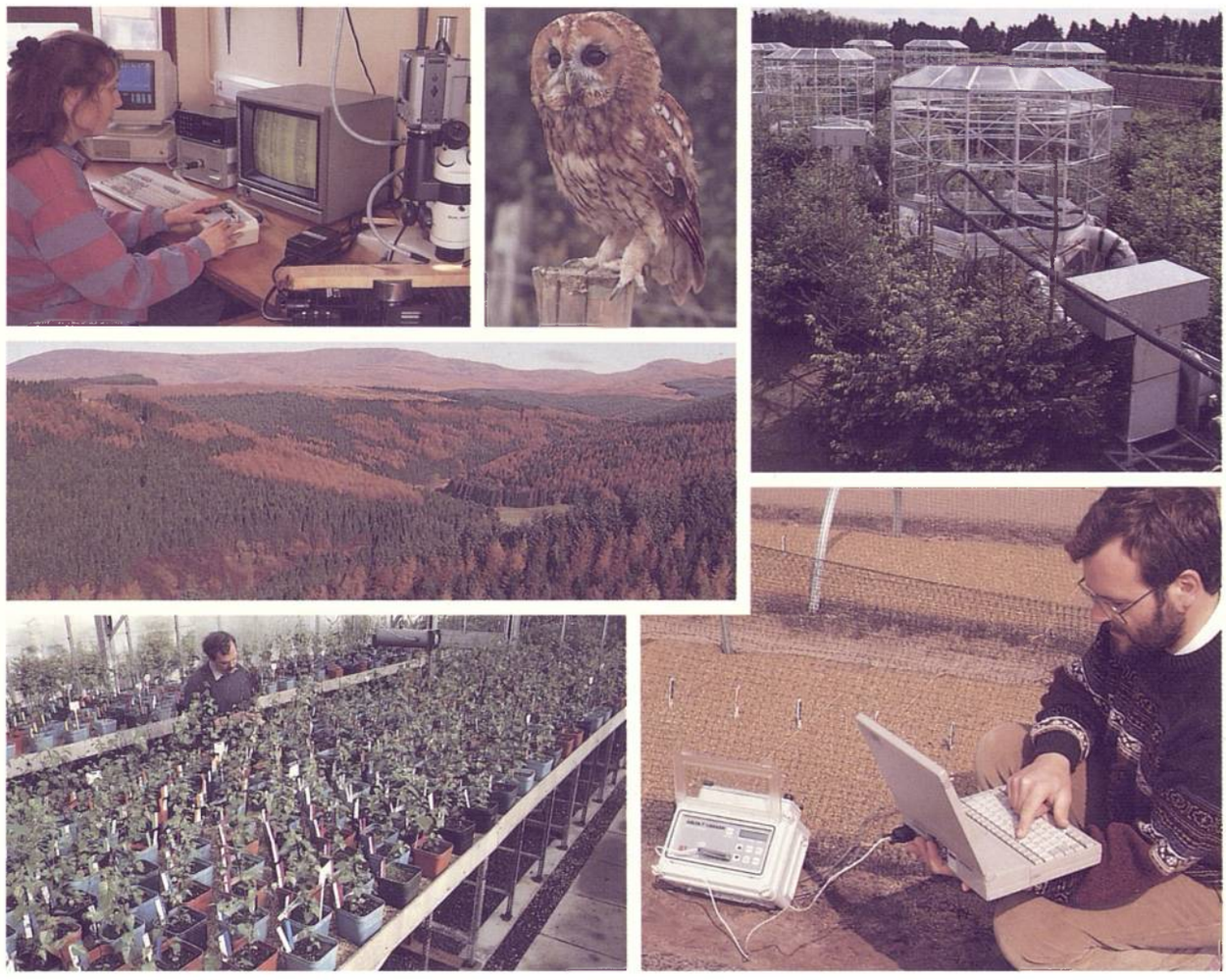
Forestry Commission

Provisional Yield Tables for Poplar in Britain

J. M. Christie



Technical Paper 6

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Provisional Yield Tables for Poplar in Britain

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Introduction

Poplars are noted for their extremely rapid rates of growth. The development of new canker-and rust-resistant clones in Belgium (Goosens *et al.*, 1988) and their introduction into Britain (Potter *et al.*, 1990) make them a very attractive crop to grow on suitable sites, such as former agricultural land (Beaton, 1987, 1988; Beaton *et al.*, 1991). New tables are needed to reflect the more rapid rates of growth seen at spacings which are current practice. Here we give tables for spacings of 8 m x 8 m, 4 m x 4 m and 3 m x 3 m. The range of yield classes is extended to Yield Class 26. These tables only represent three out of a wide range of planting spacings for which models could be constructed. The systematic thinning treatments proposed in the models for 3 m and 4 m planting spacing were chosen on the assumption that an early return from a thinning treatment, that could be simply applied, would be a preferred management option. Adjustments to the predictions made in the tables are necessary if they are to be applied to crops that have been managed under an alternative silvicultural or commercial thinning system. The tables replace the existing published yield tables (Hamilton and Christie, 1971; Edwards and Christie, 1981).

Data on which the yield tables are based

The estimates of growth given in this Technical Paper are based largely upon data from poplar trial plots established in a number of forests throughout Britain, and are therefore an extension of the data used to construct the preliminary tables in 1959 (Christie, 1959). The earlier tables were based mainly on data for the hybrid black poplars but the additional data have made it possible to confirm their applicability to all three clonal groups. The trial plots were measured for diameter and height every two years and for volume every four years. There were 47 plots of *P. trichocarpa* and *P. trichocarpa* x *P. maximowiczii* hybrids, 26 plots of *P. deltoides* x *P. trichocarpa* hybrids and 167 plots of *P. deltoides* x *P. nigra* (hybrid black poplars). The majority of these were planted at 5.5 m x 5.5 m. A few were planted at 7.3 m x 7.3 m and a few at 4.9 m x 4.9 m. The trial plot data were supplemented by data from permanent sample plots, recently planted plots of the new clones at Bedgebury Forest in Kent and eight-year-old trial plots at Caen in Normandy in northern France. Figure 1 illustrates the range of data used, excluding permanent sample plots, and gives the range of yield classes likely to be encountered for each varietal group in this country. There were no major differences in patterns of growth between any hybrid grouping, therefore the tables can be applied to any of the varieties of poplar.

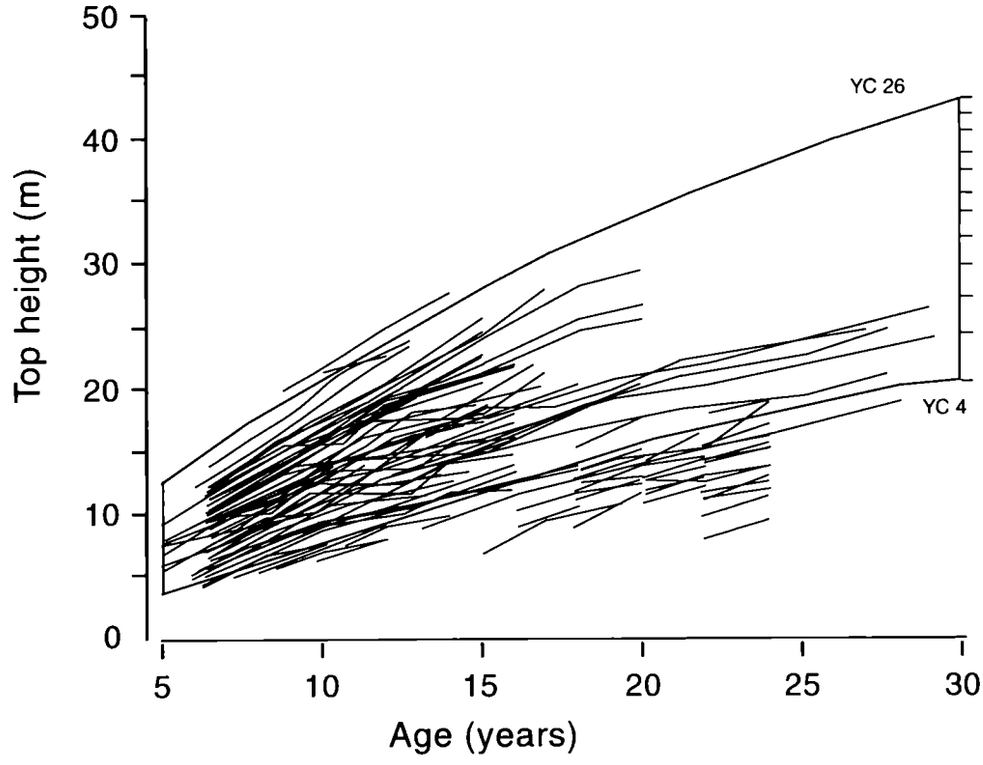


Figure 1. Extent of the data on which the provisional tables are based.

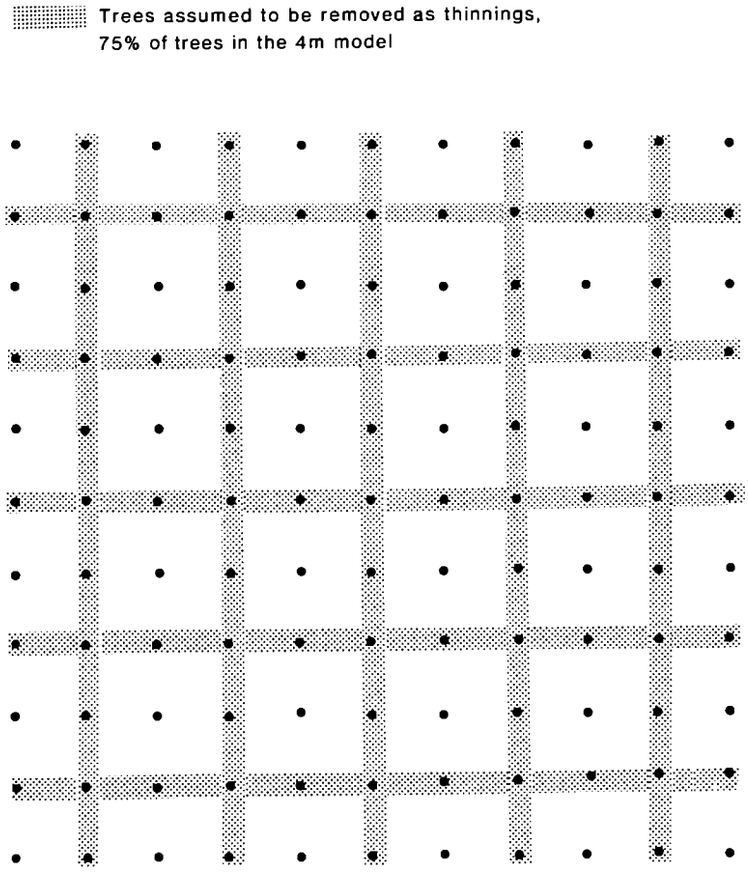


Figure 2. Diagram of the pattern of systematic thinning assumed for the 4 m spacing.

