Edexcel (B) Biology A-level

CP16 - Effect of an abiotic factor on distribution and morphology of one species

Flashcards

What is an abiotic factor?

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It is a non-living or physical factor.

List 3 abiotic factors.

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Light intensity

Humidity

Temperature

Wind speed

Water supply

Day length

Nutrient supply

Rainfall

How is percentage cover calculated?

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- Use a quadrat with squares.
- Count how many squares the required species is present in (only count a square if more than half of the square is covered).
- Divide this by the total number of squares available.
- Multiply by 100 to convert into a percentage (%).

Outline the procedure to this practical when finding the effect on distribution.

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1. Choose an abiotic factor e.g. light intensity.
2. Choose an area that has a clear light intensity gradient.
3. Lay a 20m tape measure on the ground from the area with sunlight to the shaded area.
4. Choose a species that changes in abundance along your transect.
5. Place a quadrat at the 0m mark.
6. Measure light intensity at the 0m mark within the quadrat (at ground level).
7. Record the abundance of your chosen species by counting how many organisms are present. Record this in a table.
8. Repeat steps 5 and 6 every 2 metres along the tape measure until you reach the end of the 20m.
9. Repeat steps 3-7 by creating another 2 transects between the area with sunlight to the shaded area.

Describe an alternative way of measuring abundance.

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You can work out percentage cover.

However, this is an **estimate** of abundance so it is less accurate.

What is a null hypothesis?

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A hypothesis which states there is no **significant difference** between two variables and that the difference observed is purely due to chance or error.

How can the results be used to determine the relationship between the chosen factor and the morphology of a species?

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You can carry out statistical tests such as:

- **T-test**: find out if there is a significant difference between 2 levels of the independent variable
- **Spearman's rank**: find out if there is a correlation between many levels of the independent variable.

What is the difference between a risk and a hazard?

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The hazard describes the potential **source** of harm, whereas the risk describes the **likelihood** of the harm occurring.