

BIOLOGY 1001- Metadata for laboratory 3: diffusion and osmosis

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Metadata for experiment

Table 1. Description of the fields needed to describe dataset creation.

Title of dataset	Diffusion and osmosis in <i>Solanum tuberosum</i> L.
URL of dataset	MUN Biology data repository https://online.mun.ca/d2l/home/343459
Abstract	We investigated the relationship between surface area to volume ratio and the rate of diffusion and osmosis in <i>Solanum tuberosum</i> L.
Keywords	Surface-area, volume ratio, osmosis rate
Lead author for the dataset	Joany Mariño
Title and position of lead author	Ph.D. Candidate
Organization and address of lead author	Memorial University of Newfoundland, Department of Biology
Email address of lead author	jmarinocoron@mun.ca
Additional authors or contributors to the dataset	NA
Organization associated with the data	Memorial University of Newfoundland
Funding	NA
License	Creative Commons
Geographic location	St. John's, Newfoundland
Time frame	March 12, 2020
General study design	Laboratory experiment that compared the rate of osmosis between two setups of potato cubes of same volume but different surface area.
Methods description	We cut one potato to produce (i) one cube of 2 x 2 x 2 cm, and (ii) eight cubes of 1 x 1 x 1 cm. Then, we placed the large potato cube in one beaker with 200 ml of distilled water and the eight smaller cubes in another beaker with the same amount of distilled water (Biology 1001 Laboratory Manual, Winter 2020)
Laboratory, field, or other analytical methods	We calculated the volume, surface area, and surface area to volume ratio for a cube in each group
Taxonomic species or groups	<i>Solanum tuberosum</i> L.
Additional information	NA

Table 2. Data dictionary. Dataset filename: osmosis-potato-data.csv. Dataset description: Diffusion and osmosis in *Solanum tuberosum* L.

Column name	Description	Units	Data format	Missing data code
Size of cube(s)			Large/Small	NA
Length, height and width of potato cube(s) – (a)	Measurement of the length of each side of the cube	cm	1	NA
Surface area of cube(s)	$6 * a^2$	cm ²	6	NA
Volume of cube(s)	a^3	cm ³	1	NA
SA/V of cube(s)	Surface area to volume ratio	-	0.16	NA

Marking

Table 1 (50 points): relevant information of the dataset is given (i.e. the what, when, where, and how of data collection). Includes contact information for author and how to find and access the data.

Table 2 (50 points): all columns of the dataset are accurately described. Filename of the dataset is given.

Reference

Authors' template for metadata in *Limnology & Oceanography Letters*. Available at: <https://aslopubs.onlinelibrary.wiley.com/hub/journal/23782242/about/author-guidelines#data>