sup>3</sup> ±9.60×10 <sup>2</sup> b  | 15/21                     | 6.57×10 <sup>2</sup> ±2.74×10 <sup>3</sup> a | 18/21                     | 5.87×10 <sup>2</sup> ±2.14×10 <sup>2</sup> b | 12/21                     | 2.10×10 <sup>2</sup> ±1.14×10 <sup>2</sup> b | 9/21                      | 4.80×10 <sup>2</sup> ±4.55×10 <sup>2</sup> b | 6/21                      | 6.04×10 <sup>3</sup> ±4.85×10 <sup>2</sup> b | 3/21                      | 9.88×10 <sup>3</sup> ±3.32×10 <sup>3</sup> a | 15.38      |
| Northwest<br>mornity apple<br>peoduction area<br>in Yunnan     | Lijiang<br>Ninglang                           | 9.22×10 <sup>3</sup> ±3.86×10 <sup>3</sup> a  | 6/6                       | 1.10×10 <sup>4</sup> ±2.86×10 <sup>3</sup> a | 6/6                       | 1.26×10 <sup>3</sup> ±4.21×10 <sup>2</sup> b | 6/6                       | 1.39×10 <sup>3</sup> ±1.39×10 <sup>2</sup> b | 1/6                       | 3.06×10 <sup>2</sup> ±3.04×10 <sup>2</sup> b | 2/6                       | 0±0b   | 0                         | 2.17×10 <sup>4</sup> ±6.58×10 <sup>3</sup> a | 33.86      |
| Early and<br>medium ripening<br>in Yunnan                      | Qujing<br>Malone                              | 1.18×10 <sup>4</sup> ±1.10×10 <sup>4</sup> a  | 5/7                       | 1.49×10 <sup>4</sup> ±1.07×10 <sup>4</sup> a | 6/7                       | 1.92×10 <sup>3</sup> ±1.65×10 <sup>3</sup> a | 5/7                       | 3.67×10 <sup>2</sup> ±2.66×10 <sup>2</sup> a | 6/7                       | 1.11×10 <sup>2</sup> ±6.30×10 <sup>1</sup> a | 3/7                       | 0±0a   | 0                         | 2.91×10 <sup>4</sup> ±2.14×10 <sup>4</sup> a | 45.26      |
| Central Kunming<br>apple production<br>area in Yunnan          | Kunming<br>Tuanjie<br>Township                | 3.95×10 <sup>2</sup> ±2.92×10 <sup>2</sup> a  | 5/5                       | 1.38×10 <sup>2</sup> ±5.12×10 <sup>1</sup> a | 5/5                       | 4.60×10 <sup>1</sup> ±1.93×10 <sup>1</sup> a | 4/5                       | 4.76×10 <sup>0</sup> ±3.30×10 <sup>0</sup> a | 2/5                       | 1.59×10 <sup>2</sup> ±1.59×10 <sup>2</sup> a | 1/5                       | 0±0a   | 0                         | 7.43×10 <sup>2</sup> ±4.94×10 <sup>2</sup> a | 1.16       |
| Total: cfu / g   |   | 4.51×10 <sup>4</sup> ±1.78×10 <sup>4</sup> ab |                           | 7.21×10 <sup>4</sup> ±3.06×10 <sup>4</sup> a |                           | 9.18×10 <sup>3</sup> ±2.67×10 <sup>3</sup> b |                           | 1.61×10 <sup>3</sup> ±9.76×10 <sup>2</sup> b |                           | 3.12×10 <sup>2</sup> ±2.02×10 <sup>2</sup> b |                           | 2.78×10 <sup>1</sup> ±2.78×10 <sup>1</sup> b |                           |  |            |
| Percentage: %  |   | 34.37   |                           | 55.00  |                           | 7.00   |                           | 1.23   |                           | 2.38   |                           | 0.02   |                           |  |            |