1(d). Basic aspects of relative humidity, cloud cover and their application in crop production
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The actual gaseous form of moisture content in the atmosphere is expressed as humidity. The actual moisture content in the atmosphere would be around 4 to 7 per cent and their life time is 7 to 10 days. It plays a significant role in weather and climate of a region. Among the three moisture components in the atmosphere(precipitation,evaporation and humiidity) humidity is very important

Types of Humidity

- Absolute humidity; Mass of water vapour per unit volume of air

- Specific humidity; Mass of water vapour to the mass of moist air in which the mass of water vapour is contained.

- Relative humidity; Per cent of water vapour present in the air in comparison with saturated condition at a given temperature and pressure

Relative Humidity(RH) and Crop Production

- High RH increase leaf temperature and with closure of stomata , the entry of Co_2 found reduced.

- Reduced transpiration reduce the translocation of food material and also the uptake of nutrients

- Optimum RH for crop growth: 40-60%

- High RH is useful to C_4 plants as compared to C_3 plants

- RH and pest and disease interaction

Instruments used

- Wet and dry bulb thermometer
- Whirling psychrometer
- Hygrometer
- Hygrographs(auto)
- Sensors

Types of Clouds

Types of clouds	Details
Low clouds	Up to 2km in the troposphere(Stratus ,cumulus ,cumulo-nimbus
Middle clouds	From 2 to 7 km in the troposphere(Alto –cumulus , alto-stratus, nimbo-startus)
High clouds	From 7 to13 km in the troposphere (Cirrus, Cirro-cumulus,Cirro-stratus)

Cloud Cover

Reason for cloud formation;

- Increase in temperature would increase the capacity of the air to hold water as water vapor. This increase encourage cloud formation. This reduces radiation receipt and provide cooling effect. In a clear season cloud formation is due to increase in Co_2 and aerosols, which is ecologically undesireful.

- Cloud cover is expressed in Octa and the scale is from 1 to 8.This can be calculated from bright sunshine hours and also from the experiential observation.

- Cloud cover vs .Pest and disease