II/III

Ecosystem

Productivity —

The rate of biomass production is called Productity. It's unit is $(gm^{-2})yr^{-1}$ or $(Kcal\,m^{-2})yr^{-1}$ to compare the productivity of two different ecosystem.

Types of Productivity →

(1) Primary Productivity — The rate at which radiant energy is stored By Photoautotrophs & Chemoautotrophs. It is of two Types —

(a) Grass Primary Productivity (GPP) —
It is the rate of organic Matter synthesized by Producer Per unit area Per unit Time.

(b) Net Primary Productivity (NPP) —
It is the rate of organic Matter built up or stored by Producers in their body Per unit time & area

NPP = GPP − Respiratory loss

(2) Secondary Productivity —
It is the rate of increase in biomass by heterotrophs or consumer Per unit time and area. It is available to carnivore level.

(3) Community Productivity — It is the rate of Net synthesis of built up of organic matter by a community per unit time & area.

(4) Ecological efficiency —

$$\frac{\text{Energy converted into biomass at a Trophic level}}{\text{Energy present in biomass at lower Trophic level}} \times 100$$

Notes

(5)- Photosynthetic efficiency- $\frac{\text{Gross Primary Productivity}}{\text{Incident total Solar Radiation}} \times 100$

(6)- Net Production efficiency- $\frac{\text{Net Primary Productivity}}{\text{Gross Primary Productivity}} \times 100$

NoTe- Respiratory loss gradually increases in successive Trophic levels. It is 20%, 30% & 60% respectively at Producer, Consumer, & Top carnivore level.

Standing state - Amount of all the inorganic substance present in an ecosystem per unit area at a Given Time.

Standing Crop - Amount of living material present in different Trophic levels at a given time. It is Commonly expressed as the number of organism per unit area.

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December

M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	8	9	10	11	12	13
15	16	17	18	19	20	21	22	23	24	25	26	27
29	30	31										