**Supplementary Materials**

**Suppl. 1** Onset and endset crystallization temperatures, exothermic and endothermic enthalpies (Δ*H*) for rambutan kernel fat and its fractions from acetone fractionation at 12, 18 and 24 hour1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Samples | Temperature (ºC) | | | | | | Δ*H* (J/g) |
| Low melting region | | Middle melting region | | High melting region | |
| Onset | Endset | Onset | Endset | Onset | Endset |
| RKF | -8.44 ± 0.40Ab | -25.62 ± 0.84Aa | 18.89 ± 0.98B | -7.49 ± 0.80A | 50.14 ± 0.85Ba | 21.33 ± 0.72Ba | 93.35 ± 1.34Aa |
| Olein |  |  |  |  |  |  |  |
| 12 hour | -6.03 ± 0.08C | -16.06 ± 0.49C | 14.03 ± 0.16A | -5.91 ± 0.07B | 47.39 ± 0.62A | 14.69 ± 0.18A | 97.51 ± 1.78B |
| 18 hour | -6.82 ± 0.29B | -18.19 ± 1.66B | 13.20 ± 0.43A | -7.04 ± 1.04AB | 49.00 ± 0.56AB | 14.10 ± 0.70A | 96.38 ± 1.67B |
| 24 hour | -6.48 ± 0.06B | -18.08 ± 0.42B | 14.03 ± 0.15A | -6.48 ± 0.06AB | 50.15 ± 1.54B | 14.73 ± 0.15A | 92.86 ± 1.19A |
| Stearin |  |  |  |  |  |  |  |
| 12 hour | -6.57 ± 0.39b | -22.85 ± 0.70b | - | - | 67.71 ± 0.53b | 28.72 ± 0.42b | 172.55 ± 2.15b |
| 18 hour | -14.65 ± 0.22a | -24.95 ± 1.41a | - | - | 67.55 ± 0.88b | 30.84 ± 0.45c | 174.15 ± 5.04b |
| 24 hour | -17.20 ± 1.49a | -26.76 ± 1.16a | - | - | 69.17 ± 1.15b | 32.51 ± 0.40c | 180.68 ± 8.08b |

1 Mean values with the same letter in the same column are not significantly different (*P* > 0.05). The capital letters (A-D) are used for olein fractions and small letters (a-d) are used for stearin fractions.

**Suppl. 2** Onset and endset melting temperatures, exothermic and endothermic enthalpies (Δ*H*) for rambutan kernel fat and its fractions from acetone fractionation at 12, 18 and 24 hour1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Samples | Temperature (ºC) | | | | | | Δ*H* (J/g) |
| Low melting region | | Middle melting region | | High melting region | |
| Onset | Endset | Onset | Endset | Onset | Endset |
| RKF | -15.19 ± 0.30Cb | 7.76 ± 0.17Ac | 8.22 ± 0.16A | 34.96 ± 0.29B | 36.78 ± 0.96Ca | 60.38 ± 0.48Ba | 111.93 ± 4.24Ba |
| Olein |  |  |  |  |  |  |  |
| 12 hour | -18.41 ± 0.56B | 9.17 ± 0.14B | 9.67 ± 0.38B | 27.85 ± 0.07A | 35.74 ± 0.20B | 58.54 ± 0.19A | 94.13 ± 2.43A |
| 18 hour | -21.42 ± 2.93AB | 8.05 ± 0.67A | 9.34 ± 0.11B | 28.16 ± 0.22A | 33.99 ± 0.12A | 59.96 ± 0.41AB | 94.69 ± 2.92A |
| 24 hour | -22.58 ± 1.94A | 8.34 ± 0.32A | 9.71 ± 0.20B | 27.63 ± 0.52A | 33.97 ± 0.22A | 58.92 ± 1.38A | 94.00 ± 0.79A |
| Stearin |  |  |  |  |  |  |  |
| 12 hour | -15.58 ± 0.69b | 7.16 ± 0.10b | - | - | 36.71 ± 0.90a | 75.76 ± 0.48b | 185.31 ± 1.41b |
| 18 hour | -17.41 ± 0.36a | 6.03 ± 0.38a | - | - | 39.34 ± 1.70b | 75.58 ± 0.67b | 189.37 ± 4.47b |
| 24 hour | -17.47 ± 0.62a | 5.62 ± 0.25a | - | - | 41.23 ± 1.33b | 76.96 ± 0.18c | 197.94 ± 6.54c |

1 Mean values with the same letter in the same column are not significantly different (*P* > 0.05). The capital letters (A-D) are used for olein fractions and small letters (a-d) are used for stearin fractions.