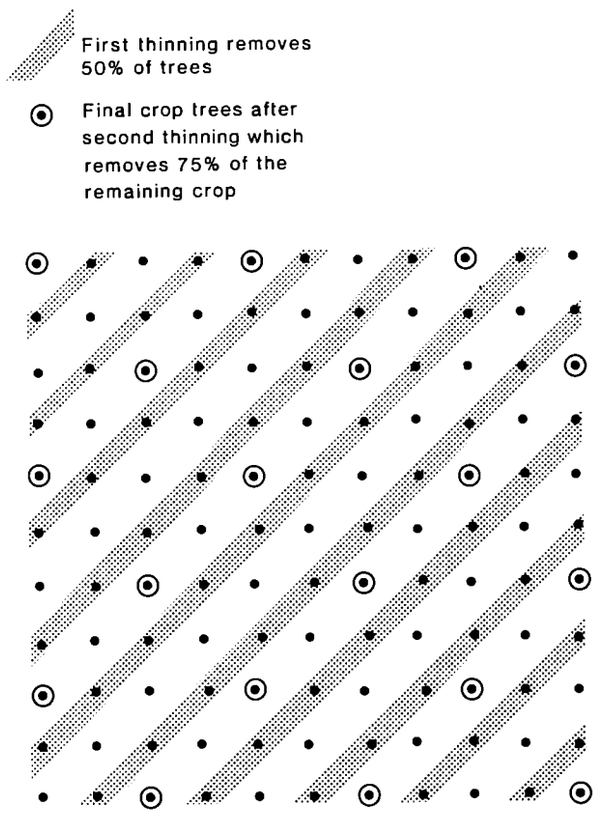


Figure 3. Diagram of the pattern of systematic thinning assumed for the 3 m spacing.

The tables

Unthinned models

Based on a spacing of 8 m x 8 m, twelve yield classes have been recognised, ranging from Yield Class 4 to Yield Class 26. Figure 8 (page 8) shows the top height/age curves for these yield classes. The models for 8 m spacing assume that there will be no thinning. The preliminary yield tables for unthinned poplar planted at 8 m x 8 m spacing are presented in Tables 1 to 12. In order to represent silvicultural schemes designed for the rapid production of woody material on a short rotation, additional models were constructed for crops planted at 4 m x 4 m and 3 m x 3 m. The same top height/age curves can be used for all models as there was no evidence in the data to suggest that top height is affected by spacing. The preliminary yield tables for unthinned poplar planted at 4 m x 4 m spacing are presented in Tables 13 to 24. The preliminary yield tables for unthinned poplar planted at 3 m x 3 m spacing are presented in Tables 25 to 36. These give net total volume production after allowing for mortality.

Thinned models

Poplars require free growth to attain their maximum rates of growth, as they are more sensitive to competition than most other species (Evans, 1954). During field work undertaken for this project it was noticed that their crowns do not intermingle, as is the case with other species of broadleaved trees. Thus, for poplars, the maximum crown diameter reached is approximately equal to the spacing between trees. In the models, the onset of severe crown competition has determined the timing of the thinnings. The use of the average crown diameter of the mean tree allows a reasonable estimate to be made of the degree of crown competition.

The percentage area occupied by crowns of trees (Crown Occupancy) was estimated at different stages of crop development by multiplying the crown area projection (CAP) of the tree of mean dbh (diameter at breast height, 1.3 m) by the number of trees per hectare and expressing this as a percentage of one hectare. Thus:

$$\text{Percentage Crown Occupancy} = (\text{CAP}/10\,000) \times 100$$

where CAP = $cd^2 \times (\pi/4) \times N$

and cd = crown diameter of the mean tree (metres)

N = total number of trees per hectare

To ensure both unrestricted diameter growth in the closer-spacing models and an early return from thinnings, the 4 m and 3 m models were assumed to receive a systematic thinning when the percentage crown occupancy was estimated to be about 90 per cent. Whilst the 8 m models are for unthinned crops only, it should be noted that if the crop is allowed to grow beyond a top height of 35 m or a mean dbh of 55 cm severe crown competition is predicted to occur. In the 4 m models, three-quarters of the total number of trees are removed in one operation by felling every other row and every other tree in the remaining rows. Figure 2 illustrates this pattern of systematic thinning for the 4 m spacing. The preliminary yield tables for thinned poplar planted at 4 m x 4 m spacing are presented in Tables 37 to 48.

In the 3 m models, two thinning interventions are assumed. The first removes half of the trees by taking every other diagonal row; the second removes three-quarters of the remaining trees leaving the remaining trees at approximately 8.4 m spacing. Figure 3 illustrates this pattern of systematic thinning for the 3 m spacing. The preliminary yield tables for thinned poplar planted at 3 m x 3 m spacing are presented in Tables 49 to 60. In both of these thinned models no mortality is assumed after the thinnings have taken place.

If, in these closer spacings, thinning is not carried out then very severe crown competition is predicted to occur when the average dbh is 25 cm and 20 cm respectively leading to considerable restriction of diameter growth. The tables suggest that there is little to be gained in planting closely and thinning, compared with unthinned crops planted at 8 m spacing. This reflects the fact that the intensity of thinning assumed is such that cumulative volume production is reduced to levels more appropriate to wider spacings. The total volume production is almost the same in all three models at a top height of 40 m, but in the closer spacings the average dbh is rather lower. However, spectacular early yields are possible at 5 and 10 years with close spacing, even on low Yield Class sites. This option of close spacing is best suited to the *P. trichocarpa* and *P. trichocarpa* hybrids, as hybrids of *P. nigra* x *P. deltoides* are almost certainly not suitable for close spacing (Jobling, 1990).

Pruning

When poplars are grown for large sawlog or veneer timber it is essential to prune to a minimum height of 6 m, preferably 8 m, within the first 10 years following planting (Jobling, 1990). At wide initial spacing all trees should be pruned; for closer spacings only the final crop trees should be pruned.

Comparison with growth in Europe

There is a great similarity in patterns of growth in Britain, Belgium and France, but not Spain, as illustrated in Figures 4 to 7 where curves for top height, average dbh, total volume production and mean annual volume increment are compared. It was this similarity in rates of growth, shown by the Site Index classes (SI), seen in the Belgian tables (Goosens *et al.*,1988), which suggested that data from the trial plots at Caen in Normandy could be used to supplement the British data. However, unlike the Belgian tables which, except for height growth, show different rates of growth for each of the three clones Beaupré, Primo and Ghoy, there was no evidence of differential patterns of growth between the three main clonal groups in Britain. It was, however, evident that each clonal group was capable of a different maximum yield class. *P. trichocarpa* and *P. trichocarpa* x *P. maximowiczii* hybrids can achieve YC 26, *P. deltoides* x *P. trichocarpa* YC 22 and *P. nigra* hybrids YC 18. Additional data for *P. campeador* Yield Tables in Spain (Gonzalez, 1986) are shown in Figures 4–6 by Quality Classes I, III, V which like Site Index indicate relative rates of growth. Although a variety of clones were tested on a range of sites in Britain, those planted on poor sites did not grow well and were all below YC 4. In spite of this apparent poor yield, satisfactory crops were obtained which were better than other species planted on comparable sites.

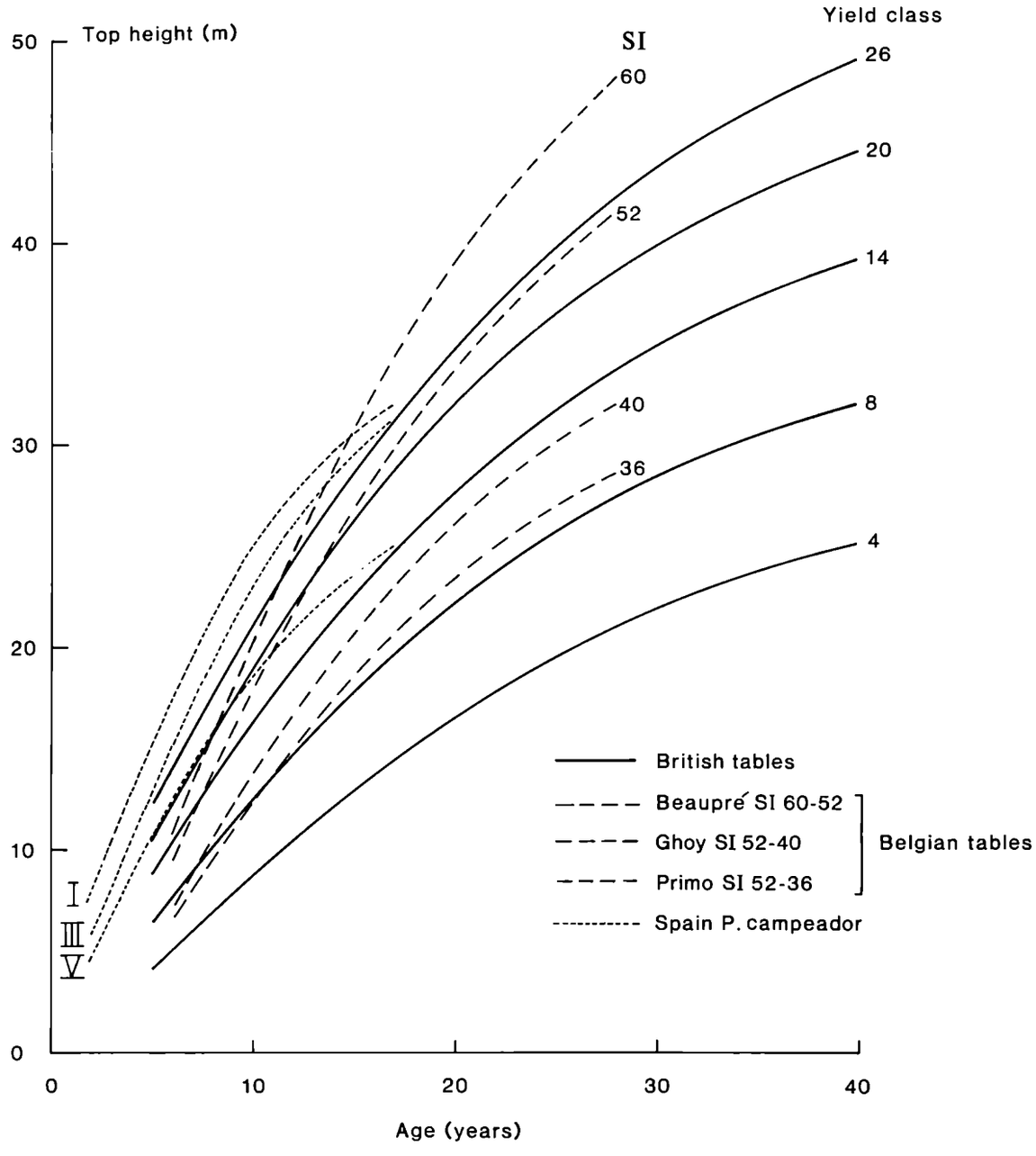


Figure 4. Comparison of top height/age Yield Class curves with Belgian and Spanish tables.

There is some evidence in Belgium (Beaton, 1991), particularly for *P. trichocarpa* and its hybrids, that interplanting with other broadleaved species or conifers is an acceptable management option giving improved amenity and game conservation. There is no evidence as to the effect such mixtures may have on the growth of poplar, but the impression is that poplar is little affected when planted in such mixtures on fertile sites.

There is strong evidence, both on the continent and in this country, that selected clones of *P. trichocarpa* are suitable for the cooler, wetter northern and western regions of Britain and that the hybrid black poplars are best grown in the warmer regions of southern Britain (Jobling, 1990). The position of *P. deltoides* x *P. trichocarpa* hybrids has not yet been determined.

