**Table S 1** Amount of residual sugars in the fermented samples (g/L).

| | Residual sugars at tf | | |
|---|---|---|---|
| | **Sucrose** | **Glucose** | **Fructose** |
| **VEGE** | 24.6 a | < 0.001 d | 0.8 c |
| **VEGE + KM** | < 0.001 b | 3.3 c | 9.9 b |
| **VEGE + KL** | 0.27 b | 7.5 a | 13 a |
| **VEGE + TOR** | 0.4 b | 5.6 b | 10 b |

Means in the same column with different letters are significantly different ($p < 0.05$).

**Table S 2** Volatile compounds identified in the non-fermented and fermented pea samples (expressed as the surface area of the peaks).

| | | Surface area | | | | |
|---|---|---|---|---|---|---|
| **Families** | **Volatile compounds** | **Uninoculated** | **VEGE** | **VEGE + KM** | **VEGE + KL** | **VEGE +TOR** |
| **Aldehydes** | 2-methylpropanal | 2.29E+06 | 3.99E+05 | 2.3E+07 | 4.01E+07 | 2.25E+07 |
| | Butanal | 8.46E+06 | < DL | < DL | < DL | < DL |
| | 3-methylbutanal | 5.08E+06 | < DL | 3.3E+06 | 8.65E+06 | 2.88E+06 |
| | 2-methylbutanal | 2.99E+06 | < DL | 2.7E+06 | 1.07E+07 | 3.82E+06 |
| | Pentanal | 9.48E+06 | < DL | < DL | < DL | < DL |
| | Trans -2-methyl-2-butenal | 1.27E+05 | 5.11E+04 | < DL | < DL | < DL |
| | Hexanal | 6.85E+07 | < DL | < DL | < DL | < DL |
| | 2-ethyl-2-butenal | 5.42E+04 | 3.19E+04 | < DL | < DL | < DL |
| | (E)-2-hexenal | 5.81E+04 | < DL | < DL | < DL | < DL |
| | Heptanal | 2.59E+06 | < DL | < DL | < DL | < DL |
| | (E)-2-heptenal | 6.35E+04 | 2.01E+04 | < DL | < DL | < DL |
| | Benzaldehyde | < DL | 1.19E+05 | < DL | < DL | < DL |
| | Octanal | 2.44E+06 | < DL | < DL | < DL | < DL |
| | 2-ethyl-2-hexenal | 3.25E+05 | 1.65E+05 | < DL | < DL | < DL |
| | Nonanal | 2.06E+06 | < DL | < DL | < DL | < DL |
| | 3-ethyl benzaldehyde | 5.96E+04 | 8.25E+03 | < DL | < DL | < DL |
| | Decanal | 2.15E+05 | < DL | < DL | < DL | < DL |
| | Cis-undec-4-enal | < DL | 3.66E+04 | < DL | < DL | < DL |
| | (E)-2-octenal | 3.71E+05 | < DL | < DL | < DL | < DL |
| | Dodecanal | 9.16E+04 | < DL | < DL | < DL | < DL |
| **Ketones** | Acetone | 4.24E+06 | < DL | < DL | 1.14E+06 | 8.93E+04 |
| | 2,3-butanedione | 5.93E+04 | 4.18E+06 | < DL | 6.48E+06 | < DL |
| | 2-butanone | < DL | 5.76E+05 | < DL | 3.14E+06 | 6.81E+05 |
| | 2-pentanone | 5.93E+05 | 1.43E+05 | < DL | 1.63E+06 | 4.29E+05 |
| | 2,3-pentanedione | < DL | 4.62E+06 | < DL | 3.49E+06 | 1.99E+05 |
| | 4-methyl-2-pyrazolin-5-one | < DL | 5.75E+04 | < DL | < DL | < DL |
| | 2,3-Hexanedione | < DL | 5.79E+04 | < DL | < DL | < DL |
| | 2-hexanone | 5.90E+05 | 1.87E+05 | < DL | 8.60E+05 | 1.82E+05 |
| | 4-methyl-3-penten-2-one | < DL | < DL | < DL | 1.02E+06 | < DL |
| | 1-(2-furanyl)-1-propanone | 3.20E+05 | 3.09E+04 | < DL | < DL | 6.01E+04 |
| | 2- heptanone | 1.37E+07 | 3.91E+06 | 8.2E+05 | 1.38E+07 | 3.58E+06 |
| | 3-ethylcyclopentanone | 1.15E+05 | 3.70E+04 | < DL | < DL | 6.61E+04 |
| | (Z)-6-octen-2-one | < DL | < DL | 1.8E+06 | 7.59E+06 | 2.16E+06 |
