**AIM:**

To index the diversity of a chosen region of land using Line Transect as the sampling method.

**MATERIALS:**

10 m rope, 1 m stick, a pair of scissors, a record notebook.

**THEORY:**

Line transect is a sampling method employed in regions where there are clear environmental gradients. It involves systematic sampling where samples are taken at fixed intervals along a line.

Different line transects can be employed in the given land area. The diversity in the plant species can be quantitatively or qualitatively established, once data is acquired.

**PROCEDURE:**

1. Chose a land area to be studied, and stretched the rope tying it to one end of a nearby tree.
2. Using the 1 m long stick, demarcated a metre long stretch and noted the different plants found just below it.
3. Took samples of all the species found for identification.
4. Repeated for the next nine metres.
5. Repeated for two more transects. In the same area.

**DATA:**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Transect 1 | Transect 2 | Transect 3 |
|  |  |  |
| Cannabis | Lavender | Recinus |
| Cannabis | Mustard | Valtheria |
| Cannabis | Mustard | Dandelion |
| Amaranthus | Valtheria | Amaranthus |
| Dhub Grass | Valtheria | Bean family - Leguminous |
| Valtheria | Guava | Valtheria |
| Guava | Valtheria | Cannabis |
| Valtheria | Eucalyptus | Recinus |
| Amaranthus | Oxalus | Babool |
| Amaranthus | Amaranthus | Amaranthus |
| Amaranthus | Dhub Grass | Babool |
| Mustard | Dhatura |  |
| Mustard |  |  |
| Dhub Grass |  |  |

TRANSECT-1

|  |  |
| --- | --- |
| cannabis | 3 |
| amaranthus | 4 |
| dhub grass | 2 |
| valtheria | 2 |
| guava | 1 |
| mustard | 2 |
| TRANSECT-2  lavender | 1 |
| mustard | 2 |
| valtheria | 3 |
| guava | 1 |
| eucalyptus | 1 |
| oxalus | 1 |
| amaranthus | 1 |
| dhub rass | 1 |
| dhatura | 1 |

TRANSECT-3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Recinus |  |  |  |  | 2 |
| Valtheria |  |  |  |  | 2 |
| dandelion |  |  |  |  | 1 |
| amaranthus |  |  |  |  | 2 |
| bean family |  |  |  |  | 1 |
| cannabis |  |  |  |  | 1 |
| babool |  |  |  |  | 2 |
|  |  |  |  |  |  |

Habitat Distribution

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| cannabis |  |  |  |  | 4 |
| amaranthus |  |  |  |  | 7 |
| dhub grass |  |  |  |  | 3 |
| valtheria |  |  |  |  | 7 |
| guava |  |  |  |  | 2 |
| mustard |  |  |  |  | 4 |
| lavender |  |  |  |  | 1 |
| eucalyptus |  |  |  |  | 1 |
| oxalus |  |  |  |  | 1 |
| dhatura |  |  |  |  | 1 |
| recinus |  |  |  |  | 2 |
| dandelion |  |  |  |  | 1 |
| bean family |  |  |  |  | 1 |

**CONCLUSION:**

From the histograms plotted above, one can observe that in the chosen plot of land, Amaranthus and Valtheria are the most common plant species found, while Eucalyptus, Lavender, Oxalus, Dhatura, Dandelion and Bean are less commonly observed.

If the data for the numbers for each plant species is collected, then one can quantitatively establish the diversity of the land plot, by calculating Shanon-Wiener Index. The above plots however are successful in qualitatively establishing this.