EU Contest for Young Scientists

Illustrations

Title

Optimising UV Exposure to Inhibit *Escherichia coli* Growth

Name

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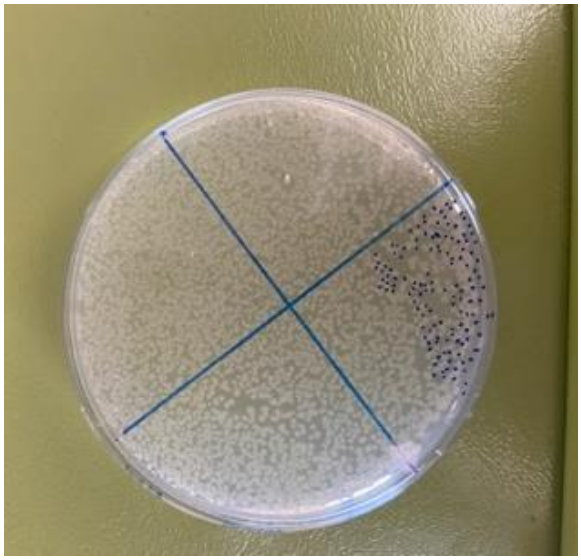
All figures presented correspond to text in the written report.

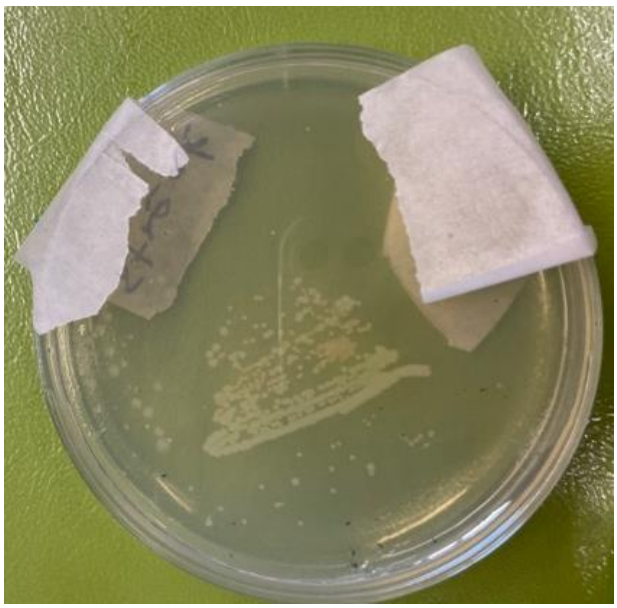
4.3. Serial Dilutions

Fig. 1. Preliminary Trial using 10^{-5} dilution



4.4. Plating Technique

Fig. 2. Preliminary Trial using streak plating



4.5. UV Lamp

Fig. 3. UV Exposure Set Up

5. Data Collection

Table 3. Number of Counted Colonies of *E. coli* after Different Exposure Times to UV Radiation ranging from 30-270 seconds increasing in 30 second intervals

	Number of Counted Colonies of *E. coli* after 24 hours Incubation				
UV Exposure Time (seconds) (±0.5s)	Trial 1	Trial 2	Trial 3	Trial 4	Average
Control - No UV Exposure	9	7	8	8	8
30	4	7	4	9	6
60	5	8	4	6	6
90	8	5	5	5	6
120	5	5	6	4	5
150	5	7	4	1	4
180	4	4	3	5	4
210	3	5	4	5	4
240	4	4	7	4	5
270	4	3	3	4	4

Table 4. Number of Counted Colonies of *E. coli* after Exposure to UV Radiation at Different Distances ranging from 15-85cm increasing in 10cm increments

	Number of Counted Colonies of *E. coli* after 24 hours incubation				
Distance of UV lamp from agar plate (cm) (±0.10cm)	Trial 1	Trial 2	Trial 3	Trial 4	Average
Control - No UV Exposure	9	9	9	7	9
15.00	9	1	4	6	5
25.00	5	6	7	5	6
35.00	6	8	14	5	8
45.00	6	7	6	10	7
55.00	10	5	3	6	6
65.00	8	6	7	6	7
75.00	7	5	9	10	8
85.00	9	7	12	10	10