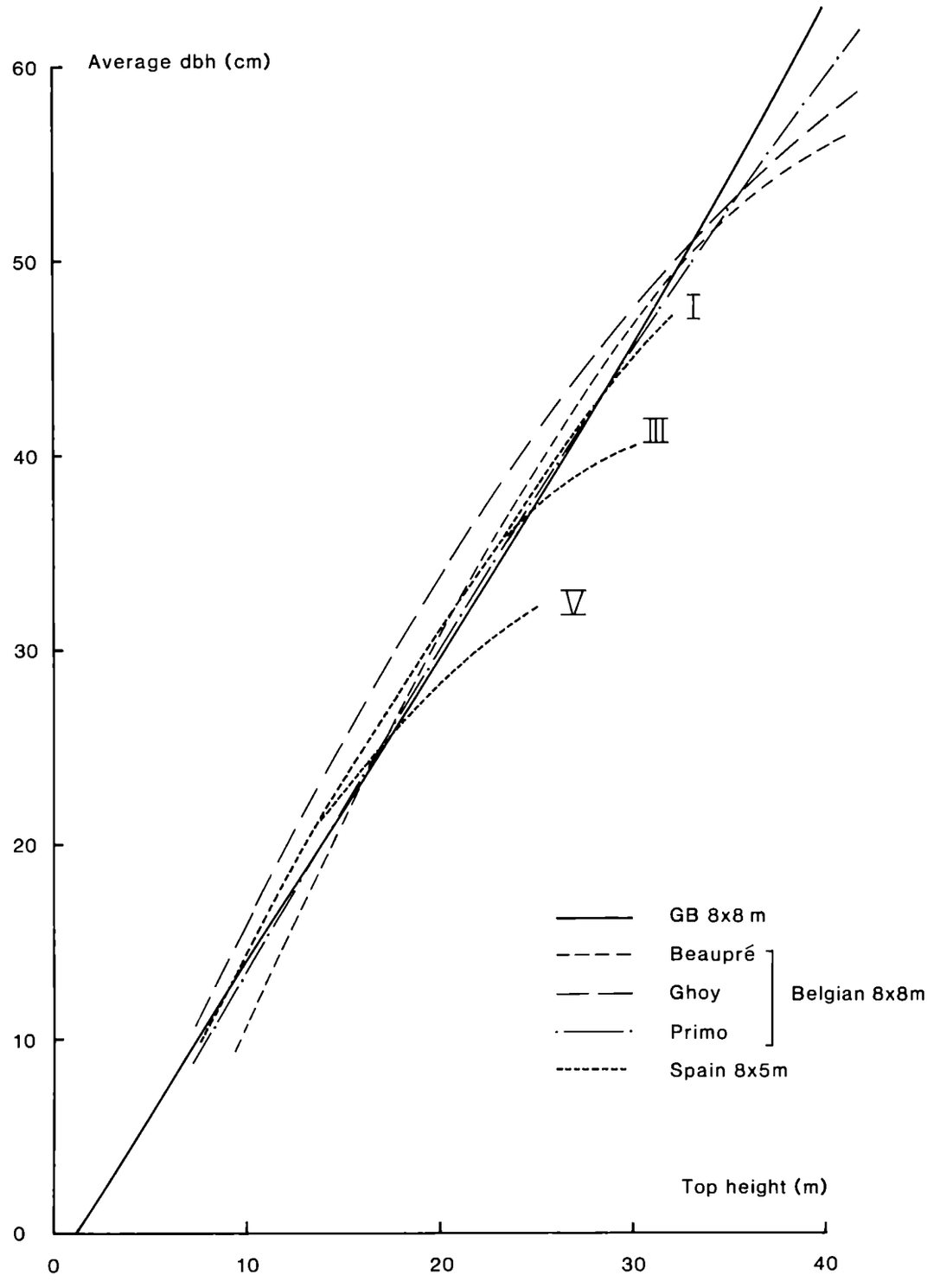
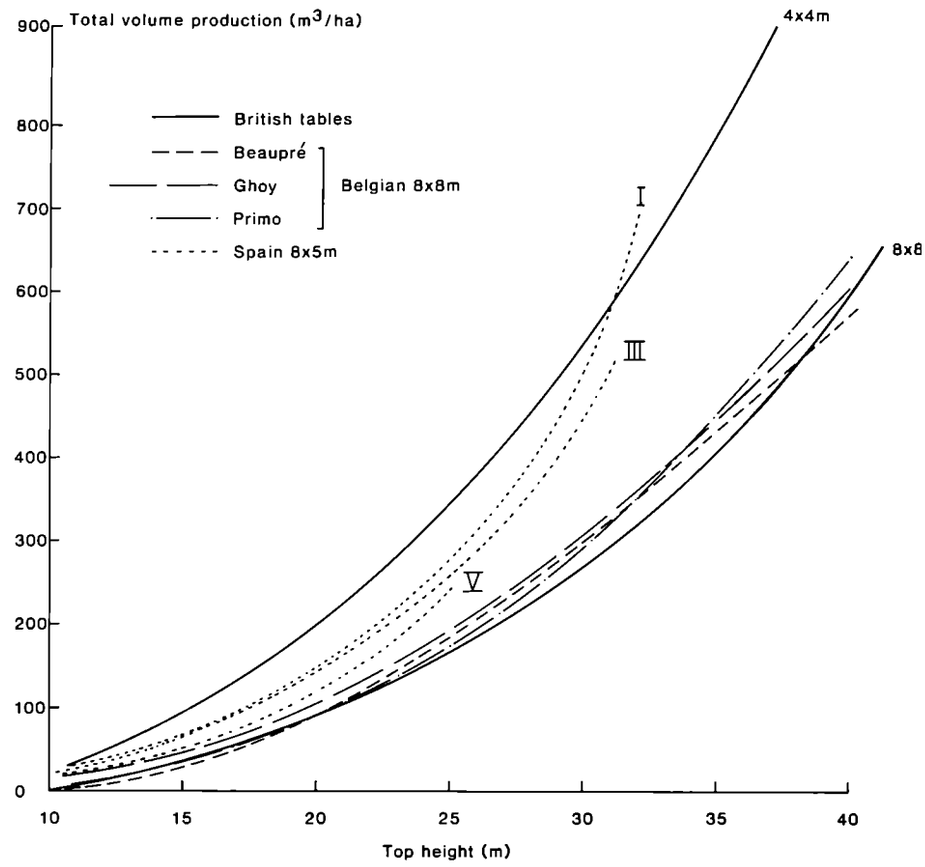


Figure 5. Comparison of average dbh/top height relationship with yield tables from Belgium and Spain.



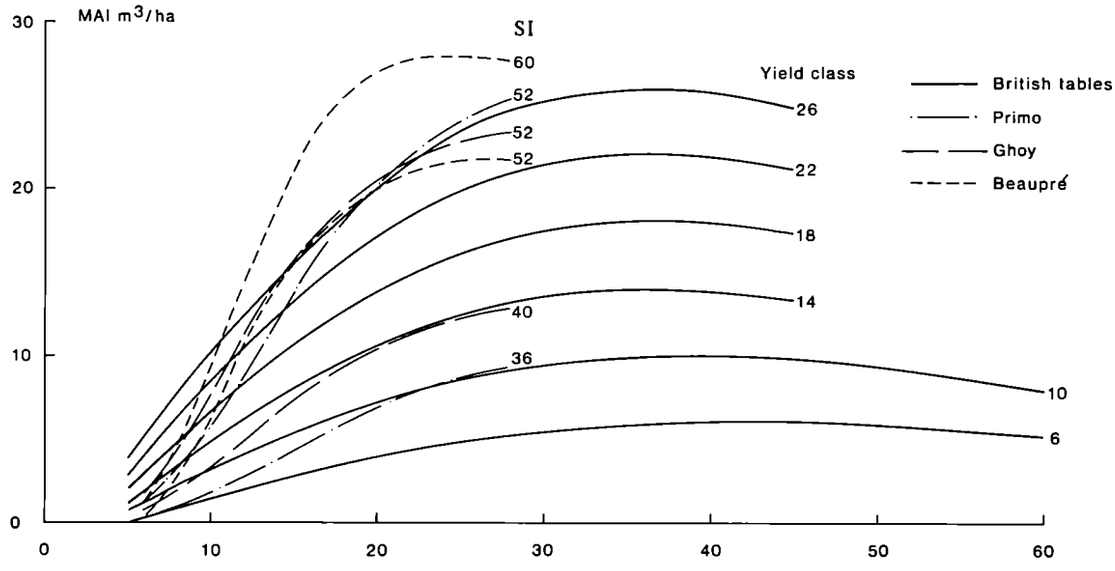


Figure 6. Comparison of total volume production/top height relationship with that of the three Belgian clones, and the Spanish yield tables.

Figure 7. Comparison of mean annual volume increment/age with the three Belgian clones.

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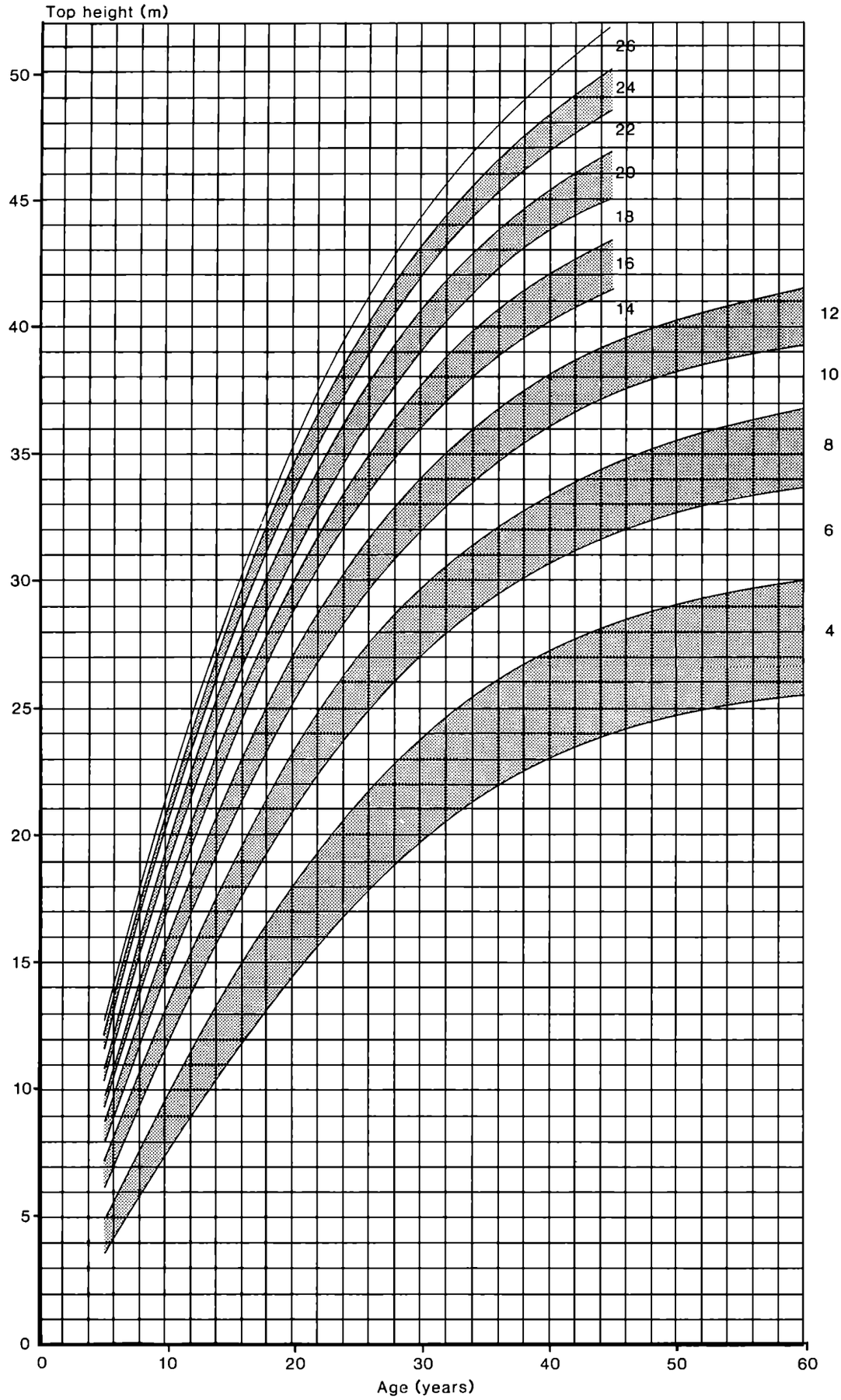

Figure 8. Top height/age Yield Class curves.

