2.   Forecast of future yields…

Require tables which may give Yield of Stand on

unit area basis

depends mainly on

1.   Stand structure

2.   Stand growth

3.   Stand density

4.   Productive capacity of site, "site quality"

Stand prediction

in

Un-Even aged or **mixed species stand**

$\downarrow$

Stand prediction

in

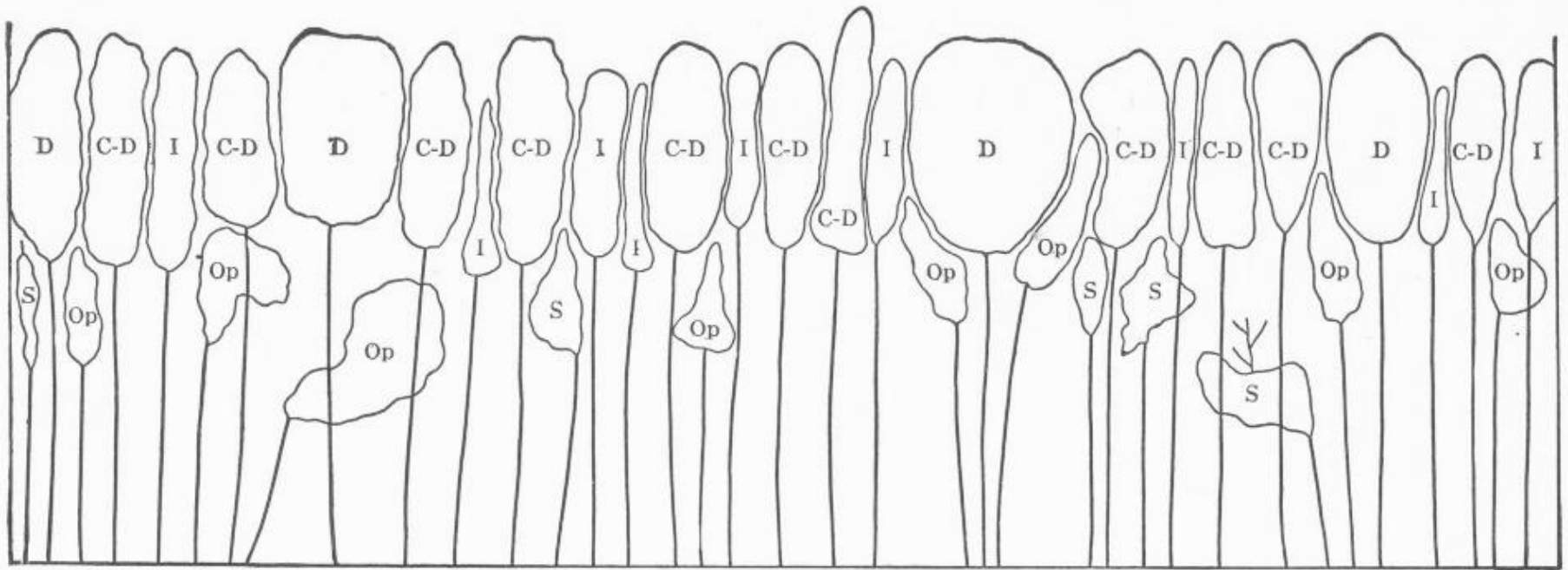**Even aged** **single species stand**

$\downarrow$

Yield table...

# Yield Table

Definition

Tabular statement

- Summarizes on unit area basis
  - all the essential data relating to the development **at periodic intervals** of a **fully-stocked** and **regularly thinned , even aged crop**
- Not applicable to uneven aged forest (Natural Forests)

Stand Before Thinning

A 50-year-old evenaged stand of hardwoods before thinning. See Figs. 53, 54, 55 and 56 for the same stand after low thinnings of various grades of severity. The letters indicate the crown classes of the trees.

A-Grdae Thinning
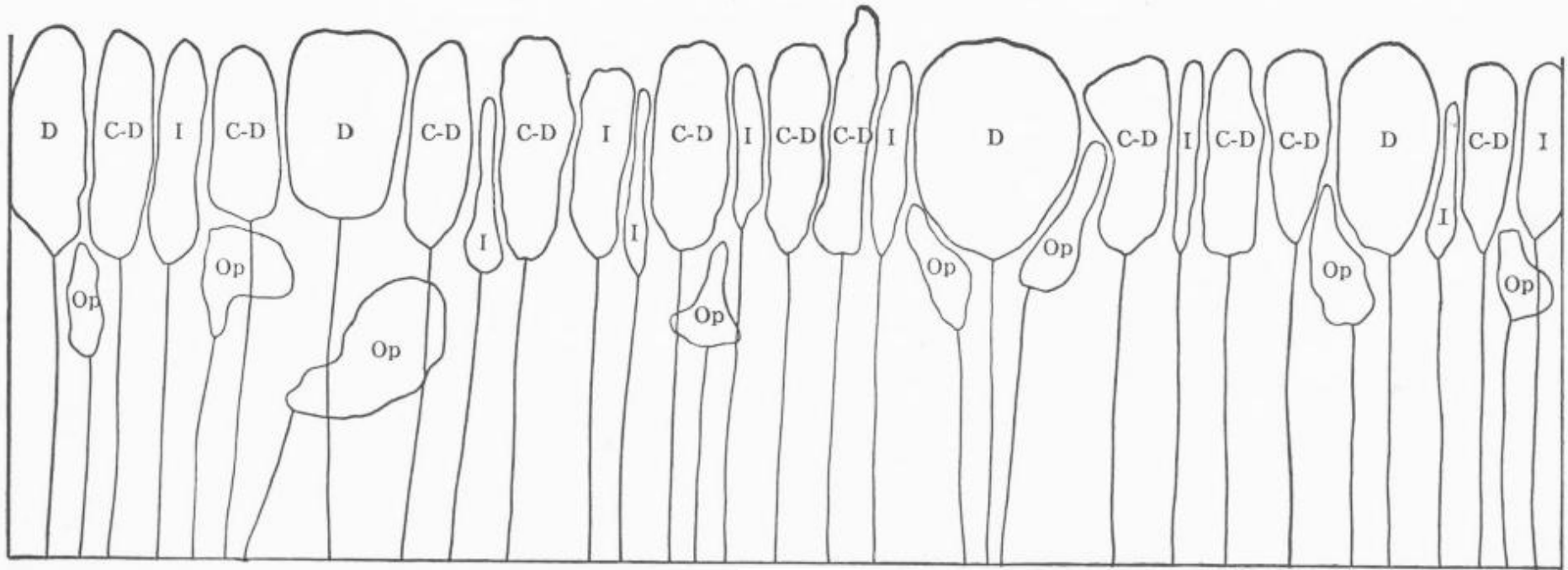
An A grade thinning has been made removing suppressed trees.
Note that the forest canopy has not been broken.

