

FYST

5. The Year's Work:-

General review of operations: scope, degree of success and completion, weather and outstanding points, including incidence of pests, and disease.

WEATHER

The weather during the year has been chaotic. The result of the mild autumn of 1950 was that the N.S. and S.S. 1 year seedlings in Kilcoy had not properly hardened off by the middle of November. Winter started in January and ended in April with the result that no preparation of nurseries had been undertaken as the soil was cold and wet. On the other hand all growth was about a month late and all planting, sowing and lining out was completed by the end of May.

NURSERIES

In the nurseries the rotovator was used to help to bring the soil into a dry workable condition and it did the job very well but it may have dried out the ground too much, and this, followed by a drought put back the germination of seed beds sown after 1st. May

PLANTATIONS

In the plantations programmes have been completed but again the weather was very bad with ground either frozen or covered with snow.

Brashing cleaning and thinning are proceeding smoothly.

The big acquisition on the Black Isle has finally come through and this should all be planted before 1954.

LABOUR

The labour position up to August has been fairly satisfactory except at Urray, but with the Hydro Electric Schemes in the neighbourhood, some of our Men have left. In the last week of September these men have been told that instead of being up lifted by buses from Avoch and other places they will have to stay in Bothies provided on the site, and it is considered that married men will gradually drift back to the units in the Black Isle rather than be away from home.

Plantations formed during the year

(Appendices 1 & 2 will be prepared at Headquarters),
Observations.

Notes on planting during F.Y. 51, standard of Plants,
seed, effect of weather.

All targets were reached and at Kilcoy slightly exceeded.

The season has been very bad for planting due to the heavy frosts and length of winter. There were periods during February, March and April in which prepared ground could not be planted due to the frost in the ground, and at times beating up in areas covered by ground vegetation had to be stopped.

The main failure in F51 has been the two year seedlings ex Findon heathland nursery, these plants had a very poor root system and were planted in the "Back end" of 1950. The poor quality of the plants and the hard frosts has resulted in approx 99% death. The remainder of the species have sown reasonably well and although planting was not completed until the middle of May, this was compensated for by the fact that the growing season commenced about three to four weeks later than usual.

PREVIOUS YEARS' PLANTATIONS:-(a) *Beating up:**Observation, whether up to date, etc.,*(b) *Progress in establishment of plantations,*
*details in Appendix II & Summary in Table V.**Observation, including special notes as to areas scheduled as unsatisfactory.*

14. (a). Beating up.

With the very bad season the squads were put on to beating up in areas covered with vegetation, as prepared ground was frost bound. This resulted in all areas being completed. The S. Spruce in P. 40 and 41 at Millbuie, is to be beaten up with pines and a few poplars in FY52

(b) Progress in establishment of plantations.

The areas which are not growing satisfactorily are:- Millbuie, SS. and D.F. in P40-42.

The S.S. areas are to be beaten up with Pine and also the D.F. areas where natural S.P. is not coming in.

Findon:- There are areas of S.P. growing very slowly. Some have had drains out through them but the problem is too great for anything but a bold policy. These areas were planted on unploughed ground and they should now be ploughed and replanted. The success of this can be seen at Kilcoy.

Kilcoy:- Acquired plantations which contained groups of either failed, or poor growth has now been ploughed and planted. The two year seedlings (ex Findon wasteland) were a complete failure but these will be beaten up in Y.52.

This practice is showing reasonable results and should be tried out in the Findon areas.

*Plant Supply during year**General review*

*Observation as to suitability of home &
imported stock, large imports & exports,
stocks destroyed.*

The plant supply position has worked out fairly smoothly. The main complaints have been the rooted 2year S.P. seedlings ex Findon, ~~and~~ 2 million of these had to be destroyed, and the small size plants. Foresters are still dubious of any plants that either has come direct from a heathland nursery or originated in one.

It is hoped that a tour of the nurseries by Foresters from Mr. MacNab's, Mr. G. Campbell's and Mr. Cotter-Craig's districts in October 1951 will dispell this dislike.

17. Seed Sowing & Lining out

Observations. Seed. Quality, home collection
germination growth.

Lining out. Suitability of stock
lined out, losses, growth.

Seed

The quality of the seed received this year was on the whole above average for germination and purity. The two extremes were, the P.C. at Kilcoy wasteland, which although sown according to formula, has yielded over 30,000 seedlings per pound of seed instead of the estimated 15,000, and the E.L. in the same nursery which has produced very few but very good seedlings.

Seedling Growth

It is considered that the germination and growth of seedlings has been influenced by the moisture content of the soil during and after sowing (The same was experienced in F.Y.50) In F.Y.51, due to the very bad and late winter, the nurseries were not workable until the middle of April.

Agricultural

Sowing started at the beginning of May and ended about the 26th. The drought which started in early May continued until the 11th June and this, combined with the excessive working of the soil with rotovator and rototiller, retarded germination.

