

TREE MEASUREMENT

MEASUREMENT OF DIAMETER AND
GIRTH

TREE MEASUREMENT

- **Forest Mensuration:** *is that branch of forestry which deals with the determination of dimensions (diameter, height, volume etc.), form, age and increment of single trees, stands or whole woods either standing or felled.*

TREE MEASUREMENT

- **Object:** (a) Basis for sale
- (b) Basis of management
- (c) Measurement for forest research
- (d) Measurement for planning
- **Scope:** includes foresters, contractors, general public, saw millers etc.
- Applied to problems of wildlife, watershed management, insect and disease control, recreation, tourism etc.

TREE MEASUREMENT

- **Accuracy:** Not a very high degree of absolute accuracy is required
- -Characteristic of trees
- -Varying methods and conditions of felling and conversion
- -Instruments and conditions in which they are used
- - Personal bias of estimator
- Biological character of the forest
- -End use to which measurements are put
- -Cost

MEASUREMENT OF DIAMETER

- OBJECT: To estimate the quantity of timber, firewood or any other forest produce (such as *katha* from *khair* tree)
- PLACE OF MEASUREMENT : In case of logs dia is measured at thin, thick and/or middle of log
- In case of standing tree it is measured at breast height.
- It is called DBH (or GBH). These are normally OB measurements

MEASUREMENT OF DIAMETER

- STANDARD RULES FOR DBH MEASUREMENT
- On level ground
- On sloping ground
- Abnormal stem
- Forked tree
- Buttressed tree

MEASUREMENT OF DIAMETER

- Instruments:
- Tape
- Calliper
- Diameter and girth classes
- Conversion of DOB to DUB
- $g = g' - 2\pi t$, $g = g_{ub}$, $g' = g_{ob}$, $t =$ bark thickness
- -ness

MEASUREMENT OF HEIGHT

- **DEFINITION:** *Total height of standing tree is the straight line distance from tip of the leading shoot to the ground level.*
- Bole height
- Commercial bole height
- Height of standard timber bole.
- Stump height

MEASUREMENT OF HEIGHT

- Methods of measurement of height of trees:
- Ocular method
- Non-instrumental methods-
- Shadow method
- Single pole method
- Trigonometric methods
- Tangent method
- Sine method

MEASUREMENT OF HEIGHT

- Instrumental methods:
- **Abney's Level:** the instrument is used not only for measurement of height of trees but also for road alignments and contour surveys.
- **Haga altimeter:** this a useful instrument to measure height of trees without the help of trigonometric tables.