| | 6-methyl-5-hepten-2-one | 1.1E+05 | 1.04E+05 | < DL | < DL | < DL |
| | 2-octanone | 1.12E+06 | 3.12E+05 | < DL | 1.56E+06 | 3.77E+05 |
| | Acetophenone | 1.82E+05 | < DL | < DL | < DL | < DL |
| | 2-nonanone | 2.35E+06 | 5.22E+05 | < DL | < DL | 5.57E+05 |
| | (E, E) -3,5-octadien-2-one | 2.22E+06 | 7.82E+04 | < DL | 1.57E+06 | 3.07E+05 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 3-nonen-2-one | < DL | 9.03E+03 | < DL | < DL | < DL |
| | 2-decanone | < DL | < DL | < DL | 1.63E+06 | < DL |
| | 6-undecanone | 1.14E+05 | < DL | < DL | < DL | < DL |
| | Ethanol | < DL | < DL | 5.4E+07 | 6.50E+07 | 4.78E+07 |
| | 1-propanol | < DL | 1.12E+05 | < DL | 6.90E+06 | 4.28E+06 |
| | 2-methyl-1-propanol | < DL | < DL | 2.7E+08 | 1.56E+08 | 4.58E+07 |
| | 1-butanol | < DL | 2.38E+05 | < DL | 9.77E+05 | 3.77E+05 |
| | 1-penten-3-ol | 8.85E+05 | 1.67E+05 | 5.0E+05 | 1.27E+06 | 2.55E+05 |
| | 3-methyl-1-butanol | < DL | < DL | 4.4E+08 | 1.34E+08 | 1.13E+08 |
| | 2-methyl-1-butanol | < DL | < DL | 5.7E+07 | 5.57E+07 | 2.90E+07 |
| **Alcohols** | 1-pentanol | 1.51E+06 | 1.48E+06 | 1.6E+06 | 5,34E+06 | 1.10E+06 |
| | 2,3-butanediol | < DL | < DL | 2.4E+06 | < DL | 3.73E+05 |
| | 1-hexanol | < DL | 7.30E+06 | 1.0E+07 | 2.89E+07 | 6.74E+06 |
| | (S )-2-heptanol | < DL | < DL | 1.0E+06 | < DL | 2.53E+05 |
| | 4-ethyl phenol | 7.88E+05 | 2.43E+05 | 3.0E+05 | 5.95E+05 | 3.04E+05 |
| | 1-Heptanol | < DL | 3.12E+05 | < DL | < DL | 4.01E+05 |
| | 1-octen-3-ol | 4.86E+05 | 2.79E+05 | 3.6E+05 | 8.45E+05 | 3.71E+05 |
| | 1-adamantanol | 6.57E+05 | < DL | < DL | < DL | 1.01E+05 |
| | 1-octanol | < DL | < DL | **3.9E+05** | < DL | 2.59E+05 |
| | Phenylethyl alcohol | < DL | < DL | < DL | < DL | 1.70E+06 |
| | 3-methyl furan | 5.62E+05 | 3.10E+05 | < DL | 4.99E+05 | 2.21E+05 |
| | 2-ethyl furan | 1.98E+07 | 7.15E+06 | 7.5E+06 | 1.44E+07 | 8.35E+06 |
| | 2,4-dimethylfuran | < DL | < DL | < DL | 1.18E+07 | < DL |
| | 2-propyl furan | 5.62E+05 | 1.49E+05 | 3.7E+05 | 3.71E+05 | 1.47E+05 |
| | Furfural | 6.44E+04 | < DL | < DL | < DL | < DL |
| **Furans** | 2-n- butyl furan | 8.84E+04 | **3.36E+05** | 3.5E+05 | < DL | 3.93E+05 |
| | 2-pentyl furan | 7.94E+07 | 1.21E+07 | 1.5E+07 | 3.86E+07 | 1.44E+07 |
| | 2-hexyl furan | 1.85E+05 | 1.60E+04 | < DL | < DL | < DL |
| | 2-n-heptyl furan | 1.58E+05 | < DL | < DL | < DL | < DL |
| | 2-n-octylfuran | 5.62E+04 | < DL | < DL | < DL | < DL |
| | Trans-2-(2-pentenyl) furan | 1.52E+06 | 3.50E+05 | 4.0E+05 | 7.80E+05 | 4.29E+05 |
| | Acetic acid, ethenyl ester | < DL | < DL | 5.9E+05 | < DL | 1.83E+06 |
| | Butyl isocyanatoacetate | < DL | < DL | 1.4E+06 | < DL | 8.38E+05 |
| | Acetic acid, methyl ester | < DL | < DL | < DL | 5.09E+05 | < DL |
| | Ethyl acetate | < DL | < DL | 5.4E+08 | 5.53E+08 | 1.13E+08 |
| **Esters** | Propanoic acid, ethyl ester | < DL | < DL | 1.4E+07 | 6.44E+07 | 7.94E+06 |
| | n-propyl acetate | < DL | < DL | 3.09E+06 | 1.31E+07 | < DL |