B-Grdae Thinning
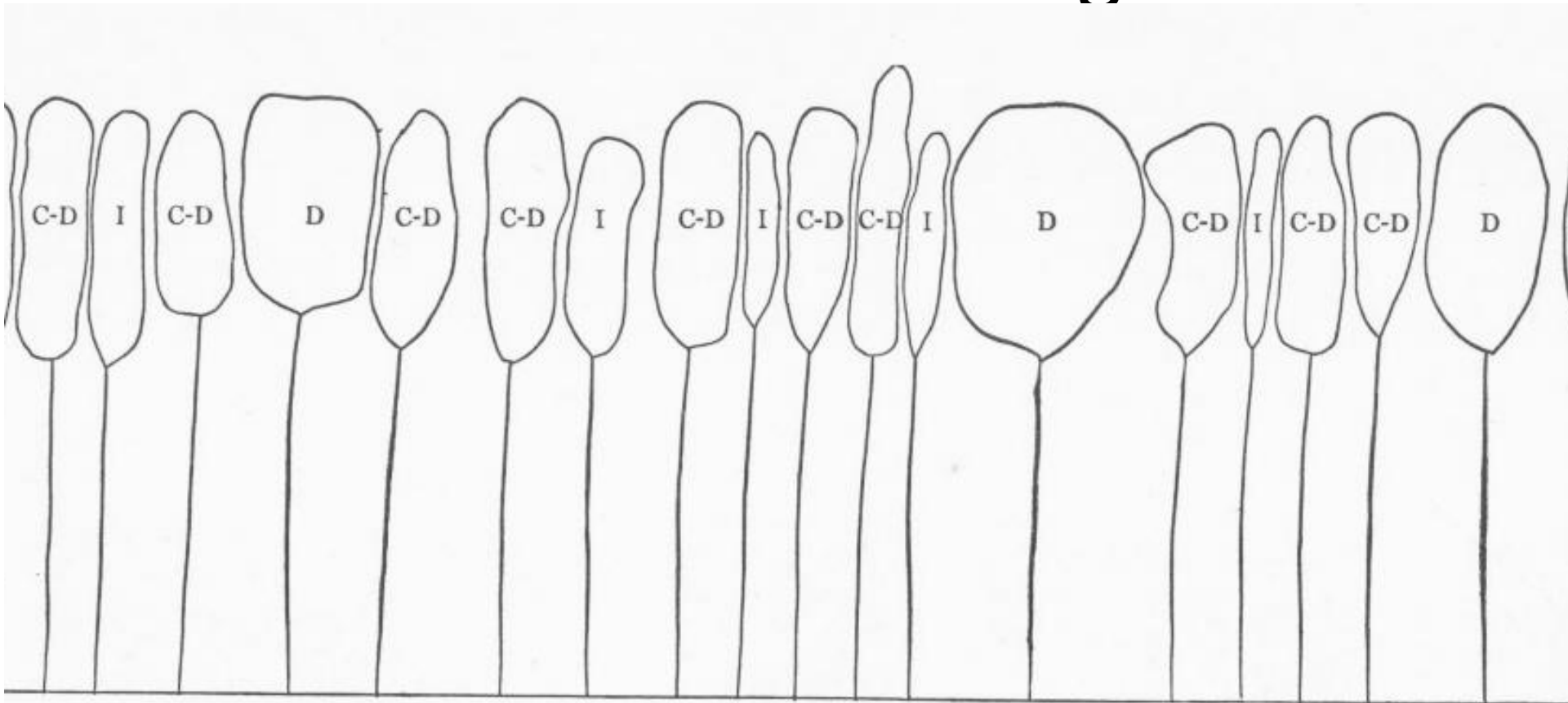
A B grade thinning has been made removing suppressed, oppressed and the poore
intermediate trees.   The forest canopy is still practically unbroken.

C-Grdae Thinning
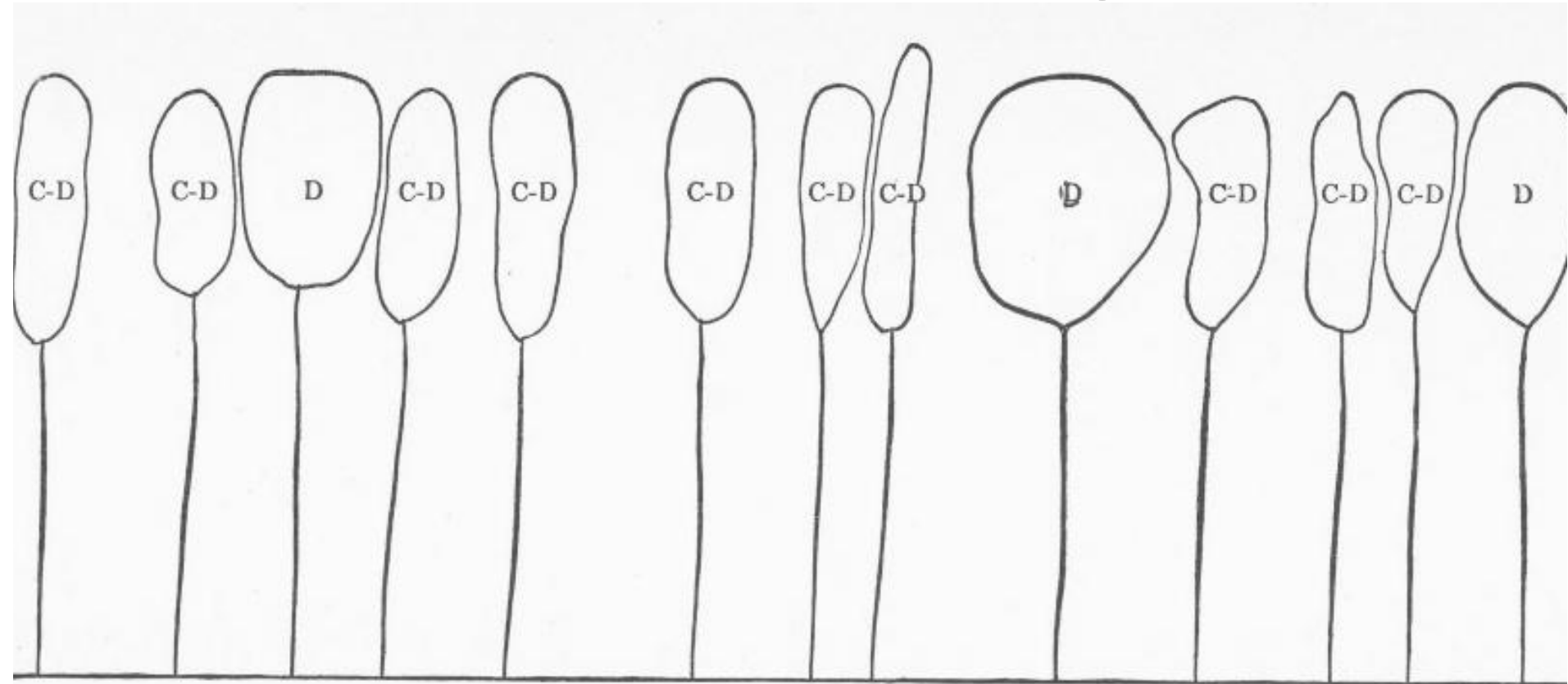
A C grade thinning has been made removing suppressed, oppressed and intermediate trees. This is conservative marking for a C grade thinning.

