Edexcel Biology IGCSE

4.2 Estimating Population Size

Practical notes

Estimating population size

Aim

Investigate the population size of an organism in two different areas using quadrats.

Equipment

- Frame quadrat (25 cm by 25 cm)
- Tape measures
- Clipboard
- Pen
- Paper

Method

1. Use a random number generator to obtain 2 numbers, which are to be used as coordinates to find a location on the 2 tape measures set up.
2. Set down the quadrat at the coordinates.
3. Identify the required plant species in the quadrat. Count and record the number of individuals of the species in the quadrat.
4. Repeat steps 1-3 to take 9 more samples.
5. Estimate the population size using this formula:

   (total area / area of quadrat) x mean number of individuals counted per quadrat
6. Repeat the procedure in another size and compare the population size of the organism in the 2 sites.

Controlled variables

- Size of quadrat
- Number of quadrats at each site
- Coordinate system
- Method of counting

Potential Hazards

Potential allergies, cuts and stings.
Wash hands thoroughly after the experiment.
Wearing gloves may be necessary for those with allergies.