Yield Tables for Unthinned Crops

Tables 1–36

Poplar: 8m x 8m Unthinned **Yield Class 26** **Table 1**

Note: No estimate has been made of possible mortality in these models once severe competition between trees has set in.
All values in the following tables are per hectare.

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	12.3	17.8	3.9	20	3.9	20	1.2	12.0	3.9
10	156	21.3	31.9	12.5	101	12.5	101	2.0	20.8	10.1
15	156	28.7	43.9	23.6	232	23.6	232	2.4	30.6	15.5
20	156	34.8	54.3	36.1	400	36.1	400	2.6	35.8	20.0
25	156	39.8	63.2	48.9	587	48.9	587	2.5	36.3	23.5
30	156	43.8	70.2	60.4	759	60.4	759	2.1	32.6	25.3
35	156	46.8	75.7	70.2	909	70.2	909	1.8	27.3	26.0
40	156	49.2	79.9	78.2	1032	78.2	1032	1.4	21.3	25.8
45	156	50.9	82.7	83.8	1123	83.8	1123	1.0	14.8	25.0

Poplar: 8m x 8m Unthinned **Yield Class 24** **Table 2**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	11.8	17.1	3.6	18	3.6	18	1.2	10.9	3.5
10	156	20.7	31.0	11.8	93	11.8	93	1.9	19.5	9.3
15	156	28.0	42.6	22.2	215	22.2	215	2.2	28.3	14.3
20	156	33.8	52.6	33.9	370	33.9	370	2.4	32.7	18.5
25	156	38.6	61.2	45.9	540	45.9	540	2.3	33.2	21.6
30	156	42.6	68.0	56.6	700	56.6	700	2.0	30.2	23.3
35	156	45.5	73.3	65.8	840	65.8	840	1.7	25.2	24.0
40	156	47.7	77.3	73.2	952	73.2	952	1.3	19.5	23.8
45	156	49.4	80.3	79.0	1035	79.0	1035	0.9	13.7	23.0

Poplar: 8m x 8m Unthinned **Yield Class 22** **Table 3**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	11.3	16.4	3.3	15	3.3	15	1.1	9.8	3.0
10	156	20.0	29.8	10.9	84	10.9	84	1.8	18.3	8.4
15	156	27.1	41.2	20.8	198	20.8	198	2.1	26.2	13.2
20	156	32.8	51.0	31.9	341	31.9	341	2.2	29.6	17.1
25	156	37.5	59.0	42.7	492	42.7	492	2.1	30.2	19.7
30	156	41.2	65.6	52.7	640	52.7	640	1.8	28.2	21.3
35	156	44.0	70.7	61.2	772	61.2	772	1.6	23.8	22.1
40	156	46.2	74.6	68.2	877	68.2	877	1.2	17.9	21.9
45	156	47.7	77.3	73.2	952	73.2	952	0.8	12.6	21.2

Poplar: 8m x 8m Unthinned **Yield Class 20** **Table 4**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	10.8	15.4	2.9	13	2.9	13	1.0	8.7	2.5
10	156	19.2	28.6	10.0	75	10.0	75	1.7	16.4	7.5
15	156	26.2	39.6	19.2	178	19.2	178	2.0	24.3	11.9
20	156	31.7	49.1	29.5	310	29.5	310	2.1	27.4	15.5
25	156	36.2	56.8	39.5	448	39.5	448	2.0	27.4	17.9
30	156	39.8	63.1	48.8	581	48.8	581	1.7	25.6	19.4
35	156	42.6	68.0	56.7	700	56.7	700	1.4	21.5	20.0
40	156	44.6	71.7	63.0	795	63.0	795	1.1	16.4	19.9
45	156	46.0	74.2	67.5	865	67.5	865	0.8	11.7	19.2

Poplar: 8m x 8m Unthinned **Yield Class 18** **Table 5**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	10.2	14.6	2.6	11	2.6	11	1.0	7.6	2.1
10	156	18.4	27.2	9.1	66	9.1	66	1.6	15.0	6.6
15	156	25.1	37.9	17.6	159	17.6	159	1.8	21.4	10.6
20	156	30.5	47.0	27.1	278	27.1	278	1.9	24.7	13.9
25	156	34.9	54.5	36.4	404	36.4	404	1.8	24.9	16.2
30	156	38.3	60.4	44.7	524	44.7	524	1.6	22.7	17.5
35	156	41.0	65.1	51.9	629	51.9	629	1.3	19.2	18.0
40	156	42.9	68.8	58.0	715	58.0	715	1.0	14.9	17.9
45	156	44.2	71.0	61.8	779	61.8	779	0.7	10.8	17.3

Poplar: 8m x 8m Unthinned **Yield Class 16** **Table 6**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	9.6	13.6	2.3	9	2.3	9	0.9	6.4	1.7
10	156	17.5	25.8	8.2	58	8.2	58	1.4	13.0	5.8
15	156	24.0	36.0	15.9	139	15.9	139	1.7	19.2	9.3
20	156	29.2	44.8	24.6	245	24.6	245	1.7	22.0	12.3
25	156	33.4	52.0	33.1	357	33.1	357	1.6	22.0	14.3
30	156	36.7	57.6	40.6	464	40.6	464	1.4	20.2	15.5
35	156	39.2	62.1	47.2	559	47.2	559	1.2	17.2	16.0
40	156	41.1	65.4	52.4	636	52.4	636	0.9	13.4	15.9
45	156	42.3	67.7	56.2	694	56.2	694	0.7	9.8	15.4

Poplar: 8m x 8m Unthinned **Yield Class 14** **Table 7**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	8.9	12.6	2.0	7	2.0	7	0.8	5.3	1.3
10	156	16.5	24.2	7.2	48	7.2	48	1.3	11.3	4.8
15	156	22.7	34.2	14.3	120	14.3	120	1.5	16.6	8.0
20	156	27.8	42.4	22.0	213	22.0	213	1.6	19.6	10.6
25	156	31.8	49.3	29.8	313	29.8	313	1.5	19.7	12.5
30	156	35.0	54.7	36.7	408	36.7	408	1.3	17.7	13.6
35	156	37.4	58.9	42.5	489	42.5	489	1.0	14.7	14.0
40	156	39.2	61.9	46.9	555	46.9	555	0.8	11.6	13.9
45	156	40.3	64.0	50.2	604	50.2	604	0.6	8.9	13.4

Poplar: 8m x 8m Unthinned **Yield Class 12** **Table 8**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	8.2	11.6	1.6	5	1.6	5	0.7	4.2	1.0
10	156	15.4	22.5	6.2	39	6.2	39	1.1	9.4	3.9
15	156	21.2	31.6	12.2	99	12.2	99	1.3	14.1	6.6
20	156	26.2	39.6	19.2	178	19.2	178	1.4	16.9	8.9
25	156	30.0	46.2	26.2	266	26.2	266	1.3	17.4	10.6
30	156	33.0	51.5	32.5	349	32.5	349	1.2	15.6	11.6
35	156	35.4	55.4	37.6	421	37.6	421	0.9	12.8	12.0
40	156	37.0	58.3	41.6	478	41.6	478	0.7	10.2	12.0
45	156	38.2	60.4	44.7	523	44.7	523	0.5	8.0	11.6
50	156	39.2	61.9	46.9	555	46.9	555	0.4	6.4	11.1
55	156	39.8	63.2	49.1	584	49.1	584	0.3	5.2	10.6
60	156	40.4	64.2	50.5	608	50.5	608	0.3	4.3	10.1

Poplar: 8m x 8m Unthinned **Yield Class 10** **Table 9**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	7.5	10.4	1.3	3	1.3	3	0.5	3.1	0.7
10	156	14.1	20.6	5.2	30	5.2	30	0.9	7.7	3.1
15	156	19.6	29.2	10.4	80	10.4	80	1.1	11.8	5.3
20	156	24.3	36.6	16.4	145	16.4	145	1.2	14.0	7.3
25	156	28.0	42.8	22.4	218	22.4	218	1.2	14.4	8.7
30	156	30.9	47.7	27.9	288	27.9	288	1.0	13.4	9.6
35	156	33.2	51.6	32.6	351	32.6	351	0.8	11.4	10.0
40	156	34.8	54.3	36.1	400	36.1	400	0.6	9.2	10.0
45	156	35.9	56.4	39.0	440	39.0	440	0.5	6.9	9.8
50	156	36.8	57.9	41.1	470	41.1	470	0.4	5.4	9.4
55	156	37.6	59.1	42.8	494	42.8	494	0.3	4.4	9.0
60	156	38.0	60.0	44.1	513	44.1	513	0.3	3.5	8.6

Poplar: 8m x 8m Unthinned **Yield Class 8** **Table 10**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	6.6	8.9	1.0	2	1.0	2	0.4	2.0	0.4
10	156	12.6	18.3	4.1	21	4.1	21	0.7	5.7	2.1
15	156	17.8	26.2	8.4	60	8.4	60	1.0	9.2	4.0
20	156	22.2	33.3	13.6	113	13.6	113	1.1	11.2	5.7
25	156	25.8	39.0	18.6	171	18.6	171	1.0	11.6	6.8
30	156	28.4	43.5	23.2	228	23.2	228	0.9	10.9	7.6
35	156	30.6	47.1	27.2	279	27.2	279	0.7	9.2	8.0
40	156	32.0	49.8	30.4	321	30.4	321	0.6	7.4	8.0
45	156	33.2	51.7	32.8	354	32.8	354	0.4	5.9	7.9
50	156	34.1	53.2	34.7	380	34.7	380	0.3	4.6	7.6
55	156	34.8	54.3	36.1	400	36.1	400	0.2	3.6	7.3
60	156	35.2	55.1	37.2	416	37.2	416	0.2	2.8	6.9

Poplar: 8m x 8m Unthinned **Yield Class 6** **Table 11**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	5.6	7.2	0.6	1	0.6	1	0.3	0.8	0.2
10	156	11.0	15.8	3.1	14	3.1	14	0.6	4.2	1.4
15	156	15.7	23.0	6.5	42	6.5	42	0.7	6.7	2.8
20	156	19.7	29.3	10.5	80	10.5	80	0.8	8.0	4.0
25	156	23.0	34.5	14.6	123	14.6	123	0.8	8.6	4.9
30	156	25.5	38.6	18.3	166	18.3	166	0.7	8.2	5.5
35	156	27.5	41.9	21.5	206	21.5	206	0.6	7.3	5.9
40	156	29.0	44.4	24.2	240	24.2	240	0.5	6.2	6.0
45	156	30.0	46.4	26.4	268	26.4	268	0.4	4.7	6.0
50	156	30.9	47.7	27.9	288	27.9	288	0.3	3.7	5.8
55	156	31.5	48.7	29.1	304	29.1	304	0.2	2.8	5.5
60	156	31.9	49.4	29.9	316	29.9	316	0.2	2.0	5.3