D-Grdae Thinning
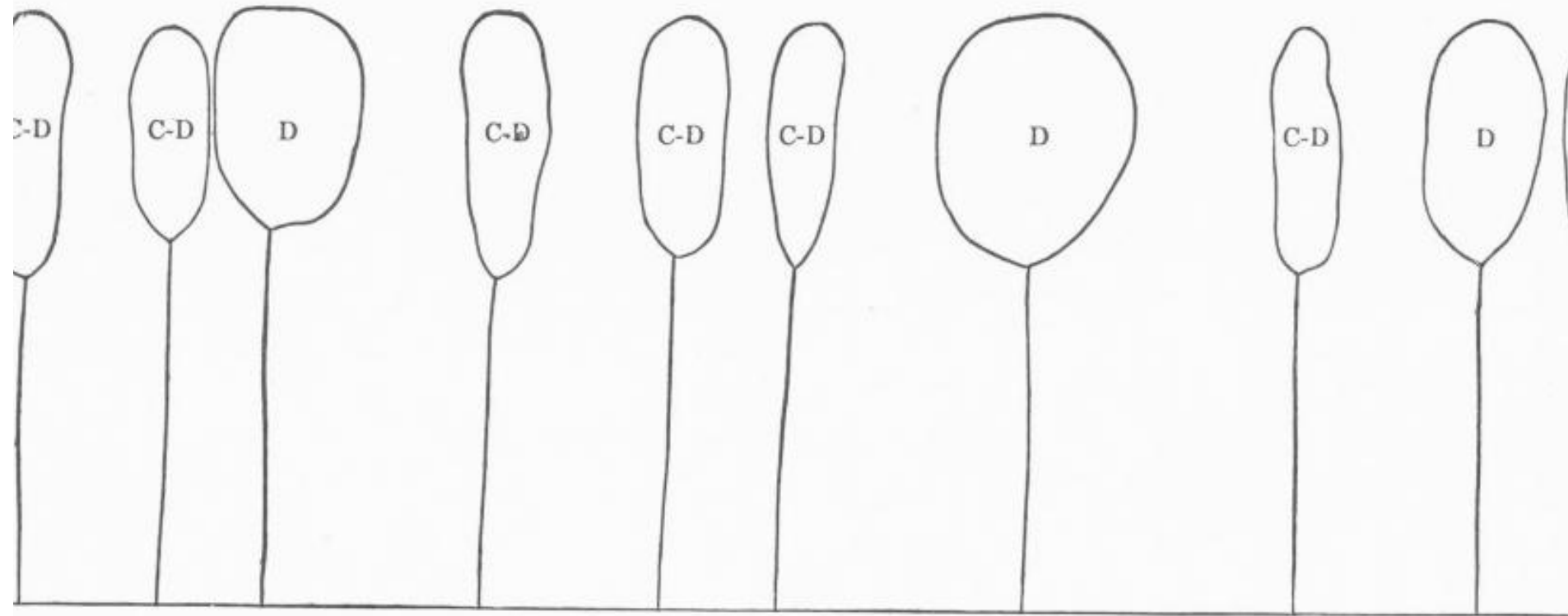
A **D** grade thinning has been made removing suppressed, oppressed, intermedia and some of the co-dominant trees.

Types of Yield tables

1. Based on thinking

    a)   Single Yield Table

    - for one grade of thinning,

    - usually C - Grade

    b)   Multiple Yield Table

    - for different grades of thinning

Purpose :

a) Determination of volume and increment of woods

b) Determination of the qualities of locality

c) Forecasting of yield of forests

Volume yield table

d) Deciding the most profitable species ,

e) Determination of value of growing stock

Money yield table

TABLE 12
Shorea robusta, SQ I Top Height 40-30 m at 80 years

crop age	Main Crop										Thinning			Final Yield			Accumulated yield of thinnings			Total yield			m.a.i.		c.a.i.		crop age
	Average dia	Average height	Total BA	No of trees	Stem Timber Form Factor	Total small wood form factor	Standing volume stem timber	Standing volume total small wood	Total standing volume	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total volume stem timber and small wood	Stem Timber Volume	Total volume stem timber and small wood	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
10	8.1	8.8	6.2	118	0.000	0.485	0.0	26.6	26.6	0.0	1.4	1.4	0.0	28.0	28.0	0.0	1.4	1.4	0.0	28.0	28.0	0.0	2.8	0.0	0.0	10
15	11.4	12.2	8.7	855	0.000	0.480	0.0	51.1	51.1	0.0	4.9	4.9	0.0	56.0	56.0	0.0	6.3	6.3	0.0	57.4	57.4	0.0	3.8	0.0	5.9	15
20	14.2	14.9	11.2	712	0.008	0.425	1.4	71.4	72.8	0.0	9.8	9.8	1.4	81.2	82.6	0.0	16.1	16.1	1.4	87.5	88.9	0.1	4.4	0.3	6.3	20
25	16.8	17.4	13.5	610	0.054	0.360	12.6	84.7	97.3	0.0	14.7	14.7	12.6	99.4	112.0	0.0	30.8	30.8	12.6	115.5	128.0	0.5	5.1	2.2	7.8	25
30	19.6	19.5	15.8	531	0.097	0.306	30.1	94.5	124.6	1.4	18.9	20.3	31.5	113.4	144.8	1.4	49.7	51.1	31.5	144.1	175.6	1.0	5.9	3.8	9.5	30
35	22.1	21.0	18.1	472	0.139	0.257	53.2	98.0	151.1	3.5	23.1	26.6	56.7	121.1	177.7	4.9	72.8	77.7	58.1	170.7	228.8	1.7	6.5	5.3	10.6	35
40	24.6	22.9	20.0	420	0.178	0.218	81.2	99.4	180.5	6.3	25.9	32.2	87.5	125.3	212.7	11.2	98.7	109.9	92.4	198.0	290.4	2.3	7.3	6.9	12.3	40
45	26.9	24.4	21.6	378	0.211	0.188	111.3	98.7	209.9	10.5	28.7	39.2	121.8	127.3	249.1	21.7	127.3	149.0	132.9	226.0	359.0	3.0	8.0	8.1	13.7	45
50	29.2	25.9	23.2	346	0.235	0.161	141.3	96.6	237.9	14.7	30.1	44.8	156.0	126.6	282.7	36.4	157.4	193.8	177.7	254.0	431.7	3.6	8.6	9.0	14.6	50

Contents of Yield Table

- Main crop

- Thinning

- Final Yield

- Accumulated Yield of Thinning

- Total Yield

- M.A.I.