| | | | | | |
|---|---|---|---|---|---|
| Propanoic acid, 2-methyl-, ethyl ester | < DL | < DL | 2.5E+07 | 8.66E+05 | 6.07E+04 |
| Isobutyl acetate | < DL | < DL | 6.9E+06 | 3.21E+06 | < DL |
| Acetic acid, butyl ester | < DL | < DL | < DL | 4.04E+05 | < DL |
| 1 butanol, 3-methyl-, acetate | < DL | < DL | 1.9E+07 | 2.36E+06 | 3.21E+05 |
| 1 butanol, 2-methyl-, acetate | < DL | < DL | 4.6E+06 | 4.96E+05 | < DL |
| Acetic acid, pentyl ester | < DL | < DL | 5.0E+05 | 1.31E+06 | < DL |
| 1-butanol, 3-methyl-, propanoate | < DL | < DL | 9.4E+05 | < DL | < DL |
| Hexanoic acid, ethyl ester | < DL | < DL | 1.1E+06 | < DL | 5.61E+05 |
| Propanoic acid, 2-methyl, 3-methylbutyl ester | < DL | < DL | 4.3E+05 | < DL | < DL |
| Heptanoic acid, ethyl ester | < DL | < DL | < DL | < DL | 7.00E+04 |
| Acetic acid, hexyl ester | < DL | < DL | 5.1E+06 | 2.69E+06 | < DL |
| Octanoic acid, ethyl ester | < DL | < DL | 3.1E+05 | < DL | 4.2E+05 |
| Acetic acid, 2-phenylethyl ester | < DL | < DL | 9.2E+06 | 1.44E+07 | 1.34E+05 |
| Propanoic acid, 2-phenylethyl ester | < DL | < DL | 3.9E+05 | < DL | < DL |
| Propanoic acid, 2-methyl-, 2-phenylethyl ester | < DL | < DL | 3.5E+05 | < DL | < DL |
| Decanoic acid, ethyl ester | < DL | < DL | < DL | < DL | 6.94E+04 |