Poplar: 8m x 8m Unthinned **Yield Class 4** **Table 12**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	156	4.3	4.9	0.3	–	0.3	–	0.2	–	–
10	156	8.9	12.6	2.0	7	2.0	7	0.4	2.2	0.7
15	156	13.0	19.1	4.5	24	4.5	24	0.5	4.5	1.6
20	156	16.7	24.6	7.4	50	7.4	50	0.6	5.6	2.5
25	156	19.6	29.2	10.4	80	10.4	80	0.6	6.0	3.2
30	156	22.0	33.0	13.3	110	13.3	110	0.5	5.8	3.7
35	156	23.9	35.9	15.8	138	15.8	138	0.5	5.0	3.9
40	156	25.2	38.2	17.9	161	17.9	161	0.4	4.2	4.0
45	156	26.2	39.9	19.5	180	19.5	180	0.3	3.3	4.0
50	156	27.0	41.0	20.6	194	20.6	194	0.2	2.5	3.9
55	156	27.5	41.9	21.5	205	21.5	205	0.1	1.9	3.7
60	156	27.9	42.5	22.1	214	22.1	214	0.1	1.4	3.6

Poplar: 4m x 4m Unthinned **Yield Class 26** **Table 13**

Note: Total Production values are Net after mortality has been allowed for.

All values in the following tables are per hectare.

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	12.3	15.6	11.7	53	11.7	53	3.2	21.0	10.6
10	591	21.3	25.8	30.9	226	30.9	226	4.0	45.6	22.6
15	563	28.7	34.3	52.0	484	52.0	484	4.2	54.0	32.3
20	538	34.8	41.6	73.1	762	73.1	762	3.9	55.8	38.1
25	514	39.8	47.7	91.8	1040	91.8	1040	3.5	54.0	41.6
30	494	43.8	53.0	109.0	1299	109.0	1299	3.2	48.5	43.3

Poplar: 4m x 4m Unthinned **Yield Class 24** **Table 14**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	11.8	15.0	10.8	47	10.8	47	3.1	19.0	9.4
10	593	20.7	25.1	29.3	208	29.3	208	3.9	41.5	20.8
15	567	28.0	33.5	50.0	448	50.0	448	4.1	51.0	29.9
20	543	33.8	40.4	69.6	711	69.6	711	3.7	52.8	35.6
25	518	38.6	46.3	87.2	972	87.2	972	3.3	50.7	38.9
30	499	42.6	51.4	103.3	1214	103.3	1214	3.0	46.0	40.5

Poplar: 4m x 4m Unthinned **Yield Class 22** **Table 15**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	11.3	14.4	10.0	42	10.0	42	3.0	17.6	8.4
10	594	20.0	24.3	27.6	190	27.6	190	3.8	38.0	19.0
15	570	27.1	32.5	47.3	415	47.3	415	3.9	48.0	27.7
20	547	32.8	39.3	66.4	664	66.4	664	3.6	49.8	33.2
25	524	37.5	44.9	83.0	908	83.0	908	3.1	47.0	36.3
30	505	41.2	49.5	97.2	1124	97.2	1124	2.8	41.6	37.5

Poplar: 4m x 4m Unthinned **Yield Class 20** **Table 16**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	10.8	13.7	9.0	36	9.0	36	2.9	16.0	7.2
10	597	19.2	23.4	25.7	172	25.7	172	3.6	35.8	17.2
15	574	26.2	31.4	44.4	380	44.4	380	3.7	44.6	25.3
20	551	31.7	38.0	62.5	612	62.5	612	3.4	46.6	30.6
25	531	36.2	43.4	78.6	842	78.6	842	2.9	43.6	33.7
30	514	39.8	47.8	92.2	1045	92.2	1045	2.5	39.0	34.8
35	499	42.6	51.4	103.3	1232	103.3	1232	2.2	34.6	35.2

Poplar: 4m x 4m Unthinned **Yield Class 18** **Table 17**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	10.2	12.9	8.0	30	8.0	30	2.8	15.0	6.0
10	596	18.4	22.6	23.9	154	23.9	154	3.4	31.8	15.4
15	576	25.1	30.2	41.3	342	41.3	342	3.5	40.8	22.8
20	557	30.5	36.5	58.3	556	58.3	556	3.2	43.2	27.8
25	537	34.9	41.8	73.7	770	73.7	770	2.7	40.8	30.8
30	519	38.3	45.8	85.5	948	85.5	948	2.2	34.6	31.6
35	507	41.0	49.2	96.4	1110	96.4	1110	1.9	29.4	31.7
40	497	42.9	51.9	105.1	1241	105.1	1241	1.6	24.7	31.0

Poplar: 4m x 4m Unthinned **Yield Class 16** **Table 18**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	9.6	12.2	7.2	25	7.2	25	2.7	13.4	5.0
10	601	17.5	21.6	22.0	136	22.0	136	3.2	29.0	13.6
15	583	24.0	28.9	38.2	305	38.2	305	3.2	36.4	20.3
20	562	29.2	34.9	53.8	497	53.8	497	3.0	39.0	24.9
25	544	33.4	40.0	68.4	693	68.4	693	2.5	37.0	27.7
30	529	36.7	43.9	80.1	865	80.1	865	2.1	31.4	28.8
35	516	39.2	47.1	89.9	1010	89.9	1010	1.8	26.2	28.9
40	506	41.1	49.4	97.0	1120	97.0	1120	1.5	21.6	28.0
45	500	42.3	51.0	102.1	1197	102.1	1197	1.2	17.0	26.6

Poplar: 4m x 4m Unthinned **Yield Class 14** **Table 19**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	8.9	11.3	6.1	20	6.1	20	2.5	12.0	4.0
10	603	16.5	20.4	19.7	116	19.7	116	2.9	25.0	11.6
15	585	22.7	27.4	34.5	265	34.5	265	3.0	32.8	17.7
20	568	27.8	33.2	49.2	439	49.2	439	2.8	35.4	22.0
25	550	31.8	38.1	62.7	615	62.7	615	2.3	33.8	24.6
30	537	35.0	42.1	74.8	783	74.8	783	1.9	29.0	26.1
35	525	37.4	44.8	82.8	903	82.8	903	1.6	23.6	25.8
40	516	39.2	46.9	89.1	998	89.1	998	1.3	18.8	25.0
45	511	40.3	48.4	94.0	1073	94.0	1073	1.1	14.4	23.8

Poplar: 4m x 4m Unthinned **Yield Class 12** **Table 20**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	8.2	10.4	5.2	16	5.2	16	2.1	9.6	3.2
10	606	15.4	19.0	17.2	95	17.2	95	2.6	21.0	9.5
15	591	21.2	25.7	30.7	223	30.7	223	2.7	29.0	14.9
20	574	26.2	31.4	44.4	380	44.4	380	2.6	31.6	19.0
25	559	30.0	35.9	56.6	535	56.6	535	2.2	29.8	21.4
30	546	33.0	39.6	67.2	676	67.2	676	1.8	26.0	22.5
35	534	35.4	42.3	75.0	792	75.0	792	1.5	20.4	22.6
40	526	37.0	44.2	80.7	876	80.7	876	1.2	16.0	21.9
45	520	38.2	45.7	85.3	943	85.3	943	1.0	12.8	21.0
50	516	39.2	46.9	89.1	998	89.1	998	0.8	10.4	20.0
55	513	39.8	47.8	92.2	1046	92.2	1046	0.6	8.5	19.0
60	511	40.4	48.5	94.4	1079	94.4	1079	0.4	7.0	18.0

Poplar: 4m x 4m Unthinned **Yield Class 10** **Table 21**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	7.5	9.4	4.2	12	4.2	12	1.8	7.0	2.4
10	609	14.1	17.6	14.8	76	14.8	76	2.3	17.2	7.6
15	596	19.6	23.9	26.7	183	26.7	183	2.4	24.4	12.2
20	581	24.3	29.2	38.9	315	38.9	315	2.4	27.4	15.8
25	566	28.0	33.6	50.2	452	50.2	452	2.1	26.6	18.1
30	555	30.9	37.1	60.0	578	60.0	578	1.7	22.6	19.3
35	545	33.2	39.7	67.5	679	67.5	679	1.4	18.1	19.4
40	538	34.8	41.6	73.1	762	73.1	762	1.1	14.1	19.1
45	532	35.9	42.9	76.9	818	76.9	818	0.8	11.2	18.2
50	528	36.8	44.0	80.3	869	80.3	869	0.7	8.8	17.4
55	524	37.6	45.0	83.3	913	83.3	913	0.5	7.0	16.6
60	521	38.0	45.5	84.7	934	84.7	934	0.3	5.6	15.6

Poplar: 4m x 4m Unthinned **Yield Class 8** **Table 22**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	6.6	8.2	3.2	8	3.2	8	1.5	4.6	1.6
10	609	12.6	16.0	12.2	57	12.2	57	2.0	13.5	5.7
15	600	17.8	21.9	22.6	142	22.6	142	2.1	19.6	9.5
20	588	22.2	26.8	33.2	250	33.2	250	2.1	22.4	12.5
25	575	25.8	30.9	43.1	364	43.1	364	1.8	22.2	14.6
30	564	28.4	34.0	51.2	465	51.2	465	1.5	19.6	15.5
35	556	30.6	36.6	58.5	559	58.5	559	1.2	15.6	16.0
40	549	32.0	38.4	63.6	628	63.6	628	1.0	12.2	15.7
45	544	33.2	39.8	67.7	682	67.7	682	0.7	9.2	15.2
50	541	34.1	40.8	70.7	727	70.7	727	0.6	7.0	14.5
55	538	34.8	41.6	73.1	762	73.1	762	0.4	5.2	13.9
60	536	35.2	42.1	74.6	783	74.6	783	0.3	4.0	13.1

Poplar: 4m x 4m Unthinned **Yield Class 6** **Table 23**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	5.6	6.8	2.2	4	2.2	4	1.0	1.2	0.8
10	612	11.0	13.9	9.3	38	9.3	38	1.6	10.0	3.8
15	603	15.7	19.5	18.0	102	18.0	102	1.8	15.0	6.8
20	596	19.7	24.0	27.0	185	27.0	185	1.8	17.6	9.3
25	584	23.0	27.8	35.4	275	35.4	275	1.6	17.6	11.0
30	576	25.5	30.6	42.4	355	42.4	355	1.3	15.8	11.8
35	569	27.5	32.9	48.4	429	48.4	429	1.1	12.8	12.3
40	563	29.0	34.6	52.9	488	52.9	488	0.9	10.0	12.2
45	559	30.0	36.0	56.9	539	56.9	539	0.6	7.8	11.9
50	555	30.9	37.1	60.0	578	60.0	578	0.5	5.9	11.6
55	553	31.5	37.7	61.7	602	61.7	602	0.3	4.2	10.9
60	550	31.9	38.2	63.0	620	63.0	620	0.2	3.2	10.3

Poplar: 4m x 4m Unthinned **Yield Class 4** **Table 24**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	612	4.3	5.0	1.2	–	1.2	–	0.6	–	–
10	612	8.9	11.3	6.1	20	6.1	20	1.2	6.0	2.0
15	609	13.0	16.5	13.0	62	13.0	62	1.4	10.0	4.1
20	603	16.7	20.6	20.1	120	20.1	120	1.4	12.4	6.0
25	597	19.6	23.9	26.8	183	26.8	183	1.3	12.8	7.3
30	588	22.0	26.6	32.7	245	32.7	245	1.1	12.0	8.2
35	581	23.9	28.8	37.8	301	37.8	301	0.9	10.4	8.6
40	578	25.2	30.4	42.0	351	42.0	351	0.7	8.4	8.8
45	575	26.2	31.5	44.8	384	44.8	384	0.5	6.4	8.5
50	572	27.0	32.4	47.2	413	47.2	413	0.4	4.6	8.3
55	569	27.5	32.9	48.4	429	48.4	429	0.2	3.5	7.8
60	566	27.9	33.4	49.6	444	49.6	444	0.1	2.6	7.4

Poplar: 3m x 3m Unthinned **Yield Class 26** **Table 25**

Note: Total Production values are Net after mortality has been allowed for.