- C.A.I.

        Site quality wise,

        Per unit area basis

        At intervals of 5 or 10 years

MAIN CROP

    i.   Average diameter

    ii.   Average height

    iii.   Total basal area

    iv.   Number of trees

    v.   Stem timber form factor

    vi.   Standing volume stem timber

    vii.   Standing volume total small wood

    viii.   Total standing volume, i.e. stem and small wood

THINNING

    ix.   Volume stem timber

    x.   Volume total small wood

    xi.   Total volume

How to read from Yield Table…

 Main crop (crop left after thinning at that stage)

8) Standing volume stem timber

9) Standing volume total small wood

10) Total standing volume = (8) + (9)

 Thinning

8) Stem timber volume

9) Total small wood volume

10) Total volume(stem timber + small wood) = (11) + (12)

- *FINAL YIELD* **(main crop & thinning at that age)**
  - i. Volume stem timber
  - ii. Volume total small wood
  - iii. Total volume

- *ACCUMULATED YIELD OF THINNING* **(thinning at that age +accumulated yield of thinning upto previous age)**
  - i. Volume stem timber
  - ii. Volume total small wood
  - iii. Total volume

- *TOTAL YIELD (final yield of that yr + accumulated thinning yield till previous yr)*
  - i. Volume stem timber
  - ii. Volume total small wood
  - iii. Total volume

How to read from Yield Table...

 Final yield

   14)   Stem timber volume = (8) + (11)

   15)   Small wood volume = (9) + (12)

In a particular year,

   Final Yield from forest = (14) + (15)

      final yield of a particular year

Total yield =

(20, 21, 22)   accumulated thinning yield till previous year

$$\text{Total yield} = \left\{ \begin{array}{l} \text{final yield of a particular year} \\ + \\ \text{accumulated thinning yield till previous year} \end{array} \right.$$

- ***MEAN ANNUAL INCREMENT***

  i.   Volume stem timber

  ii.   Total volume

- ***CURRENT ANNUAL INCREMENT***

  i.   Volume stem timber

  ii.   Total volume

M.A.I. = total yield / age

- **<u>Primary data</u>**

  – All volumes (yield)

- **<u>Secondary data</u>**

  – Crop averages for dia, ht,

  – no. of stems per unit area

  – crop basal area

  – form factor

  – M.A.I. and C.A.I.

- **<u>Additional information</u>**

  – Top ht by site quality and age

2. Based on out put

a) Volume Yield Table

- Out turn expressed in terms of vol.

b) Money Yield Table

- Out turn expressed in terms of money

- Prepared from Vol Yield Table

Applications and Uses of Yield Table

- Prior knowledge of following is required to use the yield table:-

  – **Site Quality**

  – **Crop Age or Crop Dia**

  – **Stand density** : From Basal area

    - Comparing it with the B.A. given in the Yield Table for the age and quality of the stand

Applications and Uses of Yield Table

1. Determination of site quality or Fractional site quality

2. Estimation of Total Yield or Growing Stock

   at present age

3. Determination of increment of the stand

4. Determination of rotation

5. Preparation of Stock Maps by site qualities

6. Guide to Silvicultural Thinning

Determination of site quality or Fractional site quality

Method 1 (Top height method) :

i. Ht of some dominant trees measured (Top ht)

ii. Age is obtained either from records or from field methods

iii. Table of **top ht by site quality and age** is referred

iv. In the table, different ranges of top height are given for different SQs for a particular age

v. See the age and find out the column in which the calculated top ht of the stand falls

If table is not given then:-

i. Site quality curves (Age ~ Top ht) available for different site quality classes

ii. The point corresponding to the top ht and age as measured is located and quality class within which it falls is determined.

iii. Site quality or fractional site quality can also be determined from the table directly instead of plotting site quality curves

Estimating the site quality of a Compartment

Method 2 - (By Plotting Dia vs Height Curve) :

- Steps

  - Lay a Representative Sample plot

  - Get data for plotting **ht vs dia** curve

  - If data for all dia class is not available go out side the sample plot to get the data

  - Plot **ht vs dia** curves for various site qualities

  - Overlay the field data curve with the site quality curves (yield table) to see the site quality

Standard Site Quality Curves

Ht (meter) vs Dia (cm)

Legend:
- I
- II
- III
- IV
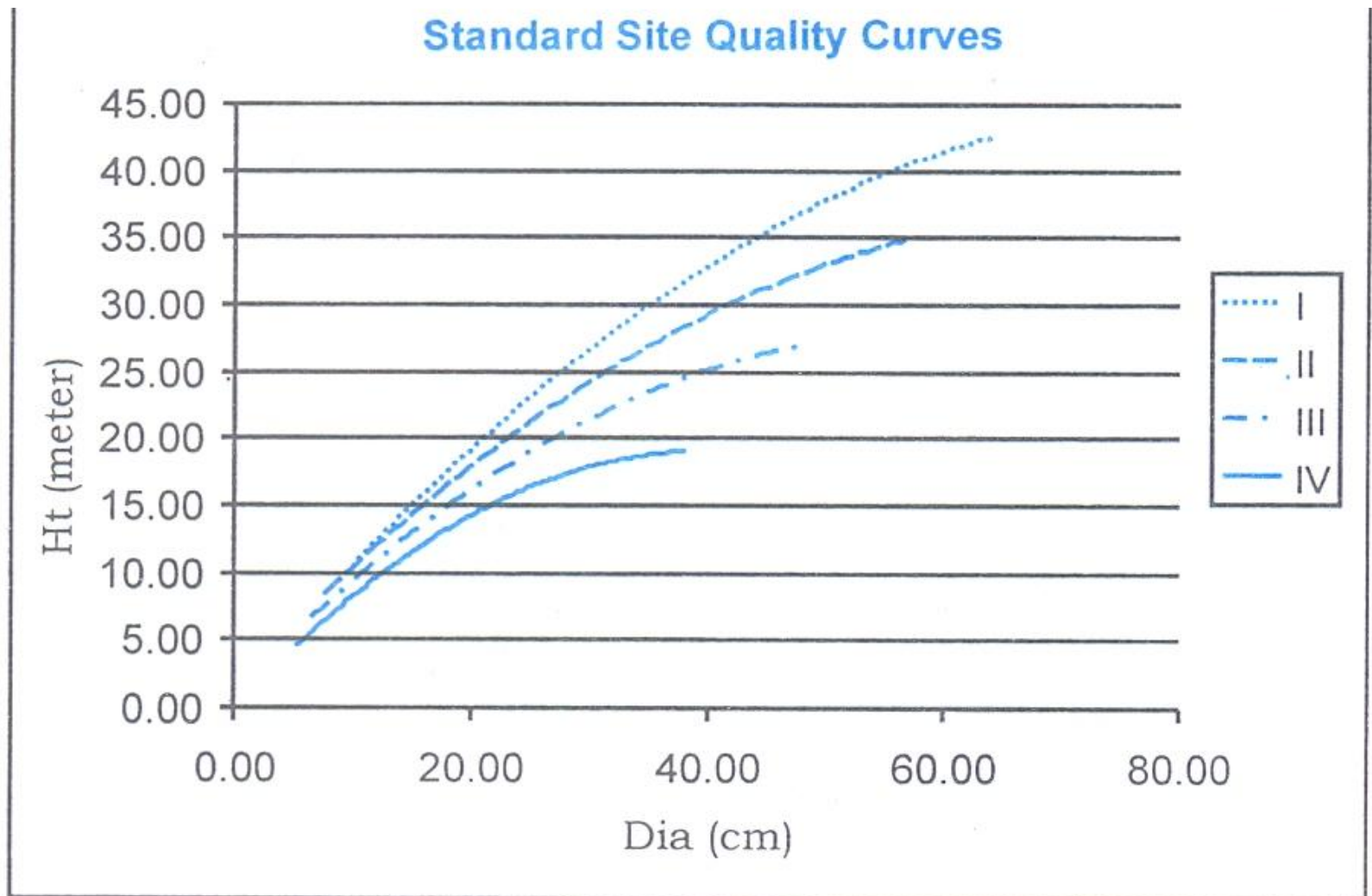
For standard Site Quality curves crop dia (cm) has been taken on X axis rather than age as it is difficult to determine the age of a *Shoera robusta* stand in the field.