Weeding in the seed-beds has been very heavy. The light rains in mid June produced a mass of weeds and squads from Findon and Kilcoy had to go to Millbuie to help to keep the weeds under control.

Heathland

The Littleburn nurseries (Kilcoy) were prepared in early April and sowing was completed before May. They have produced seedling 2 or 3 times taller than the seed of the same origin which was sown in May.

The undercutting of 1 year S.P. seedlings has produced a far better rooted 2 year seedling than those of last year which were not undercut.

Lining-out

The backend lining-out of S.P. at Millbuie was a complete failure, practically all the plants were "lifted" by the frost.

The lining-out of P.C. which was considered

*During Aut. Suitability of Stock
bred out, losses, growth.*

Seed

The quality of the seed received this year was on the whole above average for germination and purity. The two extremes were, the P.C. at Kilcoy wasteland, which although sown according to formula, has yielded over 30,000 seedlings per pound of seed instead of the estimated 15,000, and the E.L. in the same nursery which has produced very few but very good seedlings.

Seedling Growth

It is considered that the germination and growth of seedlings has been influenced by the moisture content of the soil during and after sowing (The same was experienced in F.Y.50) In F.Y.51, due to the very bad and late winter, the nurseries were not workable until the middle of April.

Agricultural

Sowing started at the beginning of May and ended about the 26th. The drought which started in early May continued until the 11th June and this, combined with the excessive working of the soil with rotovator and rototiller, retarded germination.

Weeding in the seed-beds has been very heavy. The light rains in mid June produced a mass of weeds and squads from Findon and Kilcoy had to go to Millbuie to help to keep the weeds under control.

Heathland

The Littleburn nurseries (Kilcoy) were prepared in early April and sowing was completed before May. They have produced seedling 2 or 3 times taller than the seed of the same origin which was sown in May.

The undercutting of 1 year S.P. seedlings has produced a far better rooted 2 year seedling than those of last year which were not undercut.

Lining-out

The backend lining-out of S.P. at Millbuie was a complete failure, practically all the plants were "lifted" by the frost.

The lining-out of P.C. which were considered too small for the standard board ~~were~~ was done with a prototype Paterson 6 ft. board and has

17
Chlorine and Chlorine, have been
produced a plantable 1+1

Nearly all the lining-out was completed before the drought, the result being that on the whole reasonably good plants have been produced.

The stocks of E.L. are very low and it is hoped that where beating up was required in S.P. areas that E.L. should be used. All Foresters have been told to make collections of E.L. cones of major importance.

It is hoped that stocks of Abies will be available in F.Y.1953. for planting in Glenmeanie (STRATHCONON).

19. PLANTATION WORK:

- (a) Outstanding points affecting regeneration and establishment, especially choice of species, age and type of plant, preparation of ground (turfing and ploughing, etc.), drainage, planting, weeding and E.V.
- (b) Silvicultural considerations in respect of cleaning, thinning and felling operations.
- (c) Notes on success or failure of ploughing equipment used.

As reported last year the lack of good E.L. transplants or good 1 year seedlings ex heathland nurseries has limited the use of this species on ground which would grow good E.L. if planted in mixture with S.P. The mass production of S.P. forests is fortunately being changed to a variation in species, and various species which are recommended for black plantating are J.L., P.C. in the Black Isle and Silver Firs in smaller blocks at Strathconon. The age of plant to be used is still doubtful, the old 2+1 is still ~~the age of plant to be used~~ preferred by the Foresters in most species, and seedlings ex heathland are treated with suspicion, probably because they have not had a proper trial. The 1 year seedlings of E.L. ex heathlands are first rate plants and are suitable for planting but although the seedlings in a heathland are better than those in established nurseries it is considered that these should be planted out as a 1+1, undercutting 1 year seedlings and planting them as 2 year seedlings ~~may have to be adopted~~ because of nursery shortages, but most foresters would like to have a transplant rather than a seedling.

There has been a good crop of natural regeneration of S.P. on the Black Isle this year but those seed which have germinated on the upturned turf of ploughed ground will probably ^{be off} if 1951/52 winter is severe. Those which are growing on a light covering of vegetation are not so easily thrown up by frost.

The preparation of ground in the district has been fairly simple. The ploughing at 5 feet of all ground in the Black Isle is going to cause considerable difficulties in the thinning stage unless new methods of extraction are invented. Double furrow ploughing will make extraction easier than single furrow but a system of small rides (about 10 feet) will have to be left in order to be able to extract the produce easily and cheaply.

Planting has been done satisfactorily but larger plants are required for beating up.

Weeding in plantations has been worst at Strathconon and Urray. At Strathconon the brackens have had to be cut 3 times in some areas and the difficulty at Urray was the squad could not have tackled it without the help of 12 men from Findon for about 5 weeks.

Cleaning/

Cleaning and thinning has been proceeding satisfactorily,
but parts of F 38 at Millbuie will require cleaning in the next
two years.