All values in the following tables are per hectare.

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1064	12.3	14.2	16.8	76	16.8	76	5.6	39.5	15.2
10	1013	21.3	23.4	43.6	316	43.6	316	5.1	54.2	31.6
15	951	28.7	30.0	67.4	613	67.4	613	4.3	57.2	40.9
20	885	34.8	35.4	86.9	888	86.9	888	3.5	53.0	44.4

Poplar: 3m x 3m Unthinned **Yield Class 24** **Table 26**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1067	11.8	13.6	15.5	68	15.5	68	5.4	36.5	13.5
10	1017	20.7	22.8	41.7	295	41.7	295	5.0	51.8	29.5
15	958	28.0	29.4	64.8	577	64.8	577	4.2	55.0	38.5
20	893	33.8	34.6	83.7	842	83.7	842	3.4	51.0	42.1

Poplar: 3m x 3m Unthinned **Yield Class 22** **Table 27**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1069	11.3	13.2	14.5	61	14.5	61	5.2	35.0	12.1
10	1020	20.0	22.2	39.5	272	39.5	272	4.8	49.0	27.2
15	967	27.1	28.6	62.1	542	62.1	542	4.1	52.8	36.1
20	904	32.8	33.6	80.4	796	80.4	796	3.3	49.0	39.8

Poplar: 3m x 3m Unthinned **Yield Class 20** **Table 28**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1072	10.8	12.6	13.3	53	13.3	53	4.9	32.0	10.5
10	1027	19.2	21.5	37.3	250	37.3	250	4.6	46.0	25.0
15	975	26.2	27.8	59.2	502	59.2	502	4.0	49.6	33.5
20	918	31.7	32.7	77.1	749	77.1	749	3.3	46.6	37.4

Poplar: 3m x 3m Unthinned **Yield Class 18** **Table 29**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1074	10.2	11.9	12.0	45	12.0	45	4.3	26.0	8.9
10	1031	18.4	20.5	34.0	220	34.0	220	4.4	43.0	22.0
15	984	25.1	26.8	55.5	457	55.5	457	3.9	47.2	30.5
20	931	30.5	31.6	73.0	686	73.0	686	3.2	45.3	34.3
25	882	34.9	35.6	87.8	900	87.8	900	2.6	40.2	36.0

Poplar: 3m x 3m Unthinned **Yield Class 16** **Table 30**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1077	9.6	11.2	10.6	37	10.6	37	4.0	22.0	7.4
10	1037	17.5	19.6	31.3	194	31.3	194	4.2	40.6	19.4
15	993	24.0	25.8	52.1	414	52.1	414	3.8	44.2	27.6
20	947	29.2	30.5	69.2	633	69.2	633	3.1	42.1	31.7
25	898	33.4	34.2	82.8	832	82.8	832	2.5	37.5	33.3

Poplar: 3m x 3m Unthinned **Yield Class 14** **Table 31**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1080	8.9	10.5	9.4	30	9.4	30	3.6	20.0	6.1
10	1042	16.5	18.5	28.0	164	28.0	164	4.0	36.0	16.4
15	1003	22.7	24.7	48.0	366	48.0	366	3.6	40.8	24.4
20	960	27.8	29.2	64.3	570	64.3	570	2.9	39.8	28.5
25	916	31.8	32.8	77.4	760	77.4	760	2.4	33.6	30.4
30	882	35.0	35.6	88.0	906	88.0	906	1.9	25.7	30.2

Poplar: 3m x 3m Unthinned **Yield Class 12** **Table 32**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1082	8.2	9.8	8.2	24	8.2	24	3.1	16.0	4.9
10	1049	15.4	17.4	24.9	138	24.9	138	3.6	30.2	13.8
15	1013	21.2	23.4	43.4	314	43.4	314	3.4	36.6	20.9
20	975	26.2	27.8	59.2	502	59.2	502	2.8	36.0	25.1
25	938	30.0	31.2	71.7	673	71.7	673	2.2	30.8	26.9
30	902	33.0	33.8	81.2	807	81.2	807	1.8	24.5	26.9

Poplar: 3m x 3m Unthinned **Yield Class 10** **Table 33**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1084	7.5	8.9	6.7	18	6.7	18	2.6	13.4	3.7
10	1055	14.1	16.1	21.5	110	21.5	110	3.2	23.9	11.0
15	1022	19.6	21.8	38.0	258	38.0	258	3.2	32.2	17.2
20	991	24.3	26.2	53.2	427	53.2	427	2.7	33.0	21.4
25	957	28.0	29.5	65.4	585	65.4	585	2.1	28.4	23.4
30	927	30.9	32.0	74.6	713	74.6	713	1.7	23.0	23.8
35	905	33.2	34.0	81.9	816	81.9	816	1.3	18.6	23.3

Poplar: 3m x 3m Unthinned **Yield Class 8** **Table 3**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1089	6.6	7.9	5.3	12	5.3	12	2.2	9.6	2.5
10	1062	12.6	14.6	17.7	82	17.7	82	2.7	18.8	8.2
15	1035	17.8	19.9	32.2	202	32.2	202	2.9	27.6	13.5
20	1008	22.2	24.2	46.6	350	46.6	350	2.5	28.6	17.5
25	979	25.8	27.4	57.7	485	57.7	485	2.0	25.2	19.4
30	953	28.4	29.8	66.5	600	66.5	600	1.6	21.0	20.0
35	931	30.6	31.7	73.4	695	73.4	695	1.2	16.7	19.9
40	913	32.0	33.1	78.7	769	78.7	769	1.0	13.0	19.2

Poplar: 3m x 3m Unthinned **Yield Class 6** **Table 35**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1093	5.6	6.6	3.7	9	3.7	9	1.7	5.0	1.8
10	1071	11.0	12.8	13.8	56	13.8	56	2.2	14.3	5.6
15	1047	15.7	17.7	25.8	146	25.8	146	2.4	21.0	9.7
20	1021	19.7	21.8	38.1	260	38.1	260	2.3	23.0	13.0
25	1000	23.0	24.9	48.7	375	48.7	375	1.9	22.0	15.0
30	981	25.5	27.2	57.0	475	57.0	475	1.5	18.7	15.8
35	963	27.5	29.0	63.6	560	63.6	560	1.1	14.9	16.0
40	950	29.0	30.3	68.5	626	68.5	626	0.9	11.3	15.6
45	937	30.0	31.2	71.9	676	71.9	676	0.6	8.4	15.0
50	927	30.9	32.0	74.6	713	74.6	713	0.3	6.1	14.3
55	920	31.5	32.5	76.5	740	76.5	740	0.3	4.1	13.4
60	915	31.9	32.8	77.6	758	77.6	758	0.2	2.8	12.6

Poplar: 3m x 3m Unthinned **Yield Class 4** **Table 36**

Age years	Main crop					Cumulative production		Current annual increment		Mean annual volume increment over bark m^3
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	
5	1098	4.3	4.9	2.1	–	2.1	–	1.1	–	–
10	1080	8.9	10.5	9.4	30	9.4	30	1.7	8.8	3.0
15	1061	13.0	15.0	18.8	89	18.8	89	1.9	14.4	5.9
20	1040	16.7	18.7	28.6	170	28.6	170	1.9	17.2	8.5
25	1022	19.6	21.8	38.0	258	38.0	258	1.7	17.4	10.3
30	1009	22.0	24.1	46.0	342	46.0	342	1.4	15.6	11.4
35	994	23.9	25.8	52.0	413	52.0	413	1.0	12.4	11.8
40	983	25.2	27.0	56.3	466	56.3	466	0.8	9.4	11.7
45	974	26.2	27.9	59.6	507	59.6	507	0.5	7.0	11.3
50	968	27.0	28.5	61.9	538	61.9	538	0.4	5.1	10.8
55	963	27.5	29.0	63.6	560	63.6	560	0.2	3.6	10.2
60	959	27.9	29.3	64.5	574	64.5	574	0.2	2.4	9.6

Yield Tables for Thinned Crops

Tables 37–60

Poplar: 4m x 4m thinned **Yield Class 26** **Table 37**

Note: Thinning removes 75% of trees when Crown Area Projection (CAP) ≒ 95%.

All values in the following tables are per hectare.

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	12.3	15.6	11.7	53	–	–	–	–	11.7	53	3.2	21.0	10.6	5
7	153	15.7	19.5	4.6	26	459	19.5	13.7	78	18.3	104	3.7	32.0	14.9	7
10	153	21.3	26.7	8.6	63					22.3	141	1.6	14.8	14.1	10
15	153	28.7	38.0	17.4	161					31.1	239	2.0	24.2	15.9	15
20	153	34.8	48.8	28.6	303					42.3	381	2.3	30.6	19.1	20
25	153	39.8	58.0	40.4	467					54.1	545	2.4	33.5	21.8	25
30	153	43.8	65.9	52.2	637					65.9	715	2.3	33.8	23.8	30

Poplar: 4m x 4m thinned **Yield Class 24** **Table 38**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	11.8	15.0	10.8	47	–	–	–	–	10.8	47	3.1	19.0	9.4	5
8	153	16.8	20.8	5.2	32	459	24.8	15.6	94	20.8	126	3.7	34.8	15.8	8
10	153	20.7	25.9	8.1	58					23.7	152	1.4	13.6	15.2	10
15	153	28.0	36.8	16.2	148					31.8	242	1.9	21.8	16.1	15
20	153	33.8	47.0	26.5	276					42.1	370	2.2	28.0	18.5	20
25	153	38.6	55.9	37.6	426					53.2	520	2.2	30.8	20.8	25
30	153	42.6	63.4	48.3	581					63.9	675	2.0	30.8	22.5	30

Poplar: 4m x 4m thinned **Yield Class 22** **Table 39**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	11.3	14.4	10.0	42	–	–	–	–	10.0	42	3.0	17.6	8.4	5
8	153	16.4	20.3	4.9	29	459	20.3	14.9	88	19.8	117	3.6	31.0	14.6	8
10	153	20.0	24.9	7.4	52					22.3	140	1.3	12.6	14.0	10
15	153	27.1	35.4	15.1	134					30.0	222	1.7	19.2	14.8	15
20	153	32.8	45.2	24.6	250					39.5	338	2.0	25.8	16.9	20
25	153	37.5	53.8	34.8	387					49.7	475	2.0	27.6	19.0	25
30	153	41.2	60.7	44.3	523					59.2	611	1.8	26.2	20.4	30
35	153	44.0	66.4	53.0	648					67.9	736	1.6	23.7	21.0	35