ht

Dia →

Legend:
- SG1
- SG2
- SG3
- SG4
- Jamankhata 2
- Balindawala 10
- Banbaha 4a
- Jhabrawala 2c
- Suswa 2
- Bahera 16a
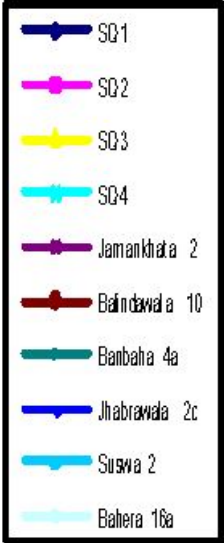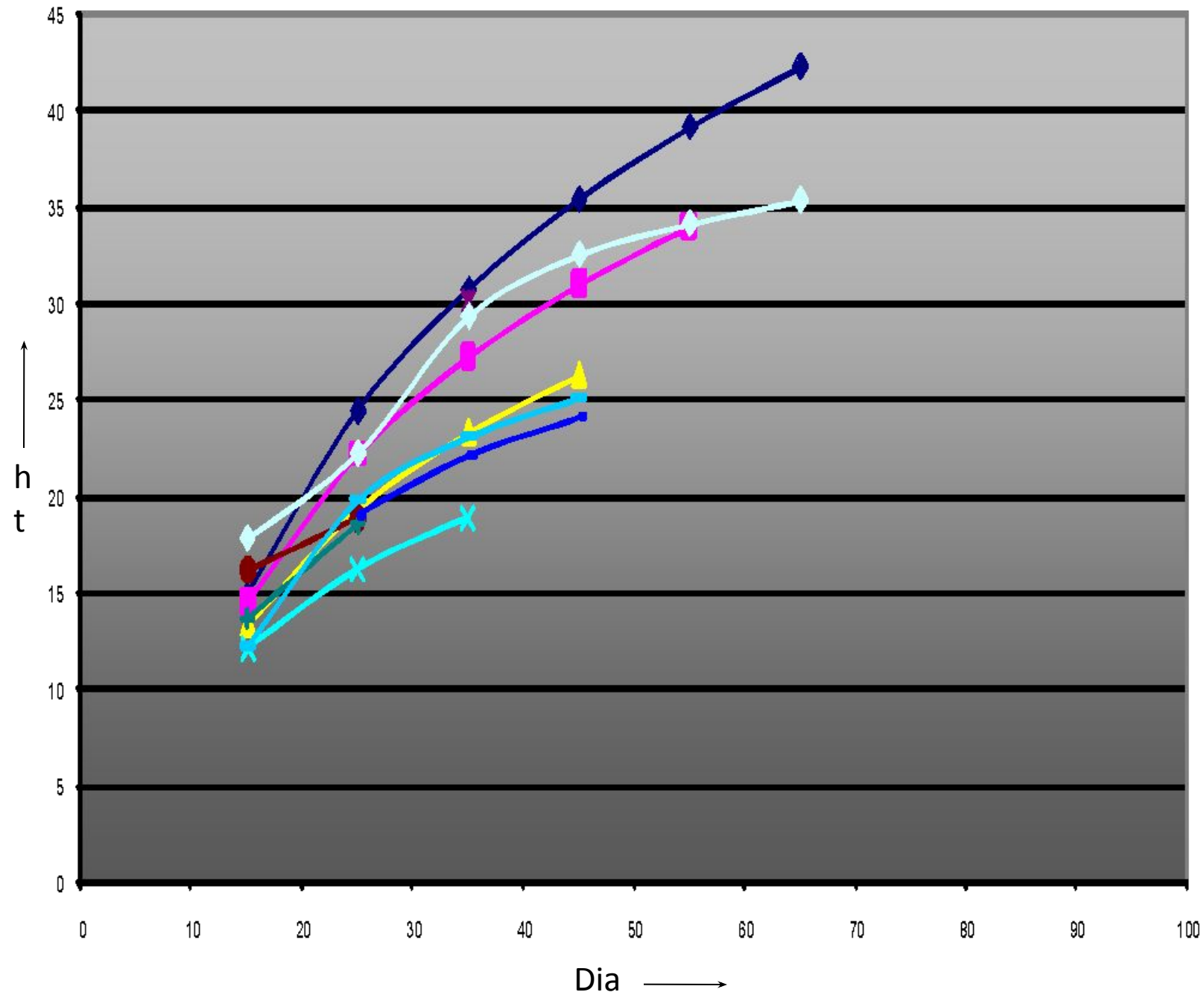
2. Estimation of Total Yield or Growing Stock at present age

- **Age & density** of the stand, site quality determined.

- Growing stock (main crop or total yield) read against the age from the yield table.

- For ages not exactly decade or half decade, yield is worked out by simple rule of proportion.

