Supplementary material. Table 1: Descriptive statistics of the phenotypic characteristics by lactic acid bacteria specie

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Min.** | **1st Qu.** | **Median** | **Mean** | **3rdQu.** | **Max.** |
| *Enterococcus faecium (n=20)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 0.000 | 0.000 | 0.055 | 0.000 | 1.110 |
| pH6 | 5.711 | 5.756 | 5.786 | 5.786 | 5.812 | 5.895 |
| ΔpH03 | 0.244 | 0.306 | 0.332 | 0.331 | 0.355 | 0.380 |
| ΔpH06 | 0.741 | 0.817 | 0.856 | 0.848 | 0.875 | 0.916 |
| ΔpH36 | 0.488 | 0.501 | 0.516 | 0.516 | 0.529 | 0.539 |
| LAC (g/L) | 0.162 | 0.237 | 0.273 | 0.3253 | 0.4155 | 0.5911 |
| ID\_10C *L. monocytogenes* (mm) | 7.553 | 11.249 | 11.486 | 11.291 | 11.685 | 11.940 |
| ID\_37C *L. monocytogenes* (mm) | 5.995 | 8.021 | 8.320 | 8.196 | 8.421 | 9.235 |
| ID\_10C *S. aureus* (mm) | 3.490 | 4.638 | 4.954 | 4.876 | 5.215 | 5.628 |
| ID\_37C *S. aureus* (mm) | 0.000 | 0.000 | 0.000 | 0.181 | 0.404 | 0.765 |
| ID\_10C *S.* Typhimurium (mm) | 2.808 | 3.723 | 4.335 | 4.266 | 4.711 | 6.130 |
| ID\_37C *S.* Typhimurium (mm) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| *Lacticaseibacillus paracasei (n=6)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 2.300 | 4.256 | 3.462 | 4.968 | 4.995 |
| pH6 | 5.793 | 5.824 | 5.889 | 6.038 | 6.398 | 6.438 |
| ΔpH03 | 0.057 | 0.082 | 0.238 | 0.197 | 0.271 | 0.297 |
| ΔpH06 | 0.111 | 0.156 | 0.738 | 0.556 | 0.792 | 0.799 |
| ΔpH36 | 0.029 | 0.099 | 0.497 | 0.358 | 0.499 | 0.527 |
| LAC (g/L) | 0.047 | 0.055 | 0.062 | 0.252 | 0.644 | 0.645 |
| ID\_10C *L. monocytogenes* (mm) | 16.730 | 17.200 | 17.440 | 17.670 | 18.280 | 18.710 |
| ID\_37C *L. monocytogenes* (mm) | 9.182 | 9.954 | 10.414 | 10.447 | 10.854 | 11.873 |
| ID\_10C *S. aureus* (mm) | 7.100 | 8.109 | 9.236 | 9.334 | 10.405 | 11.902 |
| ID\_37C *S. aureus* (mm) | 8.410 | 8.675 | 8.869 | 9.065 | 9.445 | 9.992 |
| ID\_10C *S.* Typhimurium (mm) | 8.648 | 8.805 | 9.744 | 9.750 | 10.606 | 10.977 |
| ID\_37C *S.* Typhimurium (mm) | 9.967 | 10.949 | 11.611 | 11.520 | 11.922 | 13.175 |
| *Lactiplantibacillus herbarum (n=2)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 0.000 | 0.410 | 0.410 | 0.820 | 0.820 |
| pH6 | 6.477 | 6.477 | 6.478 | 6.478 | 6.478 | 6.478 |
| ΔpH03 | 0.106 | 0.106 | 0.131 | 0.131 | 0.155 | 0.155 |
| ΔpH06 | 0.162 | 0.162 | 0.188 | 0.188 | 0.213 | 0.213 |
| ΔpH36 | 0.056 | 0.056 | 0.056 | 0.056 | 0.057 | 0.057 |
| LAC (g/L) | 0.529 | 0.529 | 0.557 | 0.557 | 0.585 | 0.585 |
| ID\_10C *L. monocytogenes* (mm) | 17.410 | 18.280 | 19.140 | 19.140 | 20.000 | 20.860 |
| ID\_37C *L. monocytogenes* (mm) | 11.400 | 11.600 | 11.790 | 11.790 | 11.980 | 12.170 |
| ID\_10C *S. aureus* (mm) | 10.720 | 11.010 | 11.290 | 11.290 | 11.580 | 11.870 |
| ID\_37C *S. aureus* (mm) | 7.662 | 7.669 | 7.675 | 7.675 | 7.681 | 7.688 |