Poplar: 4m x 4m thinned **Yield Class 20** **Table 40**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	10.8	13.7	9.0	36	–	–	–	–	9.0	36	2.9	16.0	7.2	5
8	153	15.8	19.6	4.6	26	459	19.6	13.9	79	18.5	105	3.4	29.0	13.1	8
10	153	19.2	24.0	6.9	47					20.8	126	1.2	11.2	12.6	10
15	153	26.2	33.8	13.7	119					27.6	198	1.6	17.6	13.2	15
20	153	31.7	43.3	22.5	225					36.4	304	1.9	23.0	15.2	20
25	153	36.2	51.5	31.9	347					45.8	426	1.8	24.6	17.0	25
30	153	39.8	58.1	40.6	469					54.5	548	1.6	23.4	18.3	30
35	153	42.6	63.4	48.3	581					62.2	660	1.4	21.3	18.9	35

Poplar: 4m x 4m thinned **Yield Class 18** **Table 41**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	10.2	12.9	8.0	30	–	–	–	–	8.0	30	2.8	15.0	6.0	5
9	153	16.7	20.7	5.2	31	459	20.7	15.4	93	20.6	124	3.3	29.0	13.8	9
15	153	25.1	32.2	12.5	105					27.9	198	1.4	16.0	13.2	15
20	153	30.5	41.2	20.4	198					35.8	291	1.7	20.3	14.6	20
25	153	34.9	49.0	28.8	307					44.2	400	1.7	21.8	16.0	25
30	153	38.3	55.2	36.6	414					52.0	507	1.5	20.6	16.9	30
35	153	41.0	60.2	43.6	513					59.0	606	1.3	18.6	17.3	35

Poplar: 4m x 4m thinned **Yield Class 16** **Table 42**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	9.6	12.2	7.2	25	–	–	–	–	7.2	25	2.7	13.4	5.0	5
9	153	15.7	19.5	4.6	26	459	19.5	13.7	78	18.3	104	3.1	26.2	11.6	9
15	153	24.0	30.5	11.2	90					24.9	168	1.3	14.0	11.2	15
20	153	29.2	38.8	18.1	171					31.8	249	1.5	18.1	12.5	20
25	153	33.4	46.4	25.9	268					39.6	346	1.6	19.2	13.8	25
30	153	36.7	52.3	32.9	361					46.6	439	1.4	17.8	14.6	30
35	153	39.2	57.1	39.2	449					52.9	527	1.1	15.2	15.1	35
40	153	41.1	60.5	44.0	519					57.7	597	0.9	12.8	14.9	40

Poplar: 4m x 4m thinned **Yield Class 14** **Table 43**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	8.9	11.3	6.1	20	–	–	–	–	6.1	20	2.5	12.0	4.0	5
10	153	16.5	20.4	5.0	30	450	20.4	14.7	86	19.7	116	2.9	25.0	11.8	10
15	153	22.7	28.7	9.9	77					24.6	163	1.1	11.8	11.0	15
20	153	27.8	36.4	15.9	145					30.6	231	1.3	15.4	11.7	20
25	153	31.8	43.6	22.8	228					37.5	314	1.4	16.4	12.6	25
30	153	35.0	49.1	29.0	308					43.7	394	1.2	15.6	13.2	30
35	153	37.4	53.6	34.5	384					49.2	470	1.0	13.3	13.5	35
40	153	39.2	56.9	38.9	446					53.6	532	0.8	10.6	13.4	40
45	153	40.3	59.0	41.8	489					56.5	575	0.6	8.2	12.8	45

Poplar: 4m x 4m thinned **Yield Class 12** **Table 44**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	8.2	10.4	5.2	16	–	–	–	–	5.2	16	2.1	9.6	3.2	5
11	153	16.6	20.5	5.0	30	459	20.5	15.2	91	20.2	121	2.6	23.0	11.0	11
15	153	21.2	26.6	8.5	62					23.7	153	0.9	9.6	10.2	15
20	153	26.2	33.8	13.7	119					28.9	210	1.1	12.6	10.5	20
25	153	30.0	40.3	19.5	187					34.7	278	1.2	14.0	11.1	25
30	153	33.0	45.7	25.1	258					40.6	349	1.1	13.4	11.6	30
35	153	35.4	49.9	29.9	321					45.1	412	0.9	11.4	11.8	35
40	153	37.0	53.0	33.8	373					49.0	464	0.7	9.0	11.6	40
45	153	38.2	55.1	36.5	411					51.7	502	0.5	7.2	11.2	45
50	153	39.2	56.9	38.9	446					54.1	537	0.4	5.6	10.7	50
55	153	39.8	58.2	40.7	471					55.9	562	0.3	4.4	10.2	55
60	153	40.4	59.1	42.0	491					57.2	582	0.3	3.6	9.7	60

Poplar: 4m x 4m thinned **Yield Class 10** **Table 45**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	7.5	9.4	4.2	120	–	–	–	–	4.2	12	1.8	7.0	2.4	5
10	609	14.1	17.6	14.8	76	–	–	–	–	14.8	76	2.3	17.2	7.6	10
12	153	16.5	20.4	5.0	30	456	20.4	14.9	89	19.9	119	2.4	20.5	9.9	12
15	153	19.6	24.4	7.2	50					22.1	139	0.8	7.8	9.3	15
20	153	24.3	31.0	11.6	95					26.5	184	1.0	10.0	9.2	20
25	153	28.0	36.9	16.4	150					31.3	239	1.0	11.2	9.6	25
30	153	30.9	41.9	21.1	207					37.0	296	1.0	11.0	9.9	30
35	153	33.2	45.9	25.3	260					40.2	349	0.8	9.6	10.0	35
40	153	34.8	48.8	28.6	303					43.5	392	0.6	7.6	9.8	40
45	153	35.9	50.8	31.0	334					45.9	423	0.5	6.2	9.4	45
50	153	36.8	52.5	33.1	364					48.0	453	0.4	4.8	9.1	50
55	153	37.6	53.9	34.9	389					49.8	478	0.3	4.0	8.7	55
60	153	38.0	54.7	36.0	404					50.9	493	0.2	3.0	8.2	60

Poplar: 4m x 4m thinned **Yield Class 8** **Table 46**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	6.6	8.2	3.2	8	–	–	–	–	3.2	8	1.5	4.6	1.6	5
10	609	12.6	16.0	12.2	57	–	–	–	–	12.2	47	2.0	13.5	5.7	10
14	153	16.8	20.8	5.2	31	456	20.8	15.5	94	20.7	125	2.1	18.6	8.9	14
20	153	22.2	28.0	9.4	72					24.9	166	0.8	7.6	8.3	20
25	153	25.8	33.2	13.2	113					28.7	207	0.8	8.5	8.3	25
30	153	28.4	37.5	16.9	156					32.4	250	0.7	8.6	8.3	30
35	153	30.6	41.2	20.4	199					35.9	293	0.6	7.8	8.4	35
40	153	32.0	43.9	23.2	233					38.7	327	0.5	6.6	8.2	40
45	153	33.2	46.0	25.4	261					40.9	355	0.4	5.2	7.9	45
50	153	34.1	47.6	27.2	285					42.7	379	0.3	4.1	7.6	50
55	153	34.8	48.8	28.6	303					44.1	397	0.2	3.1	7.2	55
60	153	35.2	49.5	29.4	315					44.9	409	0.2	2.2	6.8	60

Poplar: 4m x 4m thinned **Yield Class 6** **Table 47**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	5.6	6.8	2.2	4	–	–	–	–	2.2	4	1.0	1.2	0.8	5
10	612	11.0	13.9	9.3	38	–	–	–	–	9.3	38	1.6	10.0	3.8	10
16	153	16.6	20.5	5.0	30	459	20.5	15.2	91	20.2	121	1.8	15.6	7.6	16
20	153	19.7	24.5	7.2	50					22.4	141	0.5	5.4	7.1	20
25	153	23.0	29.1	10.2	80					25.4	171	0.6	5.9	6.8	25
30	153	25.5	32.8	12.9	110					28.1	201	0.5	6.0	6.7	30
35	153	27.5	36.0	15.6	140					30.8	231	0.5	5.6	6.6	35
40	153	29.0	38.4	17.7	166					32.9	257	0.4	4.8	6.4	40
45	153	30.0	40.4	19.6	189					34.8	280	0.3	3.9	6.2	45
50	153	30.9	41.9	21.1	207					36.3	298	0.3	2.9	6.0	50
55	153	31.5	42.9	22.1	220					37.3	311	0.2	2.1	5.7	55
60	153	31.9	43.6	22.8	229					38.0	320	0.1	1.6	5.3	60

Poplar: 4m x 4m thinned **Yield Class 4** **Table 48**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	612	4.3	5.0	1.2	–	–	–	–	–	1.2	–	0.6	–	–	5
10	612	8.9	11.3	6.1	20	–	–	–	–	6.1	20	1.2	6.0	2.0	10
15	609	13.0	16.5	13.0	62	–	–	–	–	13.0	62	1.4	10.0	4.1	15
19	153	16.0	19.8	4.7	27	456	19.8	14.1	81	18.8	108	1.4	12.0	5.7	19
25	153	19.6	24.4	7.2	50					21.3	131	0.4	3.8	5.2	25
30	153	22.0	27.7	9.2	70					23.3	151	0.4	4.0	5.0	30
35	153	23.9	30.4	11.1	90					25.2	171	0.4	3.9	4.9	35
40	153	25.2	32.4	12.6	106					26.7	187	0.3	3.2	4.7	40
45	153	26.2	34.0	13.9	121					28.0	202	0.2	2.6	4.5	45
50	153	27.0	35.2	14.9	132					29.0	213	0.2	1.8	4.3	50
55	153	27.5	36.0	15.6	140					29.7	221	0.1	1.4	4.0	55
60	153	27.9	36.6	16.1	147					30.2	228	0.1	1.2	3.8	60

Poplar: 3m x 3m thinned **Yield Class 26** **Table 49**

Note: 1st Thinning removes 50% of the trees when crown area projection (CAP) ≒ 90%, when mean diameter ≒ 14cm, average crown diameter (cd) ≒ 3.3m, Top Height ≒ 12.1m.
2nd Thinning removes 75% of remaining trees when crown area projection (CAP) ≒ 90%, when mean diameter ≒ 21cm, average crown diameter (cd) ≒ 4.6m, Top Height ≒ 18.8m.
All values in the folowing tables are per hectare.