- In absence of information on age, the **crop dia** is considered for reference.

Total yield of the stand

= (yield as calculated from yield table)
 X

(area of the stand)

◆ then corrected for density of stand

Growing stock at future age

Directly from yield table

- Present age = a

  - Present volume as per yield table = V_a

  - Actual volume of the stand at present = v_a

Volume as per yield table n years hence = V_{a+n}

Actual volume at the age (a+n) :

$$(V_a / v_a) = (V_{a+n} / v_{a+n})$$
$$\Rightarrow v_{a+n} = V_{a+n} (v_a / V_a)$$

Presumption : - Present deviation from normal stocking will remain constant

3. **Determination of increment of the stand**

- Age and site quality determined.

- Increment = (C.A.I. for the age)

    × (Area of the stand)   ×

(stand density)

        × (period of years for which increment required)

- Stand density 0.8,   area 10 ha,   age 40-45 years, increment ?

  – CAI   is   12.3 m^3

  → Increment = 12.3 x 10 x 5 x 0.8 = 492 m^3

- Alternatively increment can be found out as the diff. between present and future volume, both of which can be calculated from the Yield Table.

Increment in under-stocked stand

I $\propto$ stand density

$\Box$ For stands of low density (due to presence of

blanks or otherwise) :- $I_r = I \times d$

I_r : Increment of under-stocked stand

I : Increment of normal stand.

d : Ratio of actual basal area to normal basal

area

In understocked forests –

 growth is faster due to availability of more   space

  ▪ increment is not proportional to density

Increment = (i) normal rate of growth

       +

   (ii) additional growth because of additional

   growing space available

i. Normal growth element $\longrightarrow$ $\mathbf{I_{r1}} = I \cdot d$

ii. Additional growth :

$$\mathbf{I_{r2}} = (1 - \text{stand density}) \times I_{r1}$$

$$= (\text{equivalent to deficiency in stocking})$$

$$\times \quad I_{r1}$$

$$\Rightarrow \quad \mathbf{I_r} = \mathbf{I_{r1}} + \mathbf{I_{r2}} \quad (\text{For tolerant or shade}$$

bearing species)

- For light demanding species

      -- gain in density is less

   -- Additional growth is 70% of that for shade bearing

   species

So I_r = I .d + (1- d). I . d. k

      = I × d (1 + k – k . d)

where,

   I : Increment of normal stand

   d : density of under stocked stand

   k : constant depending on shade tolerance of the species

4. __Determination of rotation__

 Rotation : maximum volume production -

Age at which M.A.I. culminates

 This ignores the establishment period

 the establishment period is to be estimated according to the local conditions and added to the rotation age calculated with the help of Yield Table

Financial considerations

- Choice of rotation age is influenced by many factors

- Largely determined by the market conditions and the size that fetches the most profitable return

- If poles are in great demand, it may be profitable to harvest the crop much earlier than the volumetric rotation age

Money yield table :

– Vol yield of Yield Table is converted to money yield

– These money yield values divided by age give net value increment per ha

– These values plotted over age - the culmination point of this curve is taken as the rotation of max. net income.

5. Preparation of Stock Maps by site qualities

- Forest area traversed in parallel lines - 20 m apart

- At every 20 m distance along the line Hts of dominant trees estimated - site qualities determined on the basis of top ht ~ age.

- These are reflected on a map - site qualities determined and entered for each square - quality class boundaries drawn on the map.

- Stock Map helps to prescribe different treatment to different plantation patches to get the best growth in each quality.

6. Guide to Silvicultural Thinning

Figures in Yield Table

– rough guide to check marking of thinning in field on the basis of following:-

(a) No. of stems corresponding to a given age

(b) No. of trees corresponding to a given crop dia

(a) <u>No. of stems corresponding to a given age</u>

– # of trees per unit area left after thinning at each Age (from Yield Table) provide sufficiently reliable check on thinnings.

Steps :

i. Age and top height is determined

ii. Site quality of the crop to be thinned is determined from above

iii. Trees/ha existing before thinning enumerated.

iii. Ratio of this figure and yield table figure for that age determined.

iv. Marking for thinning is done.

v. # of trees to be left after thinning are adjusted so as to bear the same ratio to the yield table figure after thinning.

n_1 : no. of stems before the year of thinning

n_2 : no of stems after thinning.

A. **Then for normal crop:**

No. of stems to be removed = $n_1 - n_2$

No. of stems to be left = n_2

B. **For non - normal crop:**

stems before thinning = n_x, (instead of $n_{1)}$

No. of trees to be removed in thinning = $\dfrac{n_x \cdot (n_1 - n_2)}{n_1}$

No of trees per ha in the final crop

n1

n2

Age

A

n

A

n_x

Fig 1

Fig 2

Fig 3

45
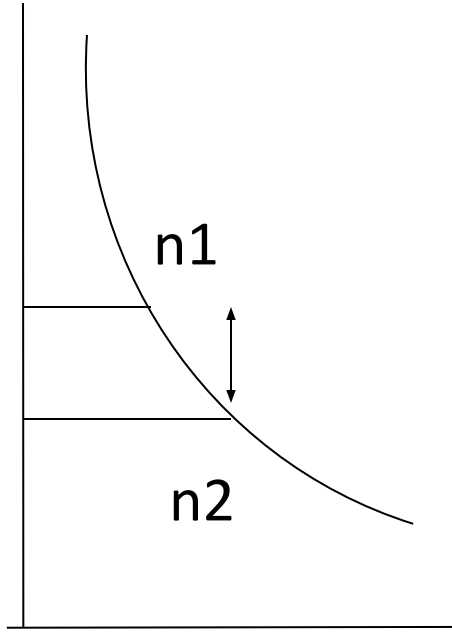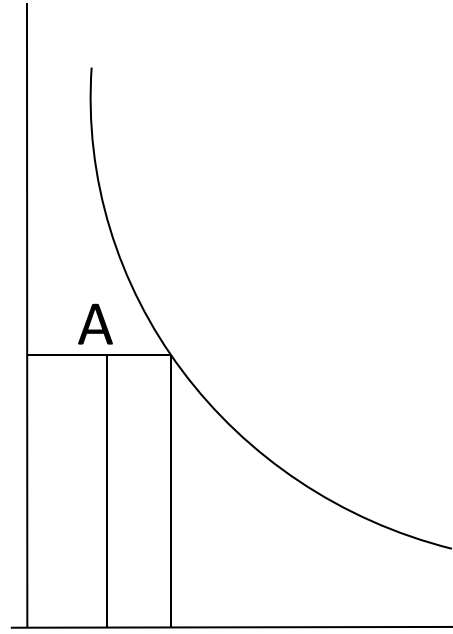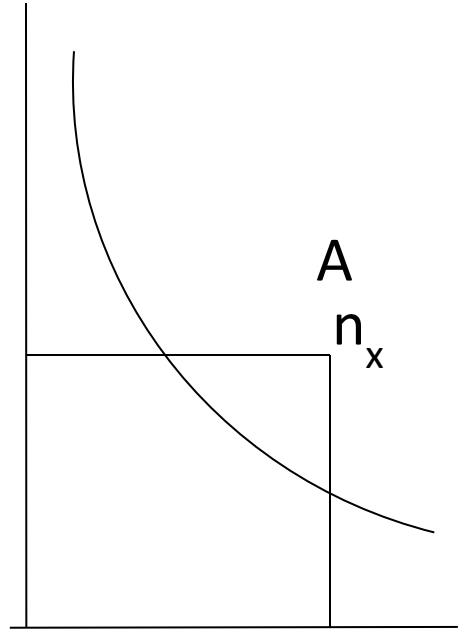
- Figure 1 :

