

Mutualism – A mutually beneficial relationship between different organisms.

Fungus and algae merge to form lichen. The fungus builds a protective structure that the algae can live in and photosynthesise. The alga is a producer which provides the carbohydrates for the two. The fungus is a decomposer so provides nutrients for the both by decomposing organic material.

Managing succession: By harvesting fast growing tree at the correct size and age, foresters can maximise sustainable wood production. It also maximises biodiversity, which is greatest during succession. It increases the number of useful plants and provides more habitats for animals.

In some places succession is controlled for aesthetic value e.g. Lake District.

Ponds are not permanent features and they silt up with dead leaves and soil so they dry out. Human activity reduces the number of ponds that can form. Old ones are maintained by dredging which prevents them from silting up. Saving a valuable habitat and maintaining biodiversity.

Energy and recycling:

Photoautotrophs – Something that makes organic molecules using photosynthesis.

Chemoautotrophs – Something that makes organic molecules using chemical reactions.

Saprophytes – A microorganism that feeds on the remains of dead plants and animals using extracellular digestion to break down the remains.

Parasites - an organism which lives over on another organism and benefits by deriving nutrients at the other's expense.

Detritus - organic matter produced by the decomposition of organisms.

Detritivore - an animal which feeds on dead organic material, especially plant detritus.

Humus – Dead organic matter.

Trophic level – A stage in a food chain.

5 things plants need to grow: Light, water, carbon dioxide, minerals and a suitable temperature.

Main components of soil: Water, dead plants and animals (humus), sand, air and bacteria and fungi.

Main components of faeces: Bacteria (E.coli), undigested food and gut lining cells.

- A photon of light hits a molecule of chlorophyll which gets excited – raised to higher energy level.
- Chlorophyll emits 2 high energy electrons which pass along an electron transport chain.
- This electron transport chain makes ATP and NADPH.
- Water is split – photolysis. $2\text{H}_2\text{O} \rightarrow 4\text{e}^- + 4\text{H}^+ + \text{O}_2$
- This provides replacement electrons for the chlorophyll, so photosynthesis can continue.

The light independent reaction:

This process happens in the stroma in the centre of the chloroplast.

What goes in:

- NADPH
- ATP
- Carbon dioxide

What comes out:

- Glucose
- NADP^+
- ADP and inorganic phosphate

Carbon dioxide is accepted by ribulose biphosphate to form 2 molecules of glycerate3phosphate

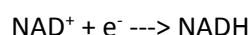
ATP and reduced NADPH are required in the reduction of GP to triose phosphate

RuBP is regenerated 1 to the Calvin cycle 5 out of 6 times. Triose phosphate is converted into useful organic molecules 1 in 6 times.

Limiting factor – A factor which if increased will increase the rate or a factor which is in short supply.

Respiration:

The release of energy from organic molecules.



Coenzyme + electron $\rightarrow$ reduced coenzyme

Respiration is a series of oxidation reactions that remove electrons from the original organic molecule. These electrons are picked up by NAD so NADH is an electron being carried.

Preview from Notesale.co.uk
page 11 of 13