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	532	12.3	14.2	8.4	38	532	14.2	8.4	38	16.8	76	5.6	39.5	15.2	5
8	133	17.5	20.5	4.4	28	399	20.5	13.2	82	26.0	148	1.9	16.2	18.5	8
10	133	21.3	25.4	6.8	50					28.4	170	1.2	12.7	17.0	10
15	133	28.7	36.7	14.1	131					35.7	251	1.7	20.5	16.7	15
20	133	34.8	47.6	23.6	250					45.2	370	2.0	26.4	18.5	20
25	133	39.8	57.3	34.3	396					55.9	516	2.2	30.4	20.6	25

Poplar: 3m x 3m thinned **Yield Class 24** **Table 50**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	534	11.8	13.6	7.8	34	533	13.6	7.7	34	15.5	68	5.4	36.5	13.5	5
9	134	18.7	22.0	5.1	33	400	22.0	15.2	100	28.0	167	2.5	20.8	18.6	9
15	134	28.0	35.6	13.3	122					36.2	256	1.6	18.5	17.1	15
20	134	33.8	45.7	22.0	228					44.9	362	1.9	24.0	18.1	20
25	134	38.6	55.1	32.0	363					54.9	497	2.0	28.0	19.9	25

Poplar: 3m x 3m thinned **Yield Class 22** **Table 51**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	534	11.3	13.2	7.3	31	535	13.2	7.2	30	14.5	61	5.2	35.0	12.1	5
9	134	18.2	21.4	4.8	31	400	21.4	14.4	93	26.4	154	2.3	19.0	17.1	9
15	134	27.1	34.2	12.3	110					33.9	233	1.5	16.6	15.5	15
20	134	32.8	43.8	20.2	206					41.8	329	1.7	22.0	16.5	20
25	134	37.5	52.8	29.3	327					50.9	450	1.8	26.2	18.0	25

Poplar: 3m x 3m thinned **Yield Class 20** **Table 52**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
6	532	12.4	14.4	8.6	39	531	14.4	8.6	39	17.2	78	4.9	35.0	13.0	6
9	133	18.5	21.7	4.9	32	399	21.7	14.8	97	28.3	168	2.7	23.4	18.7	9
15	133	26.2	32.7	11.2	96					34.6	232	1.3	14.8	15.5	15
20	133	31.7	41.8	18.2	182					41.6	318	1.6	19.4	15.9	20
25	133	36.2	50.3	26.4	288					49.8	424	1.6	21.8	17.0	25
30	133	39.8	57.4	34.4	398					57.8	534	1.5	21.8	17.8	30

Poplar: 3m x 3m thinned **Yield Class 18** **Table 53**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
6	534	11.8	13.6	7.8	34	533	13.6	7.7	34	15.5	68	4.4	31.0	11.3	6
10	134	18.4	21.6	4.9	32	400	21.6	14.7	95	27.3	161	2.1	18.0	16.1	10
15	134	25.1	31.0	10.2	85					32.6	214	1.2	13.3	14.3	15
20	134	30.5	39.8	16.7	162					39.1	291	1.4	17.4	14.6	20
25	134	34.9	47.8	24.1	256					46.5	385	1.5	19.1	15.4	25
30	134	38.3	54.4	31.2	352					53.6	481	1.3	19.1	16.0	30

Poplar: 3m x 3m thinned **Yield Class 16** **Table 54**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1077	9.6	11.2	10.6	37	–	–	–	–	10.6	37	4.0	22.0	7.4	5
7	531	12.6	14.6	8.8	41	531	14	8.8	41	17.7	82	3.3	22.5	11.7	7
11	133	18.6	21.9	5.0	33	398	21.9	15.0	98	28.8	172	2.2	16.4	15.6	11
15	133	24.0	29.3	9.0	73					32.8	212	1.1	11.6	14.1	15
20	133	29.2	37.6	14.8	139					38.6	278	1.2	14.6	13.9	20
25	133	33.4	45.1	21.2	220					45.0	359	1.3	16.4	14.4	25
30	133	36.7	51.1	27.3	300					51.1	439	1.2	16.2	14.6	30
35	133	39.2	56.3	33.1	378					56.9	517	1.1	14.5	14.8	35

Poplar: 3m x 3m thinned **Yield Class 14** **Table 55**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1080	8.9	10.5	9.4	30	–	–	–	–	9.4	30	3.6	20.0	6.1	5
7	533	11.9	13.8	8.0	35	533	13.8	7.9	35	15.9	70	3.0	25.0	10.0	7
11	133	17.7	20.8	4.5	29	400	20.8	13.5	85	25.9	149	2.0	13.9	13.5	11
15	133	22.7	27.4	7.9	61					29.3	181	0.9	9.6	12.1	15
20	133	27.8	35.3	13.0	118					34.4	238	1.1	12.6	11.9	20
25	133	31.8	42.2	18.6	186					40.0	306	1.1	13.8	12.2	25
30	133	35.0	47.9	24.0	255					45.4	375	1.0	13.6	12.5	30
35	133	37.4	52.6	28.9	321					50.3	441	0.9	12.1	12.6	35
40	133	39.2	56.2	32.9	375					54.3	495	0.7	9.5	12.4	40

Poplar: 3m x 3m thinned **Yield Class 12** **Table 56**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1082	8.2	9.8	8.2	24	–	–	–	–	8.2	24	3.1	16.0	4.9	5
8	532	12.5	14.4	8.7	40	531	14.4	8.6	39	17.3	79	3.5	18.8	9.9	8
12	133	18.0	21.0	4.6	30	399	21.0	13.9	89	27.1	158	2.1	13.0	13.2	12
15	133	21.2	25.4	6.7	50					29.2	178	0.8	7.7	11.9	15
20	133	26.2	32.7	11.2	97					33.7	225	0.9	10.4	11.3	20
25	133	30.0	39.0	15.9	152					38.4	280	0.9	11.6	11.2	25
30	133	33.0	44.3	20.5	210					43.0	338	0.9	11.5	11.3	30
35	133	35.4	48.6	24.7	266					47.2	394	0.7	10.0	11.3	35
40	133	37.0	51.9	28.1	311					50.6	439	0.6	8.2	11.0	40
45	133	38.2	54.2	30.7	347					53.2	475	0.5	6.5	10.6	45
50	133	39.2	56.2	32.9	375					55.4	503	0.4	5.4	10.1	50
55	133	39.8	57.5	34.5	400					57.0	528	0.3	4.4	9.6	55

Poplar: 3m x 3m thinned **Yield Class 10** **Table 57**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1084	7.5	8.9	6.7	18	–	–	–	–	6.7	18	2.6	13.4	3.7	5
8	534	11.6	13.4	7.6	33	534	13.4	7.6	33	15.2	66	3.0	15.8	8.2	8
13	134	17.7	20.8	4.5	29	400	20.8	13.5	85	25.6	147	1.8	8.0	11.3	13
15	134	19.6	23.2	5.7	39					26.8	157	0.6	5.6	10.5	15
20	134	24.3	29.8	9.4	76					30.5	194	0.7	8.2	9.7	20
25	134	28.0	35.8	13.5	123					34.6	241	0.8	9.4	9.6	25
30	134	30.9	40.5	17.3	169					38.4	287	0.7	9.7	9.6	30
35	134	33.2	44.5	20.8	214					41.9	332	0.6	8.2	9.5	35
40	134	34.8	47.6	23.8	252					44.9	370	0.5	6.6	9.3	40
45	134	35.9	49.6	26.1	282					47.2	400	0.4	5.2	8.9	45
50	134	36.8	51.4	27.8	306					48.9	424	0.3	4.2	8.5	50
55	134	37.6	52.8	29.3	326					50.4	444	0.2	3.4	8.1	55
60	134	38.0	53.8	30.5	342					51.6	460	0.2	3.0	7.7	60

Poplar: 3m x 3m thinned **Yield Class 8** **Table 58**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1089	6.6	7.9	5.3	12	–	–	–	–	5.3	12	2.2	9.6	2.5	5
10	531	12.6	14.6	8.8	41	531	14.6	8.8	41	17.6	82	2.7	18.8	8.2	10
15	133	17.8	20.9	4.6	29	398	20.9	13.6	87	27.0	157	1.7	10.6	10.5	15
20	133	22.2	26.8	7.5	57					29.9	185	0.6	6.2	9.3	20
25	133	25.8	32.1	10.8	92					33.2	220	0.6	7.0	8.8	25
30	133	28.4	36.4	13.8	128					36.2	256	0.6	7.1	8.5	30
35	133	30.6	39.9	16.6	162					39.0	290	0.5	6.5	8.3	35
40	133	32.0	42.5	18.9	190					41.3	318	0.4	5.4	8.0	40
45	133	33.2	44.6	20.8	214					43.2	342	0.3	4.4	7.6	45
50	133	34.1	46.2	22.3	234					44.7	362	0.3	3.4	7.2	50
55	133	34.8	47.6	23.6	250					46.0	378	0.2	2.8	6.9	55
60	133	35.2	48.3	24.4	261					46.8	389	0.2	2.0	6.5	60

Poplar: 3m x 3m thinned **Yield Class 6** **Table 59**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1093	5.6	6.6	3.7	9	–	–	–	–	3.7	9	1.7	5.0	1.8	5
11	533	12.0	13.9	8.1	36	533	13.9	8.1	35	16.2	71	2.3	16.0	6.5	11
15	533	15.7	18.4	14.7	81	–	–	–	–	22.8	116	1.8	13.0	7.7	15
18	133	18.2	21.4	4.8	31	400	21.4	14.4	93	27.3	159	1.4	15.4	8.8	18
20	133	19.7	23.3	5.7	39					28.2	167	0.4	4.5	8.4	20
25	133	23.0	27.9	8.1	64					30.6	192	0.5	5.0	7.7	25
30	133	25.5	31.6	10.4	89					32.9	217	0.5	5.2	7.2	30
35	133	27.5	34.9	12.7	115					35.2	243	0.4	5.0	6.9	35
40	133	29.0	37.2	14.5	136					37.0	264	0.3	4.0	6.6	40
45	133	30.0	39.1	16.0	154					38.5	282	0.2	3.2	6.3	45
50	133	30.9	40.5	17.1	168					39.6	296	0.2	2.4	5.9	50
55	133	31.5	41.5	18.0	179					40.5	307	0.1	1.7	5.6	55
60	133	31.9	42.2	18.6	186					41.1	314	0.1	1.2	5.2	60

Poplar: 3m x 3m thinned **Yield Class 4** **Table 60**

Age years	Main crop (after thinning)					Yield from thinnings				Cumulative production		Current annual increment		Mean annual volume increment over bark m^3	Age years
	Number of trees	Top height m	Mean diameter cm	Basal area m^2	Volume over bark m^3	Number of trees	Mean diameter cm	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3	Basal area m^2	Volume over bark m^3		
5	1098	4.3	4.9	2.1	–	–	–	–	–	2.1	–	1.1	–	–	5
10	1080	8.9	10.5	9.4	30	–	–	–	–	9.4	30	1.7	8.8	3.0	10
14	532	12.1	14.0	8.2	36	533	14.0	8.2	36	16.4	72	1.9	13.2	5.2	14
20	532	16.7	19.5	15.9	96	–	–	–	–	24.1	132	1.3	10.0	6.6	20
23	133	18.4	21.6	4.9	32	399	21.6	14.6	95	27.7	163	1.2	10.4	7.1	23
25	133	19.6	23.2	5.6	39					28.4	170	0.4	3.4	6.8	25
30	133	22.0	26.4	7.3	56					30.1	187	0.3	3.4	6.2	30
35	133	23.9	29.2	8.9	72					31.7	203	0.3	3.2	5.8	35
40	133	25.2	31.3	10.2	87					33.0	218	0.2	2.8	5.5	40
45	133	26.2	32.9	11.3	99					34.1	230	0.2	2.0	5.1	45
50	133	27.0	34.0	12.1	108					34.9	239	0.1	1.4	4.8	50
55	133	27.5	34.9	12.7	115					35.5	246	0.1	1.0	4.5	55
60	133	27.9	35.6	13.2	120					36.0	251	0.1	0.8	4.2	60

£4.50