  - for normal forest

  - in n years one should remove $(n_1 - n_2)$ trees so that after n years (thinning cycle), **n_2** trees remain.

- Figure 2:

  - not right for any kind of thinning as the stocking is less than the normal forest

- Figure 3:

  - ripe for the thinning

  - Use , No. of trees to be removed in thinning $= n_x / n_1 (n_1 - n_2)$

(b) **No. of trees corresponding to a given crop dia**

– Site quality of the crop determined

– Silvicultural thinning marked according to table of spacement

(by crop dia and site qualities)

– For a check - no. of trees/ha and av. crop dia left after marking the thinning determined for a representative area and compared with yield table main crop no. of trees/ha for same av. Crop dia and quality.

Silvicultural studies in the field decide the thinning possibilities and yield table is a supportive guide.

Yield Table helps studying the relative condition of crops on the ground as compared with the standard.

STAND TABLE

❏   Distribution of stems by dia. classes for each   of the
   series of crop diameter

❏   Trees per unit area under different dia class

   Given in one of the following forms:

   ❑ % of trees over given dia limit of various crop dia(p.no.-130)

   ❑ % of total no. of trees by 10 cm dia classes in crops of various
      dia (p.no.-132)

No. of trees by 10 cm dia classes per ha of normal forest under different rotations before actual felling (p.no.-133)

 No of trees per ha over given dia limits, in crops of different qualities for successive 5 year age interval

TABLE 22
Shorea robusta

Stand Table (Main Crop) Showing the percentage of trees in a given diameter limit in crops of various diameters

Diameter limit cm	5	8	10	13	15	18	20	23	25	28	30	33	36	38	41	43	46	48	51	53	56	58	61	64	Diameter limit cm
										Average crop diameter in cm — Percentage															
2.5	5.0	1.0																							2.5
5.0	56.0	23.0	8.0	2.0	1.0																				5
7.5	35.5	46.0	30.0	15.0	5.0	2.0	1.0																		7.5
10.0		25.0	35.0	27.0	17.0	8.0	3.0	2.0	1.0																10
12.5		4.0	20.0	30.0	24.0	18.0	10.0	5.0	2.0	2.0	1.0														13
15.0			5.5	17.0	24.0	20.0	16.0	10.0	6.0	2.0	1.0	1.0													15
17.5			1.0	6.5	17.0	22.0	18.0	15.0	11.0	7.0	3.0	2.0	1.0	1.0											18
20.0				1.5	8.0	15.0	19.0	16.0	14.0	11.0	8.0	4.0	3.0	1.0	1.0										20
22.5					2.5	9.0	15.0	17.0	14.0	13.0	10.0	7.0	4.0	3.0	2.0	1.0	1.0								23
25.0					1.0	3.5	9.0	14.0	16.0	14.0	13.0	11.0	8.0	5.0	3.0	2.0	1.0	1.0							25
27.5						1.5	5.0	9.0	13.0	14.0	13.0	12.0	10.0	8.0	5.0	3.0	2.0	1.0	1.0	1.0					28
30.0						0.5	2.0	6.0	9.0	12.0	13.0	12.0	11.0	10.0	9.0	6.0	3.0	2.0	1.0	1.0	1.0				30
32.5							1.0	3.0	6.0	10.0	12.0	13.0	12.0	10.0	9.0	8.0	6.0	4.0	3.0	1.0	1.0	1.0	1.0		33
35.0							0.5	1.5	4.0	6.0	9.0	11.0	12.0	12.0	10.0	10.0	8.0	6.0	4.0	3.0	1.0	1.0	1.0	1.0	35
37.5								0.5	2.0	4.0	6.0	9.0	11.0	11.0	11.0	9.0	10.0	7.0	7.0	4.0	3.0	2.0	1.0	1.0	38
40.0								0.5	1.0	2.0	5.0	6.0	9.0	10.0	11.0	11.0	9.0	10.0	7.0	6.0	5.0	3.0	2.0	1.0	40
42.5									0.5	1.5	2.5	5.0	6.0	9.0	10.0	11.0	11.0	9.0	9.0	8.0	6.0	5.0	3.0	2.0	43
45.0										0.5	1.5	3.0	5.0	7.0	9.0	10.0	10.0	10.0	10.0	9.0	8.0	7.0	5.0	4.0	45

Contd…

Average crop diameter in cm

Dia meter limit cm	5	8	10	13	15	18	20	23	25	28	30	33	36	38	41	43	46	48	51	53	56	58	61	64	Dia meter limit cm
																									Percentage
										0.5	1.0	1.5	3.5	5.0	7.0	8.0	10.0	11.0	10.0	9.0	9.0	8.0	7.0	5.0	48
47.5											0.5	1.0	3.0	4.0	7.0	7.0	8.0	8.0	9.0	9.0	9.0	8.0	7.0	7.0	50
50.0												0.5	1.5	2.0	4.0	5.0	7.0	9.0	10.0	11.0	10.0	10.0	9.0	8.0	53
52.5												0.5	0.5	1.0	2.0	3.0	5.0	7.0	8.0	9.0	10.0	9.0	9.0	8.0	55
55.0													0.5	1.0	1.0	2.5	3.0	5.0	7.0	8.0	9.0	10.0	10.0	9.0	58
57.5														0.5	1.0	1.5	2.5	4.0	5.0	7.0	8.0	9.0	10.0	10.	60
60.0															0.5	0.5	1.5	2.5	3.0	5.0	6.0	8.0	9.0	10.	63
62.5																0.5	0.5	1.0	2.5	3.0	5.0	6.0	8.0	8.0	65
65.0																0.5	0.5	1.0	1.0	2.5	3.0	4.0	5.0	8.0	68
67.5																	0.5	0.5	1.0	1.0	2.5	3.0	4.0	5.0	70
70.0																		0.5	1.0	1.0	1.0	2.5	3.0	4.0	73
72.5																			0.5	0.5	0.5	1.0	2.0	3.0	75
75.0																				0.5	0.5	1.0	1.5	2.0	78
77.5																					0.5	0.5	1.0	1.5	80
80.0																						0.5	0.5	0.5	83
82.5																							0.5	0.5	85
85.0																								0.5	88
87.5																								0.5	90
90.0																									

