

Experiment No. 13

Weed Vegetation Analysis

13.1 Objectives

To learn about weed sampling

13.2 Procedure

Select a field where the various weed management practices have been used. The instructor will assign the sampling size to different groups. Use the quadrat samplings for the determination of the following quantitative estimates. In list or census quadrat method, individual weed species are listed and actual number of species per unit area is counted. It is easier to account the number of annual weed species. The rooted sprouts of individuals are considered as individual number in case of weed species propagated by vegetative means. Care should be taken to count the species which roots remain with the quadrats only.

13.3 Non-destructive method

1. **Weed density:** Count the number of individuals of a particular weed species per unit area and determine the relative density.

$$\text{Absolute density} = \frac{\text{Total number of individuals of a species in all quadrants}}{\text{Total number of quadrants used}}$$

2. **Relative density:** Relative density is the study of numerical strength of a species in relation to the total number of individuals of all the species. It can be calculated in following way.

$$\text{Relative density} = \frac{\text{Absolute density of a species}}{\text{Total absolute density of all species}} \times 100$$

3. **Frequency:** This is the degree of dispersion of individual species in an area and represents the number of sampling units in which the particular species occurred. It is expressed in terms of percent occurrence.

$$\text{Frequency} = \frac{\text{Absolute frequency of a species}}{\text{Total number of quadrants used}} \times 100$$

4. **Relative frequency:** The degree of dispersion of individual species in an area in relation to the number of all the species occurred. It can be determined from the absolute frequency by the following formula

$$\text{Relative frequency} = \frac{\text{Absolute frequency of a species}}{\text{Total of absolute frequency of all species}} \times 100$$

5. **Weed abundance:** It is the study of the number of individuals of different species in the community per unit area. By quadrats method, samplings are made at random at several places and the number of individuals of each species was summed up for all the quadrats divided by the total number of quadrats in which the species occurred. It is represented by the equation.

$$\text{Weed abundance} = \frac{\text{Total number of individuals of a species in all quadrates}}{\text{Total number of quadrates in which the species occurred}} \times 100$$

6. **Relative abundance:** It is the abundance of a species (by any measure) divided by the total abundance of all species combined.

Relative abundances can be expressed as a percentage.

$$\text{Relative abundance} = \frac{\text{Total absolute abundance of a species}}{\text{Total absolute abundance of all species in all species}} \times 100$$

$$\text{Relative abundance} = \frac{\text{Total number of individuals of a species in all quadrats}}{\text{Total number of individuals of all species in all quadrats}} \times 100$$

Table 13.2 Calculation of following parameters given in table

[illegible]

13.4 Conclusion

Signature of faculty