

NAME OF THE INSTRUMENT: DEW GAUGE

➤ **DEW:**

- Dew is water in the form of droplets that appears on thin, exposed objects in the morning or evening due to condensation.
- Dew is formed if the ground temperature falls because of its continuous loss of heat by long wave radiation. The air in contact with earth's surface is chilled and when the temperature falls below the dew point temperature of the air, the water vapour in the air condenses on the ground as dew.

➤ **PURPOSE OF MEASUREMENT:**

- Dew is an important source of soil moisture during non-rainy season especially in arid and semi-arid region.

➤ **UNIT OF DEW:**

- Millimeter

➤ **LEAST COUNT:**

- 0.025 mm

➤ **TIME OF OBSERVATIONS:**

- In the morning before sunrise

➤ **PERIOD OF OBSERVATION:**

- Dew is recorded only during winter season (except for the hill station where it forms round the year).
 - Hence dew should be recorded during **September to March**.
 - During summer season dew does not form due to higher temperatures.
 - During the rainy season it cannot be distinguished from rain droplets, hence is not recorded.
- ### ➤ **MECHANISM:**
- The bare soil cools more slowly than vegetation because of the upward flow of heat and the existence of thermal insulation by air within the crop canopy.
 - Thus dew forms more on the vegetation than on the bare soil.

- Dew formation would be more on calm or light windy night when the mixing of air would be low.

➤ **DETAILS OF EQUIPMENT:**

- The dew is measured by **DUV-Devani Dew Gauge and a dew album**.
- The dew gauge is exposed in the open on a stand at about sunset.
- There are rectangular wooden blocks of dimension 32 cm X 5 cm X 2.5 cm coated with red oxide which favours retention of dew deposits on it.
- These blocks are kept on a stand at specified heights like 5, 25, 50 and 100 cm from ground level.



➤ **MEASURING PROCEDURE:**

- Deposited dew is now compared with a set of photographs contained in the dew album.
- Dew album having numbers of 1 to 10, out of which 1 to 8 refer to dew, 9 refer to dew and rain together and 10 refers to rain.
- By knowing the dew scale number, it is possible to measure dew.
- The drop of rain is of spreading nature whereas; the drop of dew is something like pearl shape.

➤ **FAVOURABLE CONDITIONS FOR DEW FORMATION:**

- Clear night sky (to allow maximum loss of heat by long wave radiation).
- More moist air from sunset onwards (R.H. > 75%).
- Calm or light wind