5.2. Qualitative Observations

Fig. 4. Control Test for Methodology 1

Fig. 5. 150 seconds UV Exposure for Methodology 1

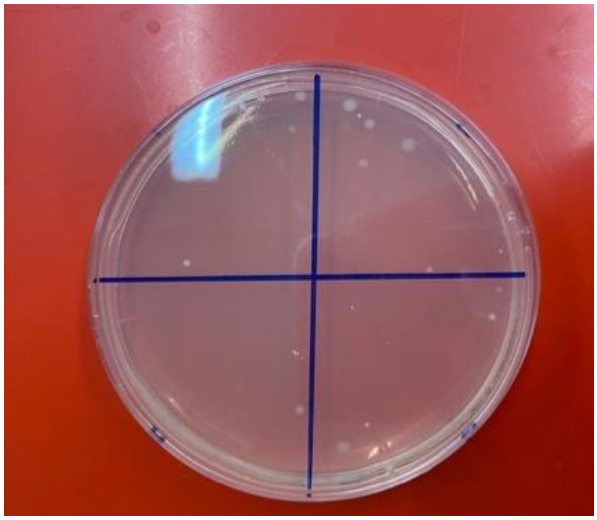
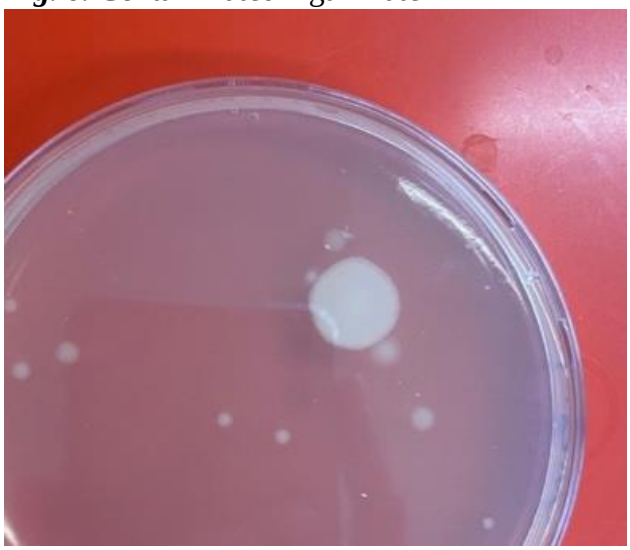