| ID\_10C *S.* Typhimurium (mm) | 10.940 | 11.070 | 11.210 | 11.210 | 11.340 | 11.480 |
| ID\_37C *S.* Typhimurium (mm) | 9.262 | 9.779 | 10.295 | 10.295 | 10.811 | 11.328 |
| *Lactiplantibacillus plajomi (n=3)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 2.053 | 2.053 | 3.335 | 3.068 | 3.817 | 3.817 |
| pH6 | 5.804 | 5.804 | 6.471 | 6.249 | 6.471 | 6.471 |
| ΔpH03 | 0.155 | 0.155 | 0.189 | 0.224 | 0.329 | 0.329 |
| ΔpH06 | 0.230 | 0.230 | 0.239 | 0.430 | 0.820 | 0.820 |
| ΔpH36 | 0.049 | 0.049 | 0.075 | 0.205 | 0.490 | 0.490 |
| LAC (g/L) | 0.092 | 0.092 | 0.514 | 0.427 | 0.676 | 0.676 |
| ID\_10C *L. monocytogenes* (mm) | 19.180 | 19.490 | 19.800 | 21.620 | 22.830 | 25.860 |
| ID\_37C *L. monocytogenes* (mm) | 9.375 | 9.920 | 10.465 | 10.282 | 10.735 | 11.005 |
| ID\_10C *S. aureus* (mm) | 8.332 | 10.932 | 13.533 | 11.915 | 13.706 | 13.880 |
| ID\_37C *S. aureus* (mm) | 7.478 | 7.834 | 8.190 | 8.233 | 8.611 | 9.033 |
| ID\_10C *S.* Typhimurium (mm) | 9.375 | 9.887 | 10.400 | 10.809 | 11.526 | 12.652 |
| ID\_37C *S.* Typhimurium (mm) | 9.842 | 9.893 | 9.943 | 10.967 | 11.529 | 13.115 |
| *Lactiplantibacillus plantarum (n=4)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 1.780 | 2.095 | 3.315 | 3.219 | 4.439 | 4.468 |
| pH6 | 5.834 | 5.856 | 6.069 | 6.101 | 6.314 | 6.433 |
| ΔpH03 | 0.117 | 0.155 | 0.211 | 0.200 | 0.256 | 0.258 |
| ΔpH06 | 0.277 | 0.368 | 0.574 | 0.546 | 0.752 | 0.758 |
| ΔpH36 | 0.109 | 0.238 | 0.386 | 0.346 | 0.494 | 0.503 |
| LAC (g/L) | 0.248 | 0.332 | 0.423 | 0.396 | 0.487 | 0.462 |
| ID\_10C *L. monocytogenes* (mm) | 17.120 | 18.380 | 20.170 | 19.770 | 21.560 | 21.640 |
| ID\_37C *L. monocytogenes* (mm) | 9.127 | 9.182 | 9.774 | 9.778 | 10.370 | 10.438 |
| ID\_10C *S. aureus* (mm) | 9.102 | 9.770 | 10.611 | 10.828 | 11.669 | 12.988 |
| ID\_37C *S. aureus* (mm) | 7.475 | 7.544 | 7.798 | 8.299 | 8.552 | 10.125 |
| ID\_10C *S.* Typhimurium (mm) | 9.310 | 9.842 | 10.158 | 10.085 | 10.400 | 10.715 |
| ID\_37C *S.* Typhimurium (mm) | 10.610 | 10.930 | 11.560 | 11.560 | 12.190 | 12.500 |
| *Latilactobacillus sakei (n=11)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 0.000 | 0.000 | 0.759 | 0.852 | 4.287 |
| pH6 | 6.367 | 6.387 | 6.434 | 6.446 | 6.511 | 6.519 |
| ΔpH03 | 0.077 | 0.119 | 0.158 | 0.176 | 0.259 | 0.301 |
| ΔpH06 | 0.148 | 0.171 | 0.231 | 0.239 | 0.302 | 0.339 |
| ΔpH36 | 0.038 | 0.042 | 0.050 | 0.063 | 0.077 | 0.146 |
| LAC (g/L) | 0.015 | 0.148 | 0.562 | 0.420 | 0.620 | 0.650 |
| ID\_10C *L. monocytogenes* (mm) | 10.790 | 12.850 | 14.100 | 14.620 | 16.160 | 19.660 |
| ID\_37C *L. monocytogenes* (mm) | 10.070 | 10.520 | 11.300 | 11.350 | 11.970 | 13.160 |
| ID\_10C *S. aureus* (mm) | 5.742 | 7.656 | 8.307 | 9.330 | 8.908 | 10.775 |
| ID\_37C *S. aureus* (mm) | 5.662 | 6.112 | 6.310 | 6.512 | 6.907 | 7.545 |
| ID\_10C *S.* Typhimurium (mm) | 6.787 | 8.239 | 9.045 | 8.854 | 9.461 | 11.23 |
