Supplementary Information Table S6

Linear model parameters

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| Author (year) | Strain name | Growth phase | Water type (pH) | Temperature, Celsius | Number of data points | Disinfectant dose for 2 LRV, in J/m2 or mg\*min/L as appropriate (95% CI) | Lag coefficient, b, in J/m2 or mg\*min/L as appropriate (95% CI) | Chick-Watson inactivation rate constant, kD, in m2/J or L/mg/min as appropriate (95% CI) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UV - Yeast | | | | | | | | |
| Daryany et al. (2008) | Baker's yeast | Logarithmic | PBS (7.4) | NA | 6 | 143.21 (60.19; 226.22) | 24.415 (-56.781; 105.612) | 0.01184 (0.00116; 0.02252) |
| Del Carratore et al. (2002) | Baker's yeast | Logarithmic | NS (NS) | NA | 4 | 507.15 (356.44; 657.87) | 1.590 (-59.231; 62.412) | 0.00390 (0.00244; 0.00535) |
| Kim et al. (2004) | Wild-type (XS800) | Stationary | PBS (7.4) | NA | 3 | 807.24 (0.00; 2997.73) | 45.853 (-921.886; 1013.591) | 0.00242 (-0.00651; 0.01135) |
| Nunes et al. (1975) | Wild-type (211) | Logarithmic | Distilled (7.0) | NA | 7 | 267.75 (213.45; 322.06) | 29.903 (2.671; 57.136) | 0.00792 (0.00566; 0.01018) |
| Schenk et al. (2011) | Wild-type (KE 162) | Stationary | Peptone water (7.2) | NA | 4 | 155.12 (0.00; 469.49) | 0.000 (0.000; 0.000) | 0.01417 (0.01417; 0.01417) |
| Swietlinska et al. (1976) | Wild-type (RAD 197/2d) | Stationary | PBS (7.0) | NA | 5 | 165.22 (28.94; 301.49) | 0.299 (-3.030; 3.629) | 0.01002 (0.00158; 0.01846) |
| Watanabe et al. (2010) | Wild-type (NBRC 1046) | Stationary | Mineral (6.7) | NA | 9 | 140.01 (110.33; 169.70) | 22.121 (-21.799; 66.041) | 0.01507 (0.01029; 0.01985) |
| Waters and Parry (1973) | Wild-type (RAD 197/2d) | Logarithmic | Saline (NS) | NA | 8 | 387.39 (297.13; 477.66) | 46.445 (-6.755; 99.645) | 0.00526 (0.00349; 0.00704) |
| Zuk et al. (1975) | Wild-type (RAD 197/2d) | Stationary | PBS (7.0) | NA | 5 | 391.66 (0.00; 1559.71) | 1.426 (-6.003; 8.855) | 0.00139 (-0.00280; 0.00558) |
| Zuk et al. (1978) | Wild-type (RAD 197/2d) | Stationary | PBS (7.0) | NA | 5 | 101.83 (66.29; 137.37) | 10.025 (-8.292; 28.342) | 0.02024 (0.00995; 0.03052) |
| Sommer et al. (1996) | Baker's yeast | Stationary | PBS (7.5) | NA | 9 | 109.81 (98.16; 121.45) | 24.168 (8.238; 40.099) | 0.02218 (0.01762; 0.02674) |
| Sommer et al. (1996) | Laboratory strain (RC43a) | Stationary | PBS (7.5) | NA | 9 | 115.87 (108.05; 123.70) | 24.833 (14.785; 34.881) | 0.02152 (0.01873; 0.02431) |
| Sommer et al. (1996) | Laboratory strain (YNN281) | Stationary | PBS (7.5) | NA | 9 | 114.67 (106.30; 123.04) | 14.960 (3.008; 26.913) | 0.01958 (0.01683; 0.02232) |
| Sommer et al. (1996) | Laboratory strain (YNN281xYNN282) | Stationary | PBS (7.5) | NA | 9 | 159.65 (122.82; 196.48) | 44.430 (19.417; 69.443) | 0.01432 (0.00842; 0.02021) |