Fig. 6. Contaminated Agar Plate



6. Data Processing

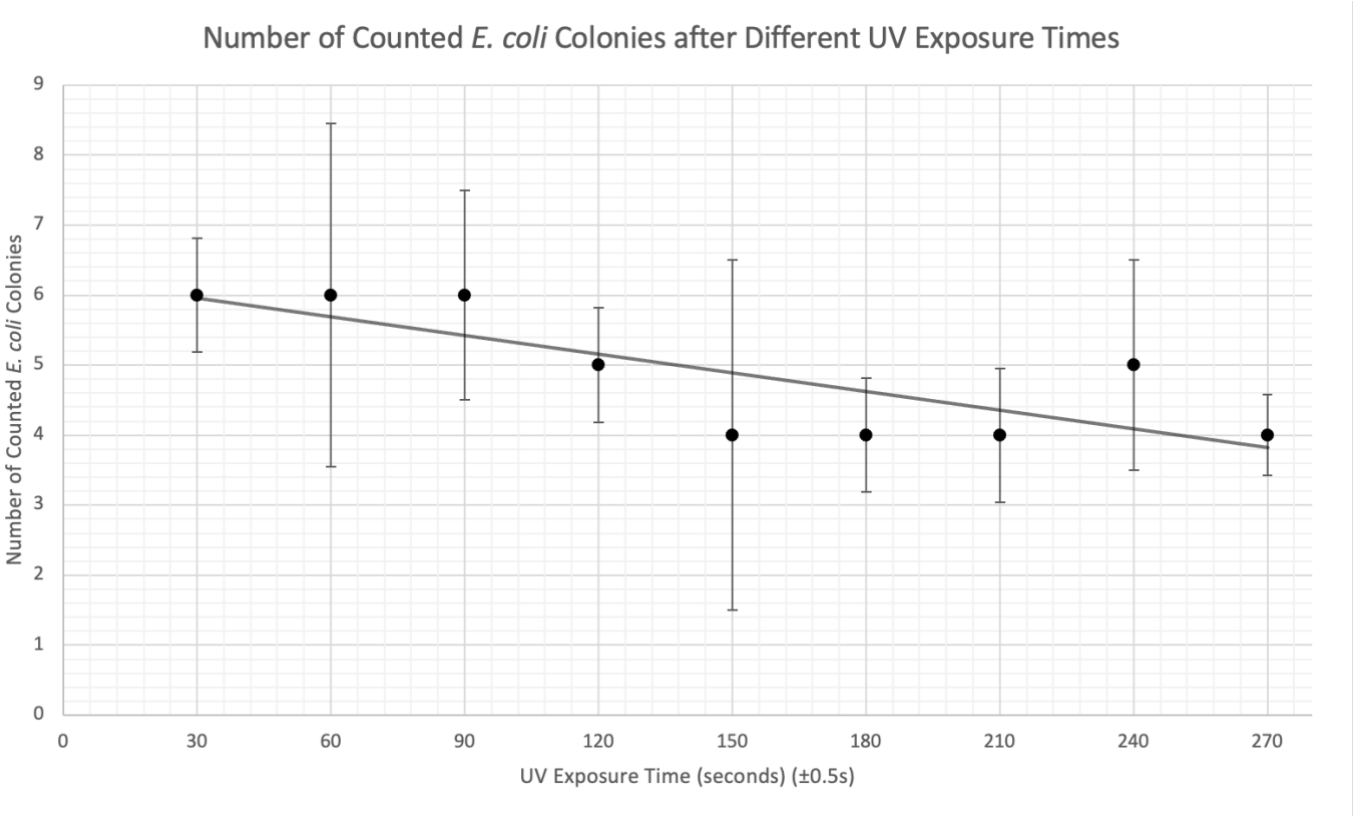


Fig. 7. Number of Colonies of E. coli after Different UV Exposure Times

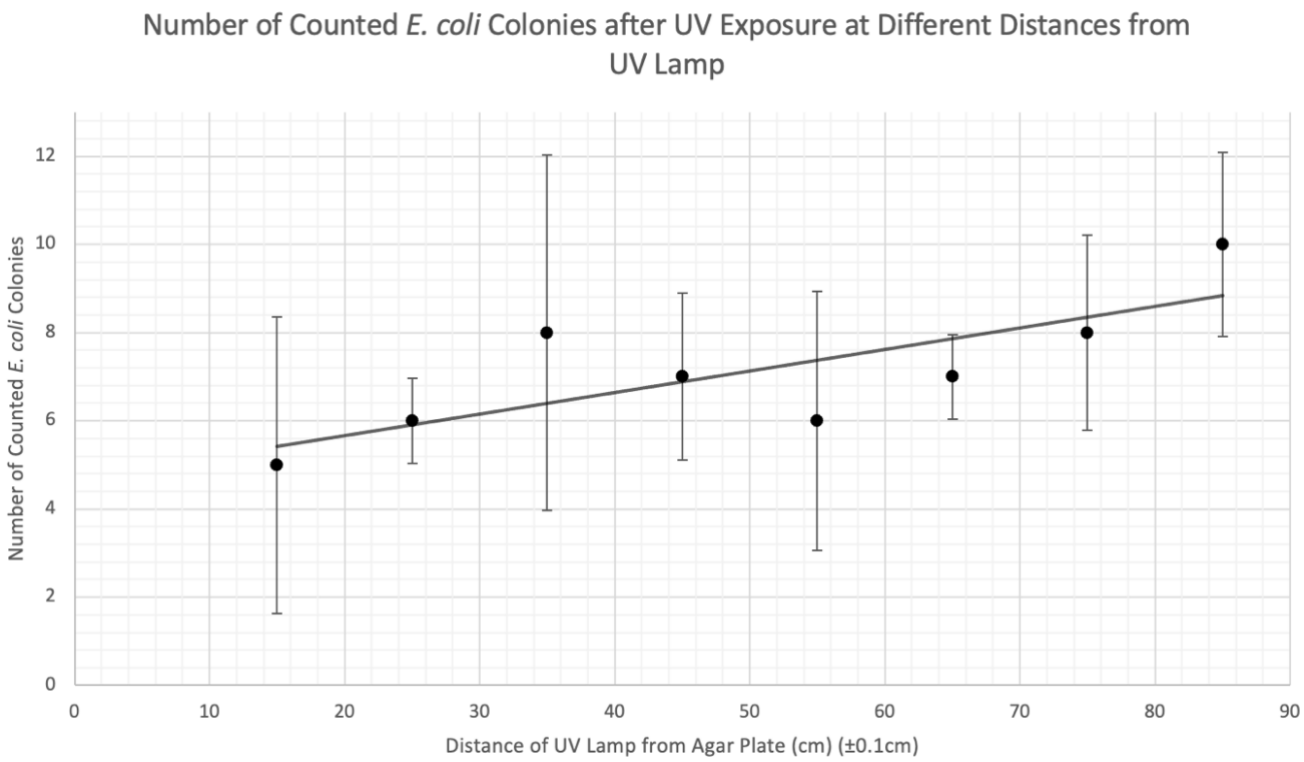


Fig. 8. Number of Colonies of E. coli after UV Exposure at Different Distances from UV Lamp