Note Figures below 5% have been read correct to 0.5 %

TABLE 23
Shorea robusta
Stand Table (Main Crop)
Giving the percentage of trees by 10 cm diameter classes in crops of various diameters

Diameter class (cm)		Average crop diameter in cm																							
		5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5
		Percentage																							
10	20	100	95	73	44	28	10	4	2	1															
20	30		2	27	55	73	75	63	46	33	22	13	7	4	2	1									
30	40				1	4	14	31	46	52	53	49	42	33	26	19	12	7	4	2	2	1			
40	50						1	2	5	13	22	32	39	44	43	41	38	33	27	21	14	10	7	5	3
50	60								1	1	3	5	10	16	24	30	36	39	38	38	35	32	28	22	18
60	70											1	2	3	4	8	12	17	25	30	35	37	38	38	35
70	80														1	1	2	3	5	7	11	16	21	26	31
80	90																	1	1	2	3	3	5	7	10
90	100																					1	1	2	2
100	110																								1

Extract of Stand Table

Extract of Stand Table
(Yield and Stand Table for plantation teak)
(Main crop)

Showing the percentage of trees above given diameter limit in crops of various diameters

Diameter limit in inches	Average crop diameters in inches															
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	73	96	99.5	100												
2	21	67	94	99	100	100										
3	2.0	22	63	90	98	99.5	100	100								
4		3	24	59	87	96	99	99.5	100							
5		0.5	5.0	26	59	85	94	98	99	100	100					
6			1.0	6	30	60	81	92	96	98.5	99.5	100				
7				1.5	9	34	58	77	90	95	98	99	100	100		
8				0.5	2.5	12	34	56	74	88	94	97	99	99.5		
9					0.5	4.5	13	33	54	72	87	93	96	98.5	100	100

TABLE 12
Shorea robusta, SQ I Top Height 40-30 m at 80 years

crop age	Main Crop									Thinning			Final Yield			Accumulated yield of thinnings			Total yield			m.a.i.		c.a.i.		crop age
	Average dia	Average height	Total BA	No of trees	Stem Timber Form Factor	Total small wood form factor	Standing volume stem timber	Standing volume total small wood	Total standing volume	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total small wood volume	Total volume stem timber and small wood	Stem Timber Volume	Total volume stem timber and small wood	Stem Timber Volume	Total volume stem timber and small wood	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
10	8.1	8.8	6.2	118	0.000	0.485	0.0	26.6	26.6	0.0	1.4	1.4	0.0	28.0	28.0	0.0	1.4	1.4	0.0	28.0	28.0	0.0	2.8	0.0	0.0	10
15	11.4	12.2	8.7	855	0.000	0.480	0.0	51.1	51.1	0.0	4.9	4.9	0.0	56.0	56.0	0.0	6.3	6.3	0.0	57.4	57.4	0.0	3.8	0.0	5.9	15
20	14.2	14.9	11.2	712	0.008	0.425	1.4	71.4	72.8	0.0	9.8	9.8	1.4	81.2	82.6	0.0	16.1	16.1	1.4	87.5	88.9	0.1	4.4	0.3	6.3	20
25	16.8	17.4	13.5	610	0.054	0.360	12.6	84.7	97.3	0.0	14.7	14.7	12.6	99.4	112.0	0.0	30.8	30.8	12.6	115.5	128.0	0.5	5.1	2.2	7.8	25
30	19.6	19.5	15.8	531	0.097	0.306	30.1	94.5	124.6	1.4	18.9	20.3	31.5	113.4	144.8	1.4	49.7	51.1	31.5	144.1	175.6	1.0	5.9	3.8	9.5	30
35	22.1	21.0	18.1	472	0.139	0.257	53.2	98.0	151.1	3.5	23.1	26.6	56.7	121.1	177.7	4.9	72.8	77.7	58.1	170.7	228.8	1.7	6.5	5.3	10.6	35
40	24.6	22.9	20.0	420	0.178	0.218	81.2	99.4	180.5	6.3	25.9	32.2	87.5	125.3	212.7	11.2	98.7	109.9	92.4	198.0	290.4	2.3	7.3	6.9	12.3	40
45	26.9	24.4	21.6	378	0.211	0.188	111.3	98.7	209.9	10.5	28.7	39.2	121.8	127.3	249.1	21.7	127.3	149.0	132.9	226.0	359.0	3.0	8.0	8.1	13.7	45
50	29.2	25.9	23.2	346	0.235	0.161	141.3	96.6	237.9	14.7	30.1	44.8	156.0	126.6	282.7	36.4	157.4	193.8	177.7	254.0	431.7	3.6	8.6	9.0	14.6	50

- To find out the no. of trees above a certain diameter for any crop diameter:

- Eg: If the avg. diameter of the crop is 9'', trees above diameter of 9'' will form??

- 33% of the crop

The table *viz.*, Extract of Stand Table is used for following objects :

(i)   To find out distribution of trees into diameter classes for various crop diameters.

Example – If the average diameter of crop is 5", the trees of various diameter classes are in the following ratio :

8"	diameter class and above	0.5 %	
7"	diameter class	1.0 %	(1.5-0.5)
6"	diameter class	4.5 %	(6-1.5)
5"	diameter class	20.0 %	(26-6)
4"	diameter class	33.0 %	(59-26)
3"	diameter class	31.0 %	(90-59)
2"	diameter class	9.0 %	(99-90)
1"	diameter class	1.0 %	(100-99)
	Total	100.0 %	

Uses :

    i.   Mainly for thinning

    ii.   Determination of financial values of crop

    iii.   Preparation of Money Yield Table.

Money Yield Table

Objective : To determine the financial rotation

Method :

- Vol/ha for main crop and thinnings at different ages obtained from Vol. Yield table

- No. of trees of different sizes obtained from stand table for different ages

- Price ~ size gradient (value/age or value/dbh curves on per ha basis) established between crop age and value in terms of money.

- Stand table data converted in terms of money by the above gradient.

- Total value/ha = ∑ values of all trees of different dia classes

- Value of crop per cubic mt. at different ages worked out

- Money yield table data tabulated in appropriate columns.

Stand Volume Table

- For quick assessment of stand volume

Regression relation between vol/ha and product of crop ht and basal area/ha.

V = a + b (BA) × (HC)

BA : Basal area in m^2/ha

HC : Crop ht in m

V   : Vol in m^3/ha

a   and   b   are   regression   constant   and coefficient respectively.

THANKS