| Sommer et al. (1996) | Laboratory strain (YNN282) | Stationary | PBS (7.5) | NA | 9 | 94.75 (83.99; 105.50) | -7.728 (-29.505; 14.050) | 0.01850 (0.01462; 0.02238) |
| Moustacchi and Enteric (1970) | Wild-type (N123) | Logarithmic | Distilled (7.0) | NA | 9 | 121.54 (113.97; 129.11) | 16.804 (4.329; 29.278) | 0.01890 (0.01717; 0.02063) |
| Moustacchi and Enteric (1970) | Wild-type (N123) | Stationary | Distilled (7.0) | NA | 8 | 146.09 (136.66; 155.51) | 10.946 (-3.687; 25.578) | 0.01468 (0.01334; 0.01601) |
| Bisquert et al. (2018) | Laboratory strain (BY4743) | Logarithmic | PBS (7.4) | NA | 2 | 7383059.00 (7383059.00; 7383059.00) | 0.000 (0.000; 0.000) | 0.00000 (0.00000; 0.00000) |
| UV - Cryptosporidium | | | | | | | | |
| Qian et al. (2004), restricted to LRV < 5 | Cryptosporidium | NA | Various | NA | 13 | 6.29 (0.00; 20.01) | -67.952 (-94.682; -41.222) | 0.02495 (0.02027; 0.02963) |
| USEPA (2006) | Cryptosporidium | NA | Post-filtration water | NA | 8 | 75.30 (56.78; 93.81) | -35.321 (-75.193; 4.550) | 0.01671 (0.01194; 0.02149) |
| UV - Giardia | | | | | | | | |
| Qian et al. (2004), restricted to LRV < 5 | Giardia | NA | Various | NA | 7 | 4.75 (0.00; 16.63) | -35.279 (-58.238; -12.321) | 0.04687 (0.03303; 0.06072) |
| USEPA (2006) | Giardia | NA | Post-filtration water | NA | 8 | 70.42 (48.99; 91.84) | -41.250 (-87.388; 4.888) | 0.01617 (0.01088; 0.02147) |
| Free chlorine - Yeast | | | | | | | | |
| Buschini et al. (2004) | Laboratory strain (D7 diploid) | Logarithmic | PBS (7.4) | 37 | 6 | 18272.02 (15176.96; 21367.09) | -162.965 (-379.683; 53.754) | 0.00011 (0.00009; 0.00013) |
| Buschini et al. (2004) | Laboratory strain (D7 diploid) | Stationary | PBS (7.4) | 37 | 6 | 7254.28 (5499.43; 9009.12) | -91.855 (-404.670; 220.960) | 0.00026 (0.00019; 0.00033) |
| Hays et al. (1967) | NS | Stationary | Acetate buffer (5.3) | 25 | 3 | -0.23 (-1.69; 1.23) | -2.145 (-4.777; 0.488) | 1.04199 (0.38952; 1.69446) |
| Hays et al. (1967) | NS | Stationary | USDA buffer (8.6) | 25 | 5 | 0.68 (-5.22; 6.59) | -5.035 (-15.692; 5.622) | 0.28760 (0.04186; 0.53334) |
| Free chlorine - Giardia | | | | | | | | |
| USEPA (1991) | Giardia | NA | Drinking water (6.5) | 25 | 18 | 23.17 (22.15; 24.19) | 0.044 (-2.182; 2.271) | 0.08358 (0.07532; 0.09185) |
| USEPA (1991) | Giardia | NA | Drinking water (7.0) | 25 | 18 | 27.46 (26.24; 28.69) | 0.222 (-2.458; 2.903) | 0.07085 (0.06369; 0.07801) |
| USEPA (1991) | Giardia | NA | Drinking water (7.5) | 25 | 18 | 33.45 (32.00; 34.91) | 0.044 (-3.141; 3.230) | 0.05789 (0.05222; 0.06356) |
| USEPA (1991) | Giardia | NA | Drinking water (8.0) | 25 | 18 | 40.52 (38.58; 42.46) | -0.089 (-4.326; 4.148) | 0.04732 (0.04224; 0.05239) |