20 NURSERY PRACTICE

Reviewed from the point of view of raising the correct numbers of suitable stock at the lowest prices, protection, maintenance of fertility.

Heathland Nurseries

Heathland nurseries are the cheapest method of raising seedlings. This has been very marked in the cost of weeding ~~costs~~ (Heathland 15/- to 18/- Established 90/- per 100sq. yds.) and also at the August count the Heathland Nurseries showed almost double the amounts compared with the Established Nurseries.

The chief faults in a Heathland Nursery are:-

1 Germination Figures.

These are often received too late or are incorrect, and with the exception of E.L. at Kilcoy sowing has been too dense. It is felt that if sowing had been about half density a better plant might have been produced, and, if absolutely essential, the bed could be left to produce a 2 year seedling.

2 Differences of growth in the various nurseries

It is considered that the date of sowing and the moisture content of the soil has greatly affected the growth of 1 year seedlings and resulted in the variation of germination and size.

3 Controls

There have not been enough controls in the nurseries. No conclusions can be reached as to whether the good growth in Littleburn was due to April sowing, Damp condition of the soil at sowing and for 2 weeks after, No working with the rotovator, Site. In the 2 year beds no control was kept on undercutting although the result seems to be good.

It is hoped that the following will be carried out in the nurseries in F.Y. 528-

More controls will be kept.

The dry ridges in Littleburn No2 will receive a double application of hops with the hope that it will prevent these drying out.

Watering of the nurseries during drought.

It is not known if the stratification of P.C. seed would help germination. The seed sown in Littleburn No1 was F.Y.50 collection whereas in No2 it was F.Y. 51. At the August count No1 had 31000 seedlings per lb. and No2 36000 per lb. of seed. There might have been a greater germination in No 2 if the seed had been stratified.

Established Nurseries

The weed growth in beds and lines has been very bad this year.

Backend lining-out of S.P. was a complete failure and this is not recommended unless a sheltered area of a nursery is used.

Conclusions

1. There should be a far greater area of heathland nurseries for the production of 1 year seedlings for transplanting.
2. Until more facts are known far more controls should be kept in heathland nurseries.
3. Heathland seedbeds are sown far too densely.
4. Nurseries should aim at sending out transplants until undercut seedlings are proved. Expenditure in the nursery may be cheaper than heavy B.U.
5. Experimental drillsowing in heathland nurseries should be tried out in order to raise a 2 year seedling if transplanting is too expensive.
6. The aim of nurseries should be the raising of surplus plants so that only the best are used in plantations and the trade can be offered what we don't want.
7. The rootvator should not be used excessively. The ground might be dried out too much and if sowing is followed by a drought it may setback germination.
8. Seed might be stratified if late sowing during a dry period is to be done.
9. Watering of seedbeds up to 8 weeks after sowing should be done in dry periods.



21. EXPERIMENT AND RESEARCH:

Deductions made and work done during the year, suggestions and proposals for future Conservancy or Research experiments.

Mr Frater, Kilcoy, has started to make a mechanical hop turner. He has had to stop for the lack of suitable mechanical equipment. If he could be allowed to adapt an engine to drive the forks it would probably be a great saving in turning hop waste.

25 early and 25 late flushing N.S. transplants were taken out of the lines in Findon and planted in a plot to find out if the same characteristics will recur in the following years.

An attachment is required to the rotovator which would separate the stones of over 1 inch diameter from the soil and deposit these in the lanes or into a cart to be drawn behind the rotovator.

Selective weedkillers are urgently required for nurseries .



22. FIRE PROTECTION:

Observations as to fire hazard during the year, as to adequacy and cost of preventive measures, exceptionally dangerous units, recommendations.

F.Y.51 has been a good natural fire protection year. With the rain snow and frost upto the beginning of May there was not the usual Spring danger, when the good weather came the grasses came up very quickly.

A 60 foot fire-tower has been erected at Mount Eagle and Mr Gordon, Findon, reports that he can see 16 Forests direct and another 8 can be warned of fire in their vicinity.

No fires occurred on Forestry Commission land during the year, although Lord Lovat let a muirburn get away from him between Urray and Rheindown. As reported last year the making of muirburn by estates is treated with the utmost disrespect and not nearly enough precautions are taken.

The fire equipment on the whole is in good condition. On tests all mechanical pumps worked satisfactorily.



23. OTHER PROTECTION:

Record of important events, assessment of damage done, measures taken, animals, insects, fungi, meteorological factors, etc.

Of all the animal and bird pests the Capers are becoming a menace at Millbuie. They have caused damage to the seedlings in the heathland nursery at Redtank, and also in Comps. 41&42 (P48) where most of the S.P. has been eaten.

There has been some deaths in the J.L. at Millbuie Comps. 21&22 (P47) by some unidentified agent. Healthy plants are dying, and by the evidence it would seem that the cause originates in the roots.