# Expt: 3 Study of plant population frequency by quadrat method

**Aim:**

To study the plant population frequency by quadrat method.

**Materials Required:**

Nail.

Thread

Hammer

**Procedure:**

In the selected site of study, make a 1 m x 1 m quadrat with the help of nails and thread and divide it into sixteen quadrats, each consists of 25 square meter.

Hammer the nails firmly and make sure that the vegetation is not damaged while laying the quadrat.

List the names of the plant species seen in each quadrat (if the name is not known mark these as species A or B etc., and the same species if seen in other quadrats assign the same alphabet).

Count the number of individuals of each species present in the quadrat and record the data in a table.

**Observations**:

Record the total number of species seen in the ten quadrats.

This will give an idea about the composition of the vegetation.

There will be difference in the species composition in the quadrats made in shady areas, exposed areas with bright sunlight, dry or wet areas etc.

| Sl. No | Plant Species | QUADRAT | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. of individuals per quadrat | | | | | | | | | | | | | | | | | |
| | | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **Total Species** | **Total Quadrats** |
| **1** | ***Azadirachta indica*** | 1 | | 3 | | 4 | | 1 | 3 | 1 | | 3 | 1 | | 3 | 2 | | **22** | **10** |
| **2** | ***Bougainvillea spectabilis*** | | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | | 1 | **20** | **14** |
| **3** | ***Caesalpinea pulcherrima*** | | 1 | | | 1 | | 2 | | 1 | | 2 | | 1 | | 2 | 2 | **12** | **8** |
| **4** | ***Clerodendron inerme*** | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **17** | **16** |
| **5** | ***Mangifera indica*** | 1 | | | 1 | | 2 | | 1 | | | 1 | | 1 | | 1 | | **8** | **7** |
| **6** | ***Pithecolobium dulce*** | 2 | | 3 | | 4 | 3 | 4 | | 3 | 2 | | 3 | 3 | 2 | | 3 | **32** | **11** |

| Quadrat Result | | | | | | |
|---|---|---|---|---|---|---|
| Sl.No | Plant Species | Total number of individuals in all the Quadrats | Total no. of quadrats in which the sps. occurred | Total no. of quadrats studied | Population Density | Frequency Percentage |
| | | **N** | **A** | **B** | **N/B** | **A/BX100** |
| **1** | ***Azadirachta indica*** | 22 | 10 | 16 | **1.38** | 62.5 |
| **2** | ***Bougainvillea spectabilis*** | 20 | 14 | 16 | 1.25 | **87.5** |
| **3** | ***Caesalpinea pulcherrima*** | 12 | 8 | 16 | 0.75 | 50 |
| **4** | ***Clerodendron inerme*** | 17 | 16 | 16 | 1.06 | **100** |
| **5** | ***Mangifera indica*** | 8 | 7 | 16 | 0.50 | 43.75 |
| **6** | ***Pithecolobium dulce*** | 32 | 11 | 16 | **2.00** | 68.75 |
| **7** | ***Ficus benjamina*** | 5 | 3 | 16 | **0.31** | 18.75 |

**Conclusion:**

The frequency of the plant population is calculated by the following equation:

$$\text{Frequency} = \frac{\text{Total number of quadrats in which the species occurred (A)}}{\text{Total number of quadrats studied (B)}} \times 100$$

$$\frac{16}{16} \times 100 = 100$$

On the basis of % frequency, the community is being dominated by the species: ***Clerodentron inerme.***

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