

NAME OF THE INSTRUMENT: ANEMOMETER

➤ PURPOSE OF MEASUREMENT:

- Wind speed is measured with the help of cup counter anemometer.
- Wind velocity is an important meteorological factor which affect agricultural operations in a several ways.
- Wind velocity increases crop water requirements by increasing evapotranspiration due to removal of accumulated humid air near the leaves.

➤ UNIT OF WIND SPEED:

- km/hr

➤ LEAST COUNT:

- The range of cyclometer is from 0 to 9999.
- The four black figures give whole km and the red figure to the right gives tenths of km.

➤ TIME OF OBSERVATION:

- 07:18 hrs and 14:18 hrs

➤ DETAILS OF EQUIPMENT:

- Anemometer consists of 3 hemispherical cups fixed to the end of metal arms from a central point.



- The Anemometer is installed on a metal pipe, which is fixed on a masonry structure.
- The height from the centre of the anemometer cups is 10 ft above ground level.
- The cup wheel is pivoted at the centre to a vertical spindle passing through a brass tube attached to the anemometer box.

- The cups rotate in anti-clock direction.

➤ PRINCIPLE:

- The cups are set in motion due to pressure difference occurring between convex and concave surfaces of the cups.
- The vertical spindle about which the cups rotate is connected to a mechanical counter called as cyclometer through a gear system from which the number of rotations are counted and converted into speed calibrated in km/hr.

➤ MEASURING PROCEDURE:

- Note down the cyclometer reading at 07:18 hrs. and 14:18 hrs.
- Subtract the reading at 07:18 hrs of the previous day from that at 07:18 hrs of the observation day.
- Divide the difference by 24 to get the mean daily wind speed for the observation day.

➤ MEASUREMENT OF INSTANTANEOUS WIND SPEED:

- Note down two readings from anemometer at an interval of three minutes.
- Multiply the difference by 20 to get wind speed at the time of observation in km/hr.

➤ CARE AND MAINTENANCE:

- Every week put two to three drops of clock oil in the foot bearing and in the worm.
- Once in every two months fill the house of top bearing with grease.
- Once in every six months all the parts of the instrument should be examined and the bearing should be thoroughly washed, cleaned and lubricated.