Plant Physiology:Lab(3)

Diffusion

The third stage

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Diffusion

- The movement of ions or molecules from a region of high concentration to a region of low concentration.
- This movement dependent , or due to the (kinetic energy) Properties :-
- 1.Movement in one way direction from high pressure region to low pressure.
- 2.Does not require energy.
- 3.Diffusion stop when concentration on both sides equal.
- 4.Diffusion of one compound is independent to diffusion of other.
- 5.Molecules continue to move, but no change in net concentration.
- 6.Equilibrium is reached.
- **Facture affection difflsion:-**
- 1. Size of particles.
- 2.Rate of diffusion as the concentration difference increase.
- 3.Temperature when temperature increased, the kinetic energy of particles increased , and the diffusion is increased.
- 4.The solubility:- the greater solubility ofparticles or molecules in the media the faster it will diffuse.
- 5.The rate of diffusion decrease when molecules must travel alonger distance in their search for equilibrium

The importance of diffusion in plant life:-

- 1.It is an essential process in exchange of gases (02 and C02) during respiration and photosynthesis
- 2.Up take of minerals is affected by diffusion.
- 3.It helps in removal of excess water by the process of transpiration.
- 4.Translocation of organic solutes also take place by diffilsion means.
- 5.Fragrance of flowers spread in air by diffusion means attracts insects to pollination.
- **The diffusion in gases faster than in liquids, and in liquids faster than in solid.**
- **The diffusion of solid substances in solid medium, and in liquid medium.**
- Exp. I. : 2 dishes, containing agar.
- First one we put potassium brameante (58 m.w). and the second one we put iodine potassium(204 m.w).
- When comparing diffusion between the two above we see that potassium bramneant faster in diffusion, comparing with iodine potassium , because their weight less than other.
- Exp. 2. : 2 tubes, contain water.
- First one we put potassium bramneant and second one weput ioden potassium.
- When comparing diffusion between the two above, we see that potassium bramneant diffuses faster than iodine potassium, because its weight is less.