| ID\_37C *S.* Typhimurium (mm) | 7.503 | 8.406 | 9.510 | 9.215 | 9.887 | 11.113 |
| *Leuconostoc mesenteroides (n=12)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 1.682 | 3.490 | 3.436 | 4.918 | 8.258 |
| pH6 | 5.995 | 6.335 | 6.385 | 6.356 | 6.429 | 6.449 |
| ΔpH03 | 0.110 | 0.131 | 0.165 | 0.181 | 0.226 | 0.301 |
| ΔpH06 | 0.215 | 0.223 | 0.270 | 0.308 | 0.321 | 0.717 |
| ΔpH36 | 0.079 | 0.091 | 0.099 | 0.126 | 0.113 | 0.416 |
| LAC (g/L) | 0.011 | 0.018 | 0.025 | 0.055 | 0.031 | 0.21 |
| ID\_10C *L. monocytogenes* (mm) | 15.090 | 18.590 | 19.510 | 19.550 | 21.230 | 23.190 |
| ID\_37C *L. monocytogenes* (mm) | 9.045 | 9.440 | 10.345 | 10.529 | 11.592 | 12.280 |
| ID\_10C *S. aureus* (mm) | 9.275 | 9.983 | 10.643 | 10.617 | 11.239 | 11.965 |
| ID\_37C *S. aureus* (mm) | 5.255 | 5.740 | 6.349 | 6.373 | 6.982 | 7.732 |
| ID\_10C *S.* Typhimurium (mm) | 9.590 | 10.280 | 10.810 | 10.890 | 11.390 | 12.570 |
| ID\_37C *S.* Typhimurium (mm) | 10.420 | 12.100 | 13.050 | 12.890 | 13.550 | 14.670 |
| *Pediococcus pentosaceus (n=3)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 0.000 | 4.735 | 3.403 | 5.475 | 5.475 |
| pH6 | 6.379 | 6.379 | 6.406 | 6.419 | 6.474 | 6.474 |
| ΔpH03 | 0.140 | 0.140 | 0.152 | 0.172 | 0.225 | 0.225 |
| ΔpH06 | 0.184 | 0.184 | 0.225 | 0.240 | 0.310 | 0.310 |
| ΔpH36 | 0.043 | 0.043 | 0.073 | 0.067 | 0.084 | 0.084 |
| LAC (g/L) | 0.028 | 0.028 | 0.559 | 0.417 | 0.663 | 0.663 |
| ID\_10C *L. monocytogenes* (mm) | 18.050 | 19.130 | 20.210 | 19.660 | 20.460 | 20.710 |
| ID\_37C *L. monocytogenes* (mm) | 9.078 | 9.796 | 10.515 | 10.105 | 10.619 | 10.723 |
| ID\_10C *S. aureus* (mm) | 7.617 | 9.189 | 10.760 | 10.163 | 11.436 | 12.113 |
| ID\_37C *S. aureus* (mm) | 6.202 | 6.599 | 6.995 | 6.740 | 7.009 | 7.022 |
| ID\_10C *S.* Typhimurium (mm) | 10.420 | 10.550 | 10.680 | 10.660 | 10.780 | 10.870 |
| ID\_37C *S.* Typhimurium (mm) | 9.107 | 9.981 | 10.855 | 10.410 | 11.061 | 11.268 |
| *Weissela uvarum (n=1)* |  |  |  |  |  |  |
| Proteolytic Activity (mm) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| pH6 | 6.449 | 6.449 | 6.449 | 6.449 | 6.449 | 6.449 |
| ΔpH03 | 0.135 | 0.135 | 0.135 | 0.135 | 0.135 | 0.135 |
| ΔpH06 | 0.239 | 0.239 | 0.239 | 0.239 | 0.239 | 0.239 |
| ΔpH36 | 0.104 | 0.104 | 0.104 | 0.104 | 0.104 | 0.104 |
| LAC (g/L) | 0.308 | 0.308 | 0.308 | 0.308 | 0.308 | 0.308 |
| ID\_10C *L. monocytogenes* (mm) | 18.210 | 18.210 | 18.210 | 18.210 | 18.210 | 18.210 |
| ID\_37C *L. monocytogenes* (mm) | 11.100 | 11.100 | 11.100 | 11.100 | 11.100 | 11.100 |
| ID\_10C *S. aureus* (mm) | 11.240 | 11.240 | 11.240 | 11.240 | 11.240 | 11.240 |
| ID\_37C *S. aureus* (mm) | 6.185 | 6.185 | 6.185 | 6.185 | 6.185 | 6.185 |
| ID\_10C *S.* Typhimurium (mm) | 10.430 | 10.430 | 10.430 | 10.430 | 10.430 | 10.430 |
| ID\_37C *S.* Typhimurium (mm) | 9.883 | 9.883 | 9.883 | 9.883 | 9.883 | 9.883 |