**Suppl. 3** Onset and endset crystallization temperatures and exothermic enthalpies (Δ*H*) for rambutan kernel fat, its fractions from acetone and ethanol fractionation at 24 h, fully hydrogenated canola oil (HCO) and hydrogenated palm oil (HPO).1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Samples | Temperature (ºC) | | | | | | Δ*H* (J/g) |
| Low melting region | | Middle melting region | | High melting region | |
| Onset | Endset | Onset | Endset | Onset | Endset |
| RKF | -8.44 ± 0.40c | -25.62 ± 0.84b | 18.89 ± 0.98c | -7.49 ± 0.80b | 50.14 ± 0.85c | 21.33 ± 0.72d | 93.35 ± 1.34b |
| Olein  Acetone | -6.48 ± 0.06c | -18.08 ± 0.42d | 14.03 ± 0.15b | -6.48 ± 0.06c | 50.15 ± 1.54c | 14.73 ± 0.15c | 92.86 ± 1.19b |
| Ethanol | -20.03 ± 2.95a | -39.84 ± 0.12a | 7.43 ± 0.21a | -13.19 ± 0.22a | 41.62 ± 2.95b | 9.90 ± 0.25b | 81.92 ± 10.75a |
| Stearin  Acetone | -17.20 ± 1.49b | -26.76 ± 1.16c | - | - | 69.17 ± 1.15e | 32.51 ± 0.40f | 180.68 ± 8.08d |
| Ethanol | -6.21 ± 2.10c | -21.47 ± 2.27c | 30.27 ± 0.34d | -2.34 ± 0.76d | 50.43 ± 2.33c | 32.93 ± 0.29f | 97.47 ± 1.67b |
| HCO | - | - | - | - | 56.31 ± 0.28d | 29.77 ± 1.08e | 126.32 ± 1.51c |
| HPO | - | - | - | - | 37.30 ± 0.11a | -17.24 ± 0.97a | 90.59 ± 0.44ab |

1 Mean values with the same letter in the same column are not significantly different (*P* > 0.05).

**Suppl. 4** Onset and endset melting temperatures and endothermic enthalpies (Δ*H*) for rambutan kernel fat, its fractions from acetone and ethanol fractionation at 24 h, fully hydrogenated canola oil (HCO) and hydrogenated palm oil (HPO).1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Samples | Temperature (ºC) | | | | | | Δ*H* (J/g) |
| Low melting region | | Middle melting region | | High melting region | |
| Onset | Endset | Onset | Endset | Onset | Endset |
| RKF | -15.19 ± 0.30cd | 7.76 ± 0.17c | 8.22 ± 0.16a | 34.96 ± 0.29b | 36.78 ± 0.96d | 60.38 ± 0.48b | 111.93 ± 4.24b |
| Olein  Acetone | -22.58 ± 1.94b | 8.34 ± 0.32c | 9.71 ± 0.20b | 27.63 ± 0.52a | 33.97 ± 0.22c | 58.92 ± 1.38b | 94.00 ± 0.79a |
| Ethanol | -36.07 ± 0.25a | -5.70 ± 0.57a | - | - | 24.83 ± 0.25b | 53.50 ± 1.34a | 94.99 ± 7.41a |
| Stearin  Acetone | -17.47 ± 0.62c | 5.62 ± 0.25b | - | - | 41.23 ± 1.33f | 76.96 ± 0.18e | 197.94 ± 6.54d |
| Ethanol | -13.10 ± 2.11d | 23.05 ± 0.95d | 23.11 ± 0.91c | 37.65 ± 1.45c | 39.27 ± 0.42e | 62.56 ± 0.90c | 107.71 ± 3.78b |
| HCO | - | - | - | - | 36.61 ± 1.11d | 64.65 ± 0.49d | 131.17 ± 2.36c |
| HPO | - | - | - | - | 22.85 ± 0.22a | 54.27 ± 0.22a | 105.62 ± 1.23b |

1Mean values with the same letter in the same column are not significantly different (*P* > 0.05).