| USEPA (1991) | Giardia | NA | Drinking water (8.5) | 25 | 18 | 48.98 (46.59; 51.38) | 0.222 (-5.014; 5.458) | 0.03931 (0.03498; 0.04365) |
| Chlorine dioxide - Yeast | | | | | | | | |
| Buschini et al. (2004) | Laboratory strain (D7 diploid) | Logarithmic | PBS (7.4) | 37 | 8 | 19937.28 (7914.01; 31960.56) | -75.316 (-236.456; 85.824) | 0.00007 (0.00003; 0.00012) |
| Buschini et al. (2004) | Laboratory strain (D7 diploid) | Stationary | PBS (7.4) | 37 | 8 | 4507.13 (3754.07; 5260.19) | -48.212 (-93.308; -3.116) | 0.00043 (0.00035; 0.00050) |
| Chlorine dioxide - Giardia | | | | | | | | |
| USEPA (1991) | Giardia | NA | Drinking water (6-9) | 5 | 6 | 17.34 (17.07; 17.62) | -0.073 (-0.675; 0.528) | 0.11475 (0.11068; 0.11883) |
| USEPA (1991) | Giardia | NA | Drinking water (6-9) | 10 | 6 | 15.33 (14.99; 15.68) | 0.260 (-0.491; 1.011) | 0.13250 (0.12572; 0.13928) |
| USEPA (1991) | Giardia | NA | Drinking water (6-9) | 15 | 6 | 12.84 (12.56; 13.12) | 0.140 (-0.471; 0.751) | 0.15732 (0.14954; 0.16509) |
| USEPA (1991) | Giardia | NA | Drinking water (6-9) | 20 | 6 | 10.10 (9.86; 10.35) | -0.067 (-0.609; 0.476) | 0.19632 (0.18557; 0.20708) |
| USEPA (1991) | Giardia | NA | Drinking water (6-9) | 25 | 6 | 7.31 (7.22; 7.41) | 0.147 (-0.066; 0.359) | 0.27897 (0.27047; 0.28747) |
| Ozone - Yeast | | | | | | | | |
| Dubeau and Chung (1979) | Wild-type (C465-7A) | Early stationary (40h) | Distilled (7.0) | 22 | 7 | 1726.55 (1474.50; 1978.60) | 170.207 (-1.268; 341.681) | 0.00124 (0.00095; 0.00152) |
| Dubeau and Chung (1979) | Wild-type (C465-7A) | Late stationary (48h) | Distilled (7.0) | 22 | 64 | 2628.58 (2426.55; 2830.61) | 131.576 (70.184; 192.967) | 0.00070 (0.00063; 0.00077) |
| Dubeau and Chung (1979) | Wild-type (C465-7A) | Logarithmic (20h) | Distilled (7.0) | 22 | 7 | 727.96 (635.70; 820.21) | 0.592 (-166.573; 167.757) | 0.00268 (0.00218; 0.00318) |
| Dubeau and Chung (1979) | Wild-type (C465-7A) | Late stationary (48h) | YEPD broth (6.5) | 22 | 14 | 9990.68 (7882.76; 12098.59) | 137.536 (-38.655; 313.726) | 0.00018 (0.00014; 0.00022) |
| Watanabe et al. (2010) | Wild-type (NBRC1046) | Late stationary (48h) | Mineral (6.7) | 20 | 19 | 0.08 (0.03; 0.13) | -0.050 (-0.136; 0.037) | 9.87137 (5.92896; 13.81378) |
| Ozone - Giardia | | | | | | | | |
| USEPA (1991) | Giardia | NA | NS | 5 | 6 | 1.28 (1.26; 1.29) | 0.001 (-0.038; 0.040) | 1.56730 (1.51808; 1.61652) |
| USEPA (1991) | Giardia | NA | NS | 10 | 6 | 0.95 (0.95; 0.96) | -0.004 (-0.020; 0.012) | 2.08551 (2.05032; 2.12070) |
| USEPA (1991) | Giardia | NA | NS | 15 | 6 | 0.63 (0.63; 0.64) | 0.004 (-0.004; 0.012) | 3.17579 (3.13659; 3.21499) |
| USEPA (1991) | Giardia | NA | NS | 20 | 6 | 0.48 (0.48; 0.48) | 0.000 (0.000; 0.000) | 4.16667 (4.16667; 4.16667) |
| USEPA (1991) | Giardia | NA | NS | 25 | 6 | 0.32 (0.32; 0.32) | 0.000 (0.000; 0.000) | 6.25000 (6.25000; 6.25000) |