**Table S1.** Total phenolic contents and antioxidant activities of oriental mustard bran extracts during solid-state fermentation by various microbes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fermentation time (h) | TPC  (mg GAE/g) | FRAP  (µmol AAE/g) | DPPH  (µmol TE/g) | ORAC  (µmol TE/g) |
| *A. awamori* | | | | |
| 0 | 2.30 ± 0.03a | 17.50 ± 0.28a | 13.90 ± 0.11ab | 60.32 ± 6.18b |
| 24 | 2.32 ± 0.05a | 17.51 ± 0.53a | 12.81 ± 0.93a | 38.19 ± 4.06a |
| 48 | 3.18 ± 0.12bc | 20.88 ± 0.78abc | 14.72 ± 0.45ab | 44.76 ± 6.96ab |
| 72 | 3.76 ± 0.11d | 26.08 ± 1.60c | 18.66 ± 0.10c | 49.66 ± 8.51ab |
| 96 | 3.63 ± 0.29cd | 25.55 ± 0.65bc | 18.92 ± 1.20c | 61.24 ± 8.98b |
| 168 | 2.96 ± 0.10b | 20.66 ± 0.95ab | 16.29 ± 0.46bc | 39.68 ± 4.46a |
| *A. niger* | | | | |
| 0 | 2.50 ± 0.03a | 18.39 ± 0.09a | 15.24 ± 0.20a | 67.76 ± 1.76ab |
| 24 | 2.94 ± 0.11a | 20.61 ± 0.42ab | 16.82 ± 0.68ab | 51.13 ± 4.75a |
| 48 | 3.72 ± 0.08b | 24.84 ± 0.45b | 19.80 ± 0.20b | 72.64 ± 3.21b |
| 72 | 4.26 ± 0.22c | 31.08 ± 2.55c | 23.95 ± 1.39c | 79.55 ± 7.27b |
| 96 | 4.99 ± 0.33d | 42.99 ± 8.48d | 38.03 ± 5.07d | 102.57 ± 4.20c |
| 168 | 5.24 ± 0.21d | 49.63 ± 4.71e | 43.31 ± 2.40e | 100.79 ± 14.14c |
| *A. oryzae* | | | | |
| 0 | 2.56 ± 0.02a | 18.19 ± 0.76a | 15.35 ± 0.67ab | 65.39 ± 2.91bc |
| 24 | 2.20 ± 0.24a | 20.65 ± 1.62ab | 13.10 ± 0.61a | 44.08 ± 8.84a |
| 48 | 2.59 ± 0.05a | 25.94 ± 0.07bc | 16.16 ± 0.15ab | 67.93 ± 4.21bc |
| 72 | 2.63 ± 0.08a | 26.21 ± 1.41c | 16.69 ± 1.16b | 57.43 ± 13.20ab |
| 96 | 2.67 ± 0.20a | 26.78 ± 1.92c | 16.07 ± 1.52ab | 80.53 ± 12.13c |
| 168 | 2.47 ± 0.11a | 24.71 ± 2.39bc | 15.82 ± 1.23ab | 67.34 ± 11.63bc |
| *R. oligosporus* | | | | |
| 0 | 2.39 ± 0.06a | 18.14 ± 0.54a | 13.82 ± 0.14a | 63.03 ± 1.44a |
| 24 | 2.93 ± 0.01b | 20.46 ± 0.90ab | 14.93 ± 0.45a | 61.19 ± 4.19a |
| 48 | 3.60 ± 0.07c | 23.62 ± 1.02b | 16.16 ± 0.54ab | 83.75 ± 4.42b |
| 72 | 3.66 ± 0.08c | 24.88 ± 0.37b | 19.27 ± 0.53b | 83.94 ± 0.78b |
| 96 | 3.69 ± 0.04c | 24.04 ± 0.69b | 19.11 ± 0.64b | 78.47 ± 6.22ab |
| 168 | 3.35 ± 0.13bc | 23.27 ± 1.29ab | 19.37 ± 0.63b | 67.35 ± 3.23ab |
| *R. oryzae* | | | | |
| 0 | 2.40 ± 0.08a | 16.80 ± 0.45a | 14.12 ± 0.65a | 70.38 ± 2.48bc |
| 24 | 3.42 ± 0.13b | 21.70 ± 0.63ab | 16.77 ± 0.51a | 42.82 ± 6.62a |
| 48 | 3.59 ± 0.20b | 24.10 ± 0.52b | 16.79 ± 0.53a | 55.06 ± 4.08ab |
| 72 | 3.57 ± 0.21b | 24.82 ± 1.12b | 17.23 ± 1.18a | 49.71 ± 3.67a |
| 96 | 3.73 ± 0.23b | 26.09 ± 0.63bc | 17.43 ± 1.05a | 86.93 ± 7.95c |
| 168 | 4.31 ± 0.83c | 30.74 ± 4.29c | 25.38 ± 4.04b | 88.00 ± 19.29c |
| *B. subtilis* | | | | |
| 0 | 2.65 ± 0.02a | 18.53 ± 0.03a | 14.12 ± 0.38a | 62.56 ± 4.34bc |
| 24 | 2.70 ± 0.18a | 19.24 ± 2.35a | 11.69 ± 1.62a | 34.80 ± 4.26a |
| 48 | 2.97 ± 0.10a | 18.72 ± 1.00a | 11.18 ± 1.04a | 59.61 ± 10.20b |
| 72 | 3.12 ± 0.31a | 19.94 ± 2.08a | 13.20 ± 2.00a | 61.90 ± 21.50bc |
| 96 | 2.75 ± 0.26a | 20.74 ± 4.39a | 11.07 ± 1.68a | 73.54 ± 9.06bc |
| 168 | 2.65 ± 0.23a | 21.48 ± 1.57a | 13.51 ± 0.55a | 80.29 ± 10.86c |
| *S. cerevisiae* | | | | |
| 0 | 2.66 ± 0.07ab | 18.59 ± 0.32b | 14.70 ± 0.06b | 70.58 ± 1.98c |
| 24 | 2.47 ± 0.25a | 14.72 ± 2.77ab | 10.58 ± 1.42a | 39.05 ± 2.97a |
| 48 | 2.91 ± 0.32ab | 15.37 ± 3.99ab | 11.08 ± 2.11a | 45.70 ± 4.01ab |
| 72 | 2.75 ± 0.18ab | 11.07 ± 0.19a | 8.64 ± 0.38a | 37.96 ± 5.34a |
| 96 | 3.01 ± 0.12b | 12.36 ± 1.61a | 9.87 ± 0.95a | 64.83 ± 4.01bc |
| 168 | 3.93 ± 0.24c | 18.51 ± 2.39b | 14.78 ± 1.36b | 99.92 ± 10.26d |

TPC – total phenolic contents; FRAP – ferric reducing antioxidant power; DPPH – 2,2-diphenyl-1-picrylhydrazyl; ORAC – oxygen radical absorption capacity; GAE – gallic acid equivalents; AAE – ascorbic acid equivalents; TE – Trolox equivalents. Results are expressed as mean ± standard deviation (n = 3) on a dry weight basis. Means followed by a common letter within the same column per microbial group are not significantly different by the Tukey’s HSD